Key Management Interoperability Protocol Test Cases Version 1.2

Committee Note 01

11 November 2014

Specification URIs

This version:

http://docs.oasis-open.org/kmip/testcases/v1.2/cn01/kmip-testcases-v1.2-cn01.doc (Authoritative)

http://docs.oasis-open.org/kmip/testcases/v1.2/cn01/kmip-testcases-v1.2-cn01.html

http://docs.oasis-open.org/kmip/testcases/v1.2/cn01/kmip-testcases-v1.2-cn01.pdf

Previous version:

http://docs.oasis-open.org/kmip/testcases/v1.2/cnprd01/kmip-testcases-v1.2-cnprd01.doc (Authoritative)

http://docs.oasis-open.org/kmip/testcases/v1.2/cnprd01/kmip-testcases-v1.2-cnprd01.html

http://docs.oasis-open.org/kmip/testcases/v1.2/cnprd01/kmip-testcases-v1.2-cnprd01.pdf

Latest version:

http://docs.oasis-open.org/kmip/testcases/v1.2/kmip-testcases-v1.2.doc (Authoritative)

http://docs.oasis-open.org/kmip/testcases/v1.2/kmip-testcases-v1.2.html

http://docs.oasis-open.org/kmip/testcases/v1.2/kmip-testcases-v1.2.pdf

Technical Committee:

OASIS Key Management Interoperability Protocol (KMIP) TC

Chairs:

Saikat Saha (saikat.saha@oracle.com), Oracle
Tony Cox (tjc@cryptsoft.com), Cryptsoft Pty Ltd.

Editors:

Tim Hudson (tjh@cryptsoft.com), Cryptsoft Pty Ltd.
Faisal Faruqui (faisal.faruqui@thalesesec.com), Thales e-Security

Related work:

This document replaces or supersedes:

- *Key Management Interoperability Protocol Test Cases Version 1.1*. Edited by Mathias Björkqvist and Tim Hudson. Latest version. http://docs.oasis-open.org/kmip/testcases/v1.1/kmip-testcases-v1.1.html.

This document is related to:

- *Key Management Interoperability Protocol Specification Version 1.2*. Edited by Kiran Thota and Kelley Burgin. Latest version: http://docs.oasis-open.org/kmip/spec/v1.2/kmip-spec-v1.2.html.
- *Key Management Interoperability Protocol Profiles Version 1.2*. Edited by Tim Hudson and Robert Lockhart. Latest version: http://docs.oasis-open.org/kmip/profiles/v1.2/kmip-profiles-v1.2.html.
- *Key Management Interoperability Protocol Usage Guide Version 1.2.* Edited by Indra Fitzgerald and Judith Furlong. Latest version: http://docs.oasis-open.org/kmip/ug/v1.2/kmip-ug-v1.2.html.

Abstract:

This document is intended for developers and architects who wish to design systems and applications that interoperate using the Key Management Interoperability Protocol specification.

Status:

This document was last revised or approved by the OASIS Key Management Interoperability Protocol (KMIP) TC on the above date. The level of approval is also listed above. Check the "Latest version" location noted above for possible later revisions of this document. Any other numbered Versions and other technical work produced by the Technical Committee (TC) are listed at https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=kmip#technical.

Technical Committee members should send comments on this document to the Technical Committee's email list. Others should send comments to the Technical Committee by using the "Send A Comment" button on the Technical Committee's web page at https://www.oasis-open.org/committees/kmip/.

Citation format:

When referencing this document the following citation format should be used:

[kmip-testcases-v1.2]

Key Management Interoperability Protocol Test Cases Version 1.2. Edited by Tim Hudson and Faisal Faruqui. 11 November 2014. OASIS Committee Note 01. http://docs.oasis-open.org/kmip/testcases/v1.2/cn01/kmip-testcases-v1.2-cn01.html. Latest version: http://docs.oasis-open.org/kmip/testcases/v1.2/kmip-testcases-v1.2.html.

All capitalized terms in the following text have the meanings assigned to them in the OASIS Intellectual Property Rights Policy (the "OASIS IPR Policy"). The full Policy may be found at the OASIS website.

Table of Contents

1 Introduction

The purpose of this document is to describe test cases to demonstrate the Key Management Interoperability Protocol (KMIP) [KMIP-SPEC-1_2], [KMIP-SPEC-1_1], and [KMIP-SPEC-1_0]. The test cases illustrate that the concepts within the protocol are sound and how the protocol may be used when implementing KMIP in applications. These test cases are not intended to fully test an implementation of KMIP. There are test cases for v1.0, v1.1 and v1.2 of the protocol.

1.1 References (non-normative)

[KMIP-SPEC-1_0]
Key Management Interoperability Protocol Specification Version 1.0. October 2010. OASIS Standard. http://docs.oasis-open.org/kmip/spec/v1.0/os/kmip-spec-1.0-os.doc.

[KMIP-SPEC-1_1]
Key Management Interoperability Protocol Specification Version 1.1. 24 January 2013. OASIS Standard. http://docs.oasis-open.org/kmip/spec/v1.1/os/kmip-spec-v1.1-os.doc.

[KMIP-SPEC-1_2]
Key Management Interoperability Protocol Specification Version 1.2. Edited by Kiran Thota and Kelley Burgin. Latest version: http://docs.oasis-open.org/kmip/spec/v1.2/kmip-spec-v1.2.doc.

[KMIP-ENCODINGS]
KMIP Additional Message Encodings Version 1.0. Edited by Tim Hudson. Latest version: http://docs.oasis-open.org/kmip/kmip-addtl-msg-enc/v1.0/kmip-addtl-msg-enc-v1.0.doc.

2 KMIP Test Cases

The test cases define a number of request-response pairs for KMIP operations. Each test case is provided in the XML format specified in [KMIP-ENCODINGS] intended to be both human-readable and usable by automated tools. The time sequence (starting from 0) for each request-response pair is noted and line numbers are provided for ease of cross-reference for a given test sequence.

Each test case has a unique label (the section name) which includes the protocol version as part of the identifier.

Many of the test cases contained within this document depend on a specific configuration of a KMIP server to match the assumptions of the test case. Support for a test case depends on a server being configured in a manner consistent with the test case assumptions.

The test cases show one possible way to construct the messages, and the messages shown are not necessarily the only conformant constructions as many items within KMIP are optional and server behavior depends on the server's policy. Support for a test case is predicated on a server matching the test case assumptions and the behavior shown in the request-response pairs.

Where possible the flow of unique identifiers between tests, the date-time values, and other dynamic items are indicated using symbolic identifiers – in actual request and response messages these dynamic values will be filled in with valid values.

2.1 KMIP 1.0 Test Cases

2.1.1 TC-311-10 - Create / Destroy

In this test case the client issues a Create request, whereby the server creates a new symmetric key and returns the Unique Identifier. To clean up, the client then performs a Destroy operation to destroy the key.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
```

```
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T10:47:30+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T10:47:31+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.2 TC-312-10 - Register / Create / Get attributes / Destroy

Here the client first registers a template object and then creates a symmetric key using the registered template. To verify that the attributes of the key were set correctly from the template, the client then issues a Get Attributes command, after which it destroys first the key and then the template.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="Template"/>
      <TemplateAttribute>
      </TemplateAttribute>
      <Template>
        <Attribute>
          <AttributeName type="TextString" value="Object Group"/>
          <AttributeValue type="TextString" value="Group1"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Application
Specific Information"/>
          <AttributeValue>
            <ApplicationNamespace type="TextString" value="ssl"/>
            <ApplicationData type="TextString"
value="www.example.com"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Contact
Information"/>
```

```
          <AttributeValue type="TextString" value="Joe"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-Purpose"/>
          <AttributeValue type="TextString" value="demonstration"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="Template1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </Template>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T10:47:32+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Name>
          <NameValue type="TextString" value="Template1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </Name>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
```

```
Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T10:47:33+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Object Group"/>
      <AttributeName type="TextString" value="Application Specific Information"/>
      <AttributeName type="TextString" value="Contact Information"/>
      <AttributeName type="TextString" value="x-Purpose"/>
    </RequestPayload>
  </BatchItem>
```

```
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T10:47:34+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Object Group"/>
        <AttributeValue type="TextString" value="Group1"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Application Specific Information"/>
        <AttributeValue>
          <ApplicationNamespace type="TextString" value="ssl"/>
          <ApplicationData type="TextString" value="www.example.com"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Contact Information"/>
        <AttributeValue type="TextString" value="Joe"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="x-Purpose"/>
        <AttributeValue type="TextString" value="demonstration"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
```

```
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T10:47:34+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T10:47:34+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.3 TC-313-10 - Create / Locate / Get / Destroy

This test case tests the Locate and Get operations, in addition to the previously used operations Create and Destroy. A symmetric key is first created, and then a lookup is performed on the Name attribute using the Locate operation. Subsequently, a Get request is issued to retrieve the located key, after which the key on the server is destroyed.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="Key1"/>
            <NameType type="Enumeration"
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="DES3"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Length"/>
          <AttributeValue type="Integer" value="168"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Contact
Information"/>
          <AttributeValue type="TextString" value="Joe"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T10:47:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="Key1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T10:47:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T10:47:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="c8e51523f73d6ee9f40eab7cd06825499d8c0bd0739e1046"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="DES3"/>
          <CryptographicLength type="Integer" value="168"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T10:47:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Unique Identifier"/>
        <AttributeValue type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T10:47:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.4 TC-314-10 - Dual Client Test Case, ID Placeholder-linked Locate & Get Batch

This test case has two clients performing operations on the same key. The first client initially registers a template and creates a symmetric key using that template. The second client then does a batched Locate and Get using the ID Placeholder to retrieve the key. The second client thereafter performs a number of operations on the key (Get Attribute List, Get Attribute, Add Attribute, Modify Attribute and Delete Attribute), before the first client finally destroys the key and the template. The first client also tries to Get the key and the template after they have been destroyed, but the Get operation fails in both cases. This test case demonstrates the fact that it is possible for two clients to cooperate and use the same managed object while only having knowledge of a single pre-agreed Name attribute value and without having to share any other information.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="Template"/>
      <TemplateAttribute>
      </TemplateAttribute>
      <Template>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
```

```
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="Template1"/>
            <NameType type="Enumeration" 
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </Template>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Name>
          <NameValue type="TextString" value="Template1"/>
          <NameType type="Enumeration" 
value="UninterpretedTextString"/>
        </Name>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="Key1"/>
            <NameType type="Enumeration" 
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
```

```
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Contact Information"/>
          <AttributeValue type="TextString" value="Foo"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="0e9e1875336e415e"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="Key1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="cfef21dddf1cf5e3"/>
    <RequestPayload>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:28+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="0e9e1875336e415e"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="cfef21dddf1cf5e3"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="755d03c639648fb5828d5f1cc9fe9b57"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Cryptographic Length"/>
      <AttributeName type="TextString" value="Cryptographic Algorithm"/>
      <AttributeName type="TextString" value="State"/>
      <AttributeName type="TextString" value="Digest"/>
      <AttributeName type="TextString" value="Initial Date"/>
      <AttributeName type="TextString" value="Unique Identifier"/>
      <AttributeName type="TextString" value="Name"/>
      <AttributeName type="TextString" value="Lease Time"/>
      <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
      <AttributeName type="TextString" value="Object Type"/>
      <AttributeName type="TextString" value="Contact Information"/>
      <AttributeName type="TextString" value="Last Change Date"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Name"/>
      <AttributeName type="TextString" value="Contact Information"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="Key1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Contact Information"/>
        <AttributeValue type="TextString" value="Foo"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="7a92dda525eb158a"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="Value1"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="7230f6e4d3bea249"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="Value2"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:29+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="7a92dda525eb158a"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="Value1"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="7230f6e4d3bea249"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="Value2"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="ba3ea60548ecb699"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="ModifiedValue1"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="321984e716274a3d"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="ModifiedValue2"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:30+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="ba3ea60548ecb699"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="ModifiedValue1"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="321984e716274a3d"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="ModifiedValue2"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="d5c6df842daeecd8"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="x-attribute1"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="572d4f0d433dab10"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="x-attribute2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:30+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="d5c6df842daeecd8"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="ModifiedValue1"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="572d4f0d433dab10"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="ModifiedValue2"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:31+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:31+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="ItemNotFound"/>
    <ResultMessage type="TextString" value="Object does not exist"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:31+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 11
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:31+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="ItemNotFound"/>
    <ResultMessage type="TextString" value="No Cryptographic Object
found with given Unique Identifier"/>
  </BatchItem>
</ResponseMessage>
```

2.1.5 TC-315-10 - Register / Destroy Secret Data

In this test case the client issues a Register request containing a Secret Data object, whereby the server registers the object and returns the Unique Identifier. To clean up, the client then performs a Destroy operation to destroy the object.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion> <BatchCount type="Integer" value="1"/>
  </RequestHeader> <BatchItem>
    <Operation type="Enumeration"
value="Register"/> <RequestPayload>
      <ObjectType type="Enumeration" value="SecretData"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic 
Usage Mask"/>       <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
      </TemplateAttribute> <SecretData>
        <SecretDataType type="Enumeration" 
value="Password"/> <KeyBlock>
          <KeyFormatType type="Enumeration" 
value="Opaque"/> <KeyValue>
            <KeyMaterial type="ByteString" 
value="53656372657450617373776f7264"/>
          </KeyValue>
        </KeyBlock>
      </SecretData>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-15T10:41:21+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-15T10:41:21+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.6 TC-32-10 - Asynchronous Locate

This test case tests the asynchronous capabilities of KMIP using the Locate operation. A key is created and then a Locate request is sent containing the Name of the created key and with the message header Asynchronous Indicator-field set to True. If the server returns an asynchronous response to the Locate, the client then polls the server until the operation is ready. If the server responded asynchronously, a subsequent Locate operation that is also handled asynchronously is then Canceled, before the key is finally destroyed.

This test case shows the use of two clients with the same assumptions as in the test case described in Section . Since the client is unable to force the server to respond asynchronously, it is possible for a server to respond synchronously to the requests issued at times 1 and 4, in which case the expected response are the ones shown at times 2 and 5, respectively. In the case of the server not responding asynchronously to the Locate requests, the client is permitted to skip the requests illustrated at time 7 and 8.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
```

```
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="Key1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Object Group"/>
          <AttributeValue type="TextString" value="Group1"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:32+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <AsynchronousIndicator type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
```

```
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="Key1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:32+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="OperationPending"/>
    <AsynchronousCorrelationValue type="ByteString" value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Poll"/>
    <RequestPayload>
      <AsynchronousCorrelationValue type="ByteString" value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:32+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:33+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="bef01f82dfb4682a01c2a08413834aab"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <AsynchronousIndicator type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Object Group"/>
        <AttributeValue type="TextString" value="Group1"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:33+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="OperationPending"/>
    <AsynchronousCorrelationValue type="ByteString" value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Poll"/>
    <RequestPayload>
      <AsynchronousCorrelationValue type="ByteString" value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:33+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:33+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="bef01f82dfb4682a01c2a08413834aab"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <AsynchronousIndicator type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="Key1"/>
          <NameType type="Enumeration"
value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:33+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="OperationPending"/>
    <AsynchronousCorrelationValue type="ByteString"
value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Cancel"/>
    <RequestPayload>
      <AsynchronousCorrelationValue type="ByteString" value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:33+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Cancel"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <AsynchronousCorrelationValue type="ByteString" value="4d6bbfc35fe57fba"/>
      <CancellationResult type="Enumeration" value="Canceled"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:34+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.7 TC-41-10 - Revoke Scenario

This test case tests the revocation aspect of the key life cycle support in KMIP. A key is created and a Get Attribute for the State-attribute reveals that the key is in Pre-active state. The Activation Date is then set, which changes the state to Active. The key is then revoked with a revocation reason of Compromised and the state subsequently changed to Compromised, but this does not stop a client from being able to add, modify and delete attributes or even get the key (since we assume here that the out-of-band registration has been used to make the server aware of the fact that the client is capable of interpreting the attributes of the key and determining what it is allowed to do with the key). To clean up, the created key is finally destroyed.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="Key1"/>
            <NameType type="Enumeration"
```

```
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="PreActive"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Activate"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Activate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Active"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="Key1"/>
          <NameType type="Enumeration" 
value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
```

```
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="ef7833ab15f5a1ee5874bc0d9bbc4be7"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" value="KeyCompromise"/>
      </RevocationReason>
      <CompromiseOccurrenceDate type="DateTime" value="1970-01-01T00:00:06+00:00"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
```

```
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Compromised"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Cryptographic Length"/>
      <AttributeName type="TextString" value="Cryptographic Algorithm"/>
      <AttributeName type="TextString" value="State"/>
      <AttributeName type="TextString" value="Compromise Occurrence Date"/>
      <AttributeName type="TextString" value="Compromise Date"/>
      <AttributeName type="TextString" value="Digest"/>
      <AttributeName type="TextString" value="Initial Date"/>
      <AttributeName type="TextString" value="Activation Date"/>
      <AttributeName type="TextString" value="Revocation Reason"/>
      <AttributeName type="TextString" value="Unique Identifier"/>
      <AttributeName type="TextString" value="Name"/>
      <AttributeName type="TextString" value="Lease Time"/>
      <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
      <AttributeName type="TextString" value="Object Type"/>
      <AttributeName type="TextString" value="Last Change Date"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Compromised"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="9d407ffb45c95672"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="Value1"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="d62107c3158409d8"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="Value2"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:36+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="9d407ffb45c95672"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="Value1"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="d62107c3158409d8"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="Value2"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 11
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="47fb42cceca3f6ec"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="ModifiedValue1"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="08019a230a05e9e1"/>
    <RequestPayload>
```

```
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="ModifiedValue2"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:37+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="47fb42cceca3f6ec"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="ModifiedValue1"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="08019a230a05e9e1"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="ModifiedValue2"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 12
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="3e2c080fa8806057"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="x-attribute1"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="9d55988d43d23b82"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="x-attribute2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:37+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="3e2c080fa8806057"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="ModifiedValue1"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="9d55988d43d23b82"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="ModifiedValue2"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 13
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="ef7833ab15f5a1ee5874bc0d9bbc4be7"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 14
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:38+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.8 TC-51-10 - Get Usage Allocation Scenario

This test case tests the usage management functionality of KMIP. A key is created and the Activation Date and Protect Stop Date attributes are set in such a way as to allow the Get Usage Allocation operation to be performed. The value of the Usage Limits attribute is set to 1000 bytes, and two subsequent requests for 500 bytes succeed (one of them also verifying the amount that can be received using the Check operation), while a third fails since the usage allocation has been used up. The key is finally revoked and destroyed. This test case shows the use of multiple clients (Client-A, Client-B and Client-C).

```
# TIME 0
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
```

```
Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="Key1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-03-11T12:21:46+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="d7fe2477e364ae1a"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Activation Date"/>
        <AttributeValue type="DateTime" value="$NOW-3600"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="9696012991bc8a59"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Protect Stop Date"/>
        <AttributeValue type="DateTime" value="$NOW+600"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-03-11T12:21:47+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="d7fe2477e364ae1a"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Activation Date"/>
        <AttributeValue type="DateTime" value="$NOW-3600"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="9696012991bc8a59"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Protect Stop Date"/>
        <AttributeValue type="DateTime" value="$NOW+600"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
# [Client-A]
<RequestMessage>
  <RequestHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Usage Limits"/>
        <AttributeValue>
          <UsageLimitsTotal type="LongInteger" value="1000"/>
          <UsageLimitsUnit type="Enumeration" value="Byte"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-03-11T12:21:48+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Usage Limits"/>
        <AttributeValue>
          <UsageLimitsTotal type="LongInteger" value="1000"/>
          <UsageLimitsCount type="LongInteger" value="1000"/>
          <UsageLimitsUnit type="Enumeration" value="Byte"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="Key1"/>
          <NameType type="Enumeration"
value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-03-11T12:21:48+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-03-11T12:21:48+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="674b32b1a3266df1253b0f2c4440b0b0"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Check"/>
    <UniqueBatchItemID type="ByteString" value="19d4f3dc9635307a"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <UsageLimitsCount type="LongInteger" value="500"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="GetUsageAllocation"/>
    <UniqueBatchItemID type="ByteString" value="20c8dffd55bdeee8"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <UsageLimitsCount type="LongInteger" value="500"/>
    </RequestPayload>
  </BatchItem>
```

```
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-03-11T12:21:49+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Check"/>
    <UniqueBatchItemID type="ByteString" value="19d4f3dc9635307a"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="GetUsageAllocation"/>
    <UniqueBatchItemID type="ByteString" value="20c8dffd55bdeee8"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetUsageAllocation"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <UsageLimitsCount type="LongInteger" value="500"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-03-11T12:21:49+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetUsageAllocation"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
# [Client-C]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="Key1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-03-11T12:21:49+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
# [Client-C]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-03-11T12:21:49+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="674b32b1a3266df1253b0f2c4440b0b0"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
# [Client-C]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetUsageAllocation"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <UsageLimitsCount type="LongInteger" value="500"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-03-11T12:21:49+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetUsageAllocation"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="PermissionDenied"/>
    <ResultMessage type="TextString" value="Unable to allocate requested amount"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="727a212bc674b4ea"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" value="CessationOfOperation"/>
      </RevocationReason>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="1d0ebf826109b0a5"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-03-11T12:21:51+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="727a212bc674b4ea"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="1d0ebf826109b0a5"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.9 TC-61-10 - Import of a Third-party Key

This test case tests the import of a foreign key using the Register operation. To validate that the registered key is treated the same as a locally created key, an attribute is added to the key and then modified. Finally, the key is destroyed.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="0123456789abcdef0123456789abcdef"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="unknown"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="unknown"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="third party"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="third party"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2009-11-12T11:10:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.10 TC-71-10 - Unrecognized Message Extension with Criticality Indicator False

A create request is issued and the request contains a Message Extension with the Criticality Indicator set to false. The server does not understand the extension, but since it is non-critical, the create request is processed normally. Subsequently, the created key is deleted.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-71-10"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
    <MessageExtension>
      <VendorIdentification type="TextString" value="Acme"/>
      <CriticalityIndicator type="Boolean" value="false"/>
      <VendorExtension>
        <TTLV tag="0x540001" type="TextString" value="na"/>
      </VendorExtension>
    </MessageExtension>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T08:26:04+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
    </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T08:26:04+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.11 TC-72-10 - Unrecognized Message Extension with Criticality Indicator True

A create request is issued and the request contains a Message Extension with the Criticality Indicator set to true. The server does not understand the extension, and since it is critical, the create request fails and an error is returned.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-72-10"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
    <MessageExtension>
      <VendorIdentification type="TextString" value="Acme"/>
      <CriticalityIndicator type="Boolean" value="true"/>
      <VendorExtension>
        <TTLV tag="0x540001" type="TextString" value="na"/>
      </VendorExtension>
    </MessageExtension>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T08:26:05+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="FeatureNotSupported"/>
    <ResultMessage type="TextString" value="Critical Message Extension not recognized"/>
  </BatchItem>
</ResponseMessage>
```

2.1.12 TC-81-10 - Create a Key Pair

Create a new private/public key pair. Make sure they are linked correctly by issuing Locate commands with the assigned Unique Identifiers. Finally delete both key halves.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="CreateKeyPair"/>
    <RequestPayload>
      <CommonTemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="RSA"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Length"/>
          <AttributeValue type="Integer" value="1024"/>
        </Attribute>
      </CommonTemplateAttribute>
      <PrivateKeyTemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="PrivateKey1"/>
            <NameType type="Enumeration"
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
      </PrivateKeyTemplateAttribute>
      <PublicKeyTemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="PublicKey1"/>
            <NameType type="Enumeration"
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
```

```
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
      </PublicKeyTemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T08:35:06+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="CreateKeyPair"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <PrivateKeyUniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <PublicKeyUniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PublicKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T08:35:07+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PrivateKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T08:35:07+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T08:35:07+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T08:35:07+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.13 TC-82-10 - Register Both Halves of a Key Pair

Register a private key and a public key and set the Link attribute to point to each other. Verify the links were set correctly by locating the keys based on the link attributes, and then delete both objects.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_8"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="30820276020100300d06092a864886f70d0101010500048202603082025c0
2010002818100930451c9ecd94f5bb9da17dd09381bd23be43eca8c7539f301fc8a8
cd5d5274c3e7699dbdc711c97a7aa91e2c50a82bd0b1034f0df493dec16362427e58
acce7f6ce0f9bcc617bbd8c90d0094a2703ba0d09eb19d1005f2fb265526aac75af3
2f8bc782cded2a57f811e03eaf67a944de5e78413dca8f232d074e6dcea4cec9f020
30100010281800b6a7d736199ea48a420e4537ca0c7c046784dcbeaa63baebc0bc13
```

```
2787449cde8d7cad0c0c863c0fefb06c3062befc50033ecf87b4e33a9be7bcbc8f15
11ae215e80deb5d8af2bd31319d7821196640935a0cd67c94599579f2100d65e0388
31fdafb0dbe2bbdac00a696e67e756350e1c99ace11a36dabac3ed3e730960059024
100ddf672fbcc5bda3d73affc4e791e0c03390224405d69ccaabc749faa0dcd4c258
3c71dde8941a7b9aa030f52ef1451466c074d4d338fe677892acd9e10fd35bd02410
0a98fbc3ed6b4c6f860f97165ac2f7bb6f2e2cb192a9abd49795be5bcf37d8ee69a6
e169c24e5c32e4e7fa33265461407f952ba49e204818a2f785f113f922b8b0240253
f9470390d39049303777ddbc9750e9d64849ce0903eae704dc9f589b7680deb9d609
fd5bcd4decd6f120542e5cff5d76f2a43c8615fb5b3a9213463797aa9024100a1ddf
023c0cd94c019bb26d09b9e3ca8fa971cb16aa58b9baf79d6081a1dbba452ba53653
e2804ba98ff69e8bb1b3a161ea225ea501463216a8dab9b88a75e5f02406178646e1
12cf79d921a8a843f17f6e7ff974f688122365bf6690cdfc996e1890952eb3820dd1
890ec1c8619e87a2bd38f9d03b37fac742efb748c7885942c39"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="1024"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T08:49:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PrivateKeyLink"/>
            <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="X_509"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="30819f300d06092a864886f70d010101050003818d0030818902818100930
451c9ecd94f5bb9da17dd09381bd23be43eca8c7539f301fc8a8cd5d5274c3e7699d
bdc711c97a7aa91e2c50a82bd0b1034f0df493dec16362427e58acce7f6ce0f9bcc6
17bbd8c90d0094a2703ba0d09eb19d1005f2fb265526aac75af32f8bc782cded2a57
f811e03eaf67a944de5e78413dca8f232d074e6dcea4cec9f0203010001"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="1024"/>
        </KeyBlock>
      </PublicKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T08:49:38+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T08:49:38+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PublicKey"/>
      </Attribute>
      <Attribute>
```

```
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PrivateKeyLink"/>
            <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
      </RequestPayload>
    </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T08:49:38+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PrivateKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T08:49:39+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T08:49:39+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T08:49:39+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.14 TC-91-10 - Create a Key, Re-key

Create a symmetric key with a specific name, and then use Locate to find the key. After using Re-key to create a new key, verify that the name was removed from the existing key and copied to the new key. Also verify that the key material for the old key is still retrievable. To clean up, both keys are deleted.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
```

```
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="rekeyKey"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T09:07:06+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
```

```
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="rekeyKey"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T09:07:06+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T09:07:07+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="ReKey"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="rekeyKey"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T09:07:07+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Name"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T09:07:07+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T09:07:07+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="bc25617991c49d06536008d076017462"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T09:07:08+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T09:07:08+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.15 TC-92-10 - Existing Key Expired, Re-key with Same Life-cycle

Create a new symmetric key. Then add the Activation Date and Deactivation Date attributes based on the timestamp in the response to the Create request. The Activation Date is set to the current time and the Deactivation Date to a time in the near future. Repeated Get Attribute calls are performed to verify that the state is first 'Active', then subsequently 'Deactivated'. Then issue a Re-key request, including an Offset value of zero leading to the Activation Date of the replacement key to be set to the same value as the Initial Date of the replacement key. Verify from the response that the Activation Date and Deactivation Date attributes were set correctly (if they are not returned, issue a Get Attribute request). Do a Get Attribute operation to verify that the state of the new key is 'Active'. To clean up, both keys are deleted.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="rekeyKey"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T13:01:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="bac4a9cecc650259"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Activation Date"/>
        <AttributeValue type="DateTime" value="2009-02-11T13:01:59+00:00"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="582c952324f4552f"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Deactivation Date"/>
        <AttributeValue type="DateTime" value="2010-02-11T13:03:59+00:00"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T13:01:59+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="bac4a9cecc650259"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Activation Date"/>
        <AttributeValue type="DateTime" value="2009-02-11T13:01:59+00:00"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="582c952324f4552f"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Deactivation Date"/>
        <AttributeValue type="DateTime" value="2010-02-11T13:03:59+00:00"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T13:01:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Active"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T13:04:00+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Deactivated"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Offset type="Interval" value="0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T13:04:00+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Activation Date"/>
      <AttributeName type="TextString" value="Deactivation Date"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T13:04:00+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Activation Date"/>
        <AttributeValue type="DateTime" value="2009-04-17T13:01:58+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Deactivation Date"/>
        <AttributeValue type="DateTime" value="2010-04-17T13:03:58+00:00"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T13:04:00+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Active"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T13:04:00+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="7012417aa1b7394b"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_1"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" 
value="CessationOfOperation"/>
      </RevocationReason>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="3f8f4f1759704555"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
```

```
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T13:04:00+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="7012417aa1b7394b"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="3f8f4f1759704555"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.16 TC-93-10 - Existing Key Compromised, Re-key with Same Life-cycle

Create a new symmetric key with the Activation Date in the past. Do a Get Attribute operation on the State attribute to verify the key is 'Active'. Then revoke the key as compromised, verify that the state has changed to 'Compromised'. Create a replacement key using Re-key with the offset set to '0' to indicate that the times are to be copied from the existing key. Do a Get Attribute operation to verify that the state of the new key is 'Active'. To clean up, both keys are deleted.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
```

```
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Activation Date"/>
          <AttributeValue type="DateTime" value="2010-02-11T14:12:23+00:00"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="rekeyKey"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T14:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T14:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Active"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" value="KeyCompromise"/>
      </RevocationReason>
      <CompromiseOccurrenceDate type="DateTime" value="2010-02-11T14:12:24+00:00"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T14:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T14:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Compromised"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
```

```
</ResponseMessage>
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T14:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T14:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Active"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T14:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="7131695cf636735e"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" value="CessationOfOperation"/>
      </RevocationReason>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="1845bcbbf09b5a66"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T14:12:25+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="7131695cf636735e"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="1845bcbbf09b5a66"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
```

```
</ResponseMessage>
```

2.1.17 TC-94-10 - Create Key, Re-key with New Life-cycle

Create a symmetric key with a specific name, then use Locate to find the key. After using Re-key to create a new key, verify that the name was removed from the existing key and copied to the new key. To clean up, both keys are deleted.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="rekeyKey"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T15:38:29+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="rekeyKey"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T15:38:30+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
```

```
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Activation Date"/>
          <AttributeValue type="DateTime" value="2006-01-01T11:00:00+00:00"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Process Start Date"/>
          <AttributeValue type="DateTime" value="2006-01-01T11:00:00+00:00"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Protect Stop Date"/>
          <AttributeValue type="DateTime" value="2020-01-01T11:00:00+00:00"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Deactivation Date"/>
          <AttributeValue type="DateTime" value="2020-01-01T11:00:00+00:00"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T15:38:31+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
```

```
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Name"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T15:38:31+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Activation Date"/>
      <AttributeName type="TextString" value="Process Start Date"/>
      <AttributeName type="TextString" value="Protect Stop Date"/>
      <AttributeName type="TextString" value="Deactivation Date"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T15:38:31+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Activation Date"/>
        <AttributeValue type="DateTime" value="2006-01-01T11:00:00+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Process Start Date"/>
        <AttributeValue type="DateTime" value="2006-01-01T11:00:00+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Protect Stop Date"/>
        <AttributeValue type="DateTime" value="2020-01-01T11:00:00+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Deactivation Date"/>
        <AttributeValue type="DateTime" value="2020-01-01T11:00:00+00:00"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="rekeyKey"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T15:38:31+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T15:38:32+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="3dc816bb39869d07"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration"
value="CessationOfOperation"/>
      </RevocationReason>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="32b517312fd5b558"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T15:38:32+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="3dc816bb39869d07"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="32b517312fd5b558"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.18 TC-95-10 - Obtain Lease for Expired Key

Create a symmetric key with a specific name and obtain a lease. Revoke the key with state 'Compromised' and re-key the key. Try to obtain a lease on the old key which fails due to a server policy which does not allow giving out leases for compromised keys. Locate the new key with the original name. Get the new key and obtain a lease.

```
# TIME 0
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic 
Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic 
Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic 
Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="rekeyKey"/>
            <NameType type="Enumeration" 
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Activation Date"/>
          <AttributeValue type="DateTime" value="2010-02-11T15:45:48+00:00"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T15:45:49+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T15:45:49+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="f43c7798aacb22b1411a8773c199708b"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ObtainLease"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T15:45:50+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ObtainLease"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <LeaseTime type="Interval" value="16"/>
      <LastChangeDate type="DateTime" value="2010-02-11T15:45:49+00:00"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" value="KeyCompromise"/>
      </RevocationReason>
      <CompromiseOccurrenceDate type="DateTime" value="2010-02-11T15:45:50+00:00"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T15:45:50+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T15:45:51+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ObtainLease"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T15:45:51+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ObtainLease"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="PermissionDenied"/>
    <ResultMessage type="TextString" value="CO is in state
Compromised, no lease given"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="rekeyKey"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T15:45:51+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T15:45:51+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="173e9499f7c573712afb9883b5df2bce"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ObtainLease"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T15:45:51+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ObtainLease"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <LeaseTime type="Interval" value="0"/>
      <LastChangeDate type="DateTime" value="2010-02-11T15:45:51+00:00"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T15:45:51+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
# [Client-A]
<RequestMessage>
  <RequestHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="3748b9e243205ba7"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" value="CessationOfOperation"/>
      </RevocationReason>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="04eaf416d0beb50d"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-11T15:45:51+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="3748b9e243205ba7"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="04eaf416d0beb50d"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.19 TC-101-10 - Create a Key, Archive and Recover it

Create a symmetric key with a specified name, then use Locate to find the key and get the key. Archive the key (asynchronous operation, use Poll until it completes) and use Get and Locate on it, but both fail. Add the Storage Status Mask to the Locate-command, indicating to the server to search in both online and archived storage. The Locate finds the key. Recover the key from the archive (also asynchronous), both Locate and Get succeed.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="archiveKey"/>
            <NameType type="Enumeration"
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-12T09:30:11+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="archiveKey"/>
          <NameType type="Enumeration"
value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-12T09:30:14+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
```

```
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-12T09:30:15+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="c3200b1291ba648db9089ded3073de74"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <AsynchronousIndicator type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Archive"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-12T09:30:15+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Archive"/>
    <ResultStatus type="Enumeration" value="OperationPending"/>
    <AsynchronousCorrelationValue type="ByteString" value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Poll"/>
    <RequestPayload>
      <AsynchronousCorrelationValue type="ByteString" value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-12T09:30:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Archive"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-12T09:30:20+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="ObjectArchived"/>
    <ResultMessage type="TextString" value="Object is archived"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Archive Date"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-12T09:30:20+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Archive Date"/>
        <AttributeValue type="DateTime" value="2010-02-12T09:30:18+00:00"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="archiveKey"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-12T09:30:20+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <StorageStatusMask type="Integer" value="ArchivalStorage
OnLineStorage"/>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="archiveKey"/>
          <NameType type="Enumeration"
value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-12T09:30:20+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <AsynchronousIndicator type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Recover"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-12T09:30:20+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Recover"/>
    <ResultStatus type="Enumeration" value="OperationPending"/>
    <AsynchronousCorrelationValue type="ByteString"
value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
  </BatchItem>
</ResponseMessage>
# TIME 10
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Poll"/>
    <RequestPayload>
      <AsynchronousCorrelationValue type="ByteString"
value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-12T09:30:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Recover"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 11
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-12T09:30:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="c3200b1291ba648db9089ded3073de74"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 12
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-12T09:30:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.20 TC-111-10 - Credential, Operation Policy, Destroy Date

Pass a Credential object of type Username and Password in the message header in all requests for identification purposes (how the Credential object is used is defined in [KMIP-Spec]). Create a symmetric key and set the Operation Policy Name attribute to 'default'. Using another Username and Password Credential, attempt to perform a Get operation batched with a Get Attribute List on the created symmetric key - according to the Default Operation Policy, both these request SHALL fail, and with the Batch Error Continuation Option set to 'Continue', the client SHALL also receive both response payloads. Using the initially used Credential, destroy the object and get the Destroy Date attribute. The message exchanges in this test case are based on a certain server policy (e.g. handling of Credentials) that in some aspects differs from the policy assumed in earlier test cases (e.g. in this test case, the Destroy Date is retained). The message exchanges shown in this test case assume that both Credentials used in this example are for valid users of the server.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration" 
value="UsernameAndPassword"/>
        <CredentialValue>
          <Username type="TextString" value="Fred"/>
          <Password type="TextString" value="password1"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic 
Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic 
Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic 
Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="PolicyKey"/>
            <NameType type="Enumeration" 
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Operation Policy 
Name"/>
          <AttributeValue type="TextString" value="default"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Parameters"/>
          <AttributeValue>
            <BlockCipherMode type="Enumeration" value="CBC"/>
            <PaddingMethod type="Enumeration" value="PKCS5"/>
            <HashingAlgorithm type="Enumeration" value="SHA_1"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-03-16T13:44:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration" value="UsernameAndPassword"/>
        <CredentialValue>
          <Username type="TextString" value="Fred"/>
          <Password type="TextString" value="password1"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <UniqueBatchItemID type="ByteString" value="4cbb6751574c4da8"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Operation Policy Name"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="0ea05ee703da997b"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-03-16T13:44:44+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <UniqueBatchItemID type="ByteString" value="4cbb6751574c4da8"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Operation Policy Name"/>
        <AttributeValue type="TextString" value="default"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="0ea05ee703da997b"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="c520fca4e681f7bffb3523d71427d594"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
```

```
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration" value="UsernameAndPassword"/>
        <CredentialValue>
          <Username type="TextString" value="Barney"/>
          <Password type="TextString" value="secret2"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchErrorContinuationOption type="Enumeration" value="Continue"/>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="e3e72d5a352687d8"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <UniqueBatchItemID type="ByteString" value="a9a1d60b0c62ecaf"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-03-16T13:44:45+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="e3e72d5a352687d8"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="PermissionDenied"/>
    <ResultMessage type="TextString" value="Access denied"/>
  </BatchItem>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="GetAttributeList"/>
    <UniqueBatchItemID type="ByteString" value="a9a1d60b0c62ecaf"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="PermissionDenied"/>
    <ResultMessage type="TextString" value="Access denied"/>
  </BatchItem>
</ResponseMessage>
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration" value="UsernameAndPassword"/>
        <CredentialValue>
          <Username type="TextString" value="Fred"/>
          <Password type="TextString" value="password1"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-03-16T13:44:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration"
value="UsernameAndPassword"/>
        <CredentialValue>
          <Username type="TextString" value="Fred"/>
          <Password type="TextString" value="password1"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Destroy Date"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-03-16T13:44:46+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Destroy Date"/>
        <AttributeValue type="DateTime" value="2010-03-
16T13:44:45+00:00"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.21 TC-121-10 - Query, Maximum Response Size

Perform a Query operation, querying the Operations and Objects supported by the server, with a restriction on the Maximum Response Size set in the request header. Since the resulting Query response is too big, an error is returned. Increase the Maximum Response Size, resubmit the Query request, and get a successful response.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <MaximumResponseSize type="Integer" value="256"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Query"/>
    <RequestPayload>
      <QueryFunction type="Enumeration" value="QueryOperations"/>
      <QueryFunction type="Enumeration" value="QueryObjects"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-15T09:49:30+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Query"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="ResponseTooLarge"/>
    <ResultMessage type="TextString" value="Response size: 568, Maximum Response Size indicated in request: 256"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <MaximumResponseSize type="Integer" value="2048"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Query"/>
    <RequestPayload>
      <QueryFunction type="Enumeration" value="QueryOperations"/>
      <QueryFunction type="Enumeration" value="QueryObjects"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2010-02-15T09:49:30+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Query"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <Operation type="Enumeration" value="Create"/>
      <Operation type="Enumeration" value="CreateKeyPair"/>
      <Operation type="Enumeration" value="Register"/>
      <Operation type="Enumeration" value="ReKey"/>
      <Operation type="Enumeration" value="Locate"/>
      <Operation type="Enumeration" value="Check"/>
      <Operation type="Enumeration" value="Get"/>
      <Operation type="Enumeration" value="GetAttributes"/>
      <Operation type="Enumeration" value="GetAttributeList"/>
      <Operation type="Enumeration" value="AddAttribute"/>
      <Operation type="Enumeration" value="ModifyAttribute"/>
      <Operation type="Enumeration" value="DeleteAttribute"/>
      <Operation type="Enumeration" value="ObtainLease"/>
      <Operation type="Enumeration" value="GetUsageAllocation"/>
      <Operation type="Enumeration" value="Activate"/>
      <Operation type="Enumeration" value="Revoke"/>
      <Operation type="Enumeration" value="Destroy"/>
      <Operation type="Enumeration" value="Archive"/>
      <Operation type="Enumeration" value="Recover"/>
      <Operation type="Enumeration" value="Query"/>
      <Operation type="Enumeration" value="Cancel"/>
      <Operation type="Enumeration" value="Poll"/>
      <ObjectType type="Enumeration" value="Certificate"/>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <ObjectType type="Enumeration" value="Template"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.22 TC-131-10 - Register an Asymmetric Key Pair in PKCS1 Format

Register a private key in the PKCS_1 key format, then register the corresponding public key, also in PKCS_1 format, with the Link attribute pointing to the previously registered private key. Thereafter add the Link attribute to the private key, and perform Locate operations to find the public and private keys using the Link attribute. Get both the private and public keys in PKCS_1 key format, then destroy both the private and the public key.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-131-10-
prikey1"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="308204a50201000282010100ab7f161c0042496ccd6c6d4dadb9199734353
57776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d746483
46d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa
2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b650
89f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c
795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f
91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c281
5c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050
203010001028201003b12455d53c1816516c518493f6398aafa72b17dfa894db888a
7d48c0a47f62579a4e644f86da711fec850cdd9dbbd17f69a443d2ec1dd60d3c618f
a74cde5fdafabd6baa26eb0a3adb4def6480fb1218cd3b083e252e885b6f0729f98b
2144d2b72293e1b11d73393bc41f75b15ee3d7569b4995ed1a14425da4319b7b26b0
e8fef17c37542ae5c6d5849f87209567f3925a47b016d564859717bc57fcb4522d0a
a49ce816e5be7b3088193236ec9efff140858045b73c5d79baf38f7c67f04c5dcf0e
3806ad982d1259058c3473e847179a878f2c6b3bd968fb99ea46e9185892f3676e78
965c2aed4877ba3917df07c5e927474f19e764ba61dc38d63bf2902818100d5c69c8
c3cdc2464744a793713dafb9f1dbc799ff96423fecd3cba794286bce920f4b5c183f
99ee9028db6212c6277c4c8297fcfbce7f7c24ca4c51fc7182fb8f4019fb1d565967
4c5cbe6d5fa992051341760cd00735729a070a9e54d342beba8ef47ee82d3a01b04c
ec4a00d4ddb41e35116fc221e854b43a696c0e6419b1b02818100cd5ea7702789064
b673540cbff09356ad80bc3d592812eba47610b9fac6aecefe22acae438459cda74e
59653d88c04189d34399bf5b14b920e34ef38a7d09fe69593396e8fe735e6f0a6ae4
990401041d8a406b6fd86a1161e45f95a3eaa5c1012e6662e44f15f335ac971e1766
b2bb9c985109974141b44d37e1e319820a55f02818100b2871237bf9fad38c3316ab
7877a6a868063e542a7186d431e8d27c19ac0414584033942e9ff6e2973bb7b2d8b0
e94ad1ee82158108fbc8664517a5a467fb963014bd5dcc2b4fb087c23039d11920db
e22fd9f16b4d89e23225cd455adbaf32ef43f185864a36d630309d6853f7714b39aa
e1ebee3938f87c2707e178c739f9f028181009690bed14b2afaa26d986d592231ee2
7d71d49065bd2ba1f78157e20229881fd9d23227d0f8479eaefa922fd75d5b16b1a5
61fa6680b040ca0bdce650b23b917a4b1bb7983a74fad70e1c305cbec2bff1a85a72
6a1d90260e4f1084f518234dcd3fe770b9520215bd543bb6a4117718754676a34171
666a79f26e79c149c5aa102818100a0c985a0a0a791a659f99731134c44f37b2e520
```

```
a2cea35800ad27241ed360dfde6e8ca614f12047fd08b76ac4d13c056a0699e2f98a
1cac91011294d71208f4abab33ba87aa0517f415baca88d6bac006088fa601d34941
7e1f0c9b23affa4d496618dbc024986ed690bbb7b025768ff9df8ac15416f489f812
9c32341a8b44f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PrivateKeyLink"/>
            <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-131-10-
pubkey1"/>
        </Attribute>
      </TemplateAttribute>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3082010a0282010100ab7f161c0042496ccd6c6d4dadb9199734353577760
03acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b
8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89
b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f981
35b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328
abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013
da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612
a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010
001"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PublicKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PublicKey"/>
      </Attribute>
      <Attribute>
```

```
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PrivateKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <KeyFormatType type="Enumeration" value="PKCS_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="308204a50201000282010100ab7f161c0042496ccd6c6d4dadb9199734353
```

```
57776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d746483
46d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa
2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b650
89f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c
795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f
91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c281
5c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050
203010001028201003b12455d53c1816516c518493f6398aafa72b17dfa894db888a
7d48c0a47f62579a4e644f86da711fec850cdd9dbbd17f69a443d2ec1dd60d3c618f
a74cde5fdafabd6baa26eb0a3adb4def6480fb1218cd3b083e252e885b6f0729f98b
2144d2b72293e1b11d73393bc41f75b15ee3d7569b4995ed1a14425da4319b7b26b0
e8fef17c37542ae5c6d5849f87209567f3925a47b016d564859717bc57fcb4522d0a
a49ce816e5be7b3088193236ec9efff140858045b73c5d79baf38f7c67f04c5dcf0e
3806ad982d1259058c3473e847179a878f2c6b3bd968fb99ea46e9185892f3676e78
965c2aed4877ba3917df07c5e927474f19e764ba61dc38d63bf2902818100d5c69c8
c3cdc2464744a793713dafb9f1dbc799ff96423fecd3cba794286bce920f4b5c183f
99ee9028db6212c6277c4c8297fcfbce7f7c24ca4c51fc7182fb8f4019fb1d565967
4c5cbe6d5fa992051341760cd00735729a070a9e54d342beba8ef47ee82d3a01b04c
ec4a00d4ddb41e35116fc221e854b43a696c0e6419b1b02818100cd5ea7702789064
b673540cbff09356ad80bc3d592812eba47610b9fac6aecefe22acae438459cda74e
59653d88c04189d34399bf5b14b920e34ef38a7d09fe69593396e8fe735e6f0a6ae4
990401041d8a406b6fd86a1161e45f95a3eaa5c1012e6662e44f15f335ac971e1766
b2bb9c985109974141b44d37e1e319820a55f02818100b2871237bf9fad38c3316ab
7877a6a868063e542a7186d431e8d27c19ac0414584033942e9ff6e2973bb7b2d8b0
e94ad1ee82158108fbc8664517a5a467fb963014bd5dcc2b4fb087c23039d11920db
e22fd9f16b4d89e23225cd455adbaf32ef43f185864a36d630309d6853f7714b39aa
e1ebee3938f87c2707e178c739f9f028181009690bed14b2afaa26d986d592231ee2
7d71d49065bd2ba1f78157e20229881fd9d23227d0f8479eaefa922fd75d5b16b1a5
61fa6680b040ca0bdce650b23b917a4b1bb7983a74fad70e1c305cbec2bff1a85a72
6a1d90260e4f1084f518234dcd3fe770b9520215bd543bb6a41177187546 76a34171
666a79f26e79c149c5aa102818100a0c985a0a0a791a659f99731134c44f37b2e520
a2cea35800ad27241ed360dfde6e8ca614f12047fd08b76ac4d13c056a0699e2f98a
1cac91011294d71208f4abab33ba87aa0517f415baca88d6bac006088fa601d34941
7e1f0c9b23affa4d496618dbc024986ed690bbb7b025768ff9df8ac15416f489f812
9c32341a8b44f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PrivateKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
```

```
      <KeyFormatType type="Enumeration" value="PKCS_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3082010a0282010100ab7f161c0042496ccd6c6d4dadb919973435357776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010001"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PublicKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.23 TC-132-10 - Register an Asymmetric Key Pair and a Corresponding X509 Certificate

Register a public/private key pair in the PKCS_1 key format and a corresponding X509 certificate. Add the appropriate links between the registered objects. Make sure the certificate was registered and the attributes set correctly by listing and retrieving the attributes. Get the keys and certificate, and finally destroy all the registered objects.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-132-10-
pubkey1"/>
        </Attribute>
      </TemplateAttribute>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3082010a0282010100ab7f161c0042496ccd6c6d4dadb9199734353577760
03acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b
8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89
b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f981
35b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328
abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013
da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612
a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010
001"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PublicKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PublicKeyLink"/>
            <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-132-10-prikey1"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="308204a502010002820100ab7f161c0042496ccd6c6d4dadb9199734353
```

```
57776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d746483
46d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa
2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b650
89f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c
795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f
91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c281
5c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050
203010001028201003b12455d53c1816516c518493f6398aafa72b17dfa894db888a
7d48c0a47f62579a4e644f86da711fec850cdd9dbbd17f69a443d2ec1dd60d3c618f
a74cde5fdafabd6baa26eb0a3adb4def6480fb1218cd3b083e252e885b6f0729f98b
2144d2b72293e1b11d73393bc41f75b15ee3d7569b4995ed1a14425da4319b7b26b0
e8fef17c37542ae5c6d5849f87209567f3925a47b016d564859717bc57fcb4522d0a
a49ce816e5be7b3088193236ec9efff140858045b73c5d79baf38f7c67f04c5dcf0e
3806ad982d1259058c3473e847179a878f2c6b3bd968fb99ea46e9185892f3676e78
965c2aed4877ba3917df07c5e927474f19e764ba61dc38d63bf2902818100d5c69c8
c3cdc2464744a793713dafb9f1dbc799ff96423fecd3cba794286bce920f4b5c183f
99ee9028db6212c6277c4c8297fcfbce7f7c24ca4c51fc7182fb8f4019fb1d565967
4c5cbe6d5fa992051341760cd00735729a070a9e54d342beba8ef47ee82d3a01b04c
ec4a00d4ddb41e35116fc221e854b43a696c0e6419b1b02818100cd5ea7702789064
b673540cbff09356ad80bc3d592812eba47610b9fac6aecefe22acae438459cda74e
59653d88c04189d34399bf5b14b920e34ef38a7d09fe69593396e8fe735e6f0a6ae4
990401041d8a406b6fd86a1161e45f95a3eaa5c1012e6662e44f15f335ac971e1766
b2bb9c985109974141b44d37e1e319820a55f02818100b2871237bf9fad38c3316ab
7877a6a868063e542a7186d431e8d27c19ac0414584033942e9ff6e2973bb7b2d8b0
e94ad1ee82158108fbc8664517a5a467fb963014bd5dcc2b4fb087c23039d11920db
e22fd9f16b4d89e23225cd455adbaf32ef43f185864a36d630309d6853f7714b39aa
e1ebee3938f87c2707e178c739f9f028181009690bed14b2afaa26d986d592231ee2
7d71d49065bd2ba1f78157e20229881fd9d23227d0f8479eaefa922fd75d5b16b1a5
61fa6680b040ca0bdce650b23b917a4b1bb7983a74fad70e1c305cbec2bff1a85a72
6a1d90260e4f1084f518234dcd3fe770b9520215bd543bb6a4117718754676a34171
666a79f26e79c149c5aa102818100a0c985a0a0a791a659f99731134c44f37b2e520
a2cea35800ad27241ed360dfde6e8ca614f12047fd08b76ac4d13c056a0699e2f98a
1cac91011294d71208f4abab33ba87aa0517f415baca88d6bac006088fa601d34941
7e1f0c9b23affa4d496618dbc024986ed690bbb7b025768ff9df8ac15416f489f812
9c32341a8b44f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="Certificate"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Verify Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PublicKeyLink"/>
            <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-132-10-
cert1"/>
        </Attribute>
      </TemplateAttribute>
      <Certificate>
        <CertificateType type="Enumeration" value="X_509"/>
        <CertificateValue type="ByteString"
value="30820312308201faa003020102020101300d06092a864886f70d010105050
0303b310b3009060355040613025553310d300b060355040a130454455354310e300
c060355040b13054f41534953310d300b060355040313044b4d4950301e170d31303
1313031323335393595a170d3230313130313233353935395a303b310b300906035
504061302555331 0d300b060355040a130454455354310e300c060355040b13054f4
1534953310d300b060355040313044b4d495030820122300d06092a864886f70d010
10105000382010f003082010a0282010100ab7f161c0042496ccd6c6d4dadb919973
435357776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74
648346d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc62
67fa2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8
b65089f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295
353c795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142c
b76f91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1
c2815c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f
605020301000 1a321301f301d0603551d0e0416041404e57bd2c431b2e816e180a19
823fac858273f6b300d06092a864886f70d01010505000382010100a876adbc6c8e0
ff017216e195fea76bff61a567c9a13dc50d13fec12a4273c441547cfabcb5d61d99
```

```
1e966319df72c0d41ba826a45112ff26089a2344f4d71cf7c921b4bdfaef1600d1ba
aa15336057e014b8b496d4fae9e8a6c1da9aeb6cbc960cbf2fae77f587ec4bb28204
5338845b88dd9aeea53e482a36e734e4f5f03b9d0dfc4cafc6bb34ea9053e52bd609
ee01e86d9b09fb51120c19834a997b09ce08d79e81311762f974bb1c8c09186c4d78
933e0db38e905084877e147c78af52fae07192ff166d19fa94a11cc11b27ed050f7a
27fae13b205a574c4ee00aa8bd65d0d7057c985c839ef336a441ed53a53c6b6b696f
1bdeb5f7ea811ebb25a7f86"/>
      </Certificate>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="31f81bfb0f0492bd"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="ba865701c7837be2"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="CertificateLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="31f81bfb0f0492bd"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="ba865701c7837be2"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="CertificateLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="Cryptographic Length"/>
      <AttributeName type="TextString" value="Certificate Issuer"/>
      <AttributeName type="TextString" value="Certificate Type"/>
      <AttributeName type="TextString" value="Certificate Subject"/>
      <AttributeName type="TextString" value="Certificate Identifier"/>
      <AttributeName type="TextString" value="State"/>
      <AttributeName type="TextString" value="Digest"/>
      <AttributeName type="TextString" value="Link"/>
      <AttributeName type="TextString" value="Lease Time"/>
      <AttributeName type="TextString" value="Initial Date"/>
      <AttributeName type="TextString" value="Unique Identifier"/>
      <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
      <AttributeName type="TextString" value="Object Type"/>
      <AttributeName type="TextString" value="Last Change Date"/>
      <AttributeName type="TextString" value="x-ID"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="Certificate Identifier"/>
      <AttributeName type="TextString" value="Certificate Issuer"/>
      <AttributeName type="TextString" value="Certificate Subject"/>
      <AttributeName type="TextString" value="Certificate Type"/>
      <AttributeName type="TextString" value="Cryptographic Length"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Identifier"/>
        <AttributeValue>
          <Issuer type="TextString" value="CN=KMIP,OU=OASIS,O=TEST,C=US"/>
          <SerialNumber type="TextString" value="1"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Issuer"/>
        <AttributeValue>
          <CertificateIssuerDistinguishedName type="TextString" value="CN=KMIP,OU=OASIS,O=TEST,C=US"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate
```

```
Subject"/>
        <AttributeValue>
          <CertificateSubjectDistinguishedName type="TextString" value="CN=KMIP,OU=OASIS,O=TEST,C=US"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Type"/>
        <AttributeValue type="Enumeration" value="X_509"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Length"/>
        <AttributeValue type="Integer" value="2048"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <KeyFormatType type="Enumeration" value="PKCS_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
```

```
value="308204a50201000282010100ab7f161c0042496ccd6c6d4dadb9199734353
57776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d746483
46d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa
2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b650
89f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c
795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f
91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c281
5c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050
203010001028201003b12455d53c1816516c518493f6398aafa72b17dfa894db888a
7d48c0a47f62579a4e644f86da711fec850cdd9dbbd17f69a443d2ec1dd60d3c618f
a74cde5fdafabd6baa26eb0a3adb4def6480fb1218cd3b083e252e885b6f0729f98b
2144d2b72293e1b11d73393bc41f75b15ee3d7569b4995ed1a14425da4319b7b26b0
e8fef17c37542ae5c6d5849f87209567f3925a47b016d564859717bc57fcb4522d0a
a49ce816e5be7b3088193236ec9efff140858045b73c5d79baf38f7c67f04c5dcf0e
3806ad982d1259058c3473e847179a878f2c6b3bd968fb99ea46e9185892f3676e78
965c2aed4877ba3917df07c5e927474f19e764ba61dc38d63bf2902818100d5c69c8
c3cdc2464744a793713dafb9f1dbc799ff96423fecd3cba794286bce920f4b5c183f
99ee9028db6212c6277c4c8297fcfbce7f7c24ca4c51fc7182fb8f4019fb1d565967
4c5cbe6d5fa992051341760cd00735729a070a9e54d342beba8ef47ee82d3a01b04c
ec4a00d4ddb41e35116fc221e854b43a696c0e6419b1b02818100cd5ea7702789064
b673540cbff09356ad80bc3d592812eba47610b9fac6aecefe22acae438459cda74e
59653d88c04189d34399bf5b14b920e34ef38a7d09fe69593396e8fe735e6f0a6ae4
990401041d8a406b6fd86a1161e45f95a3eaa5c1012e6662e44f15f335ac971e1766
b2bb9c985109974141b44d37e1e319820a55f02818100b2871237bf9fad38c3316ab
7877a6a868063e542a7186d431e8d27c19ac0414584033942e9ff6e2973bb7b2d8b0
e94ad1ee82158108fbc8664517a5a467fb963014bd5dcc2b4fb087c23039d11920db
e22fd9f16b4d89e23225cd455adbaf32ef43f185864a36d630309d6853f7714b39aa
e1ebee3938f87c2707e178c739f9f028181009690bed14b2afaa26d986d592231ee2
7d71d49065bd2ba1f78157e20229881fd9d23227d0f8479eaefa922fd75d5b16b1a5
61fa6680b040ca0bdce650b23b917a4b1bb7983a74fad70e1c305cbec2bff1a85a72
6a1d90260e4f1084f518234dcd3fe770b9520215bd543bb6a4117718754676a34171
666a79f26e79c149c5aa102818100a0c985a0a0a791a659f99731134c44f37b2e520
a2cea35800ad27241ed360dfde6e8ca614f12047fd08b76ac4d13c056a0699e2f98a
1cac91011294d71208f4abab33ba87aa0517f415baca88d6bac006088fa601d34941
7e1f0c9b23affa4d496618dbc024986ed690bbb7b025768ff9df8ac15416f489f812
9c32341a8b44f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PrivateKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_0"/>
      <KeyFormatType type="Enumeration" value="PKCS_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3082010a0282010100ab7f161c0042496ccd6c6d4dadb919973435357776O
03acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b
8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89
b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f981
35b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328
abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013
da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612
a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010
001"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PublicKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
```

```
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="Certificate"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
      <Certificate>
        <CertificateType type="Enumeration" value="X_509"/>
        <CertificateValue type="ByteString"
value="30820312308201faa003020102020101300d06092a864886f70d010105050
0303b310b3009060355040613025553310d300b060355040a130454455354310e300
c060355040b13054f41534953310d300b060355040313044b4d4950301e170d31303
131303132333539395a170d3230313130313233353939395a303b310b300906035
5040613025553310d300b060355040a130454455354310e300c060355040b13054f4
1534953310d300b060355040313044b4d495030820122300d06092a864886f70d010
10105000382010f003082010a0282010100ab7f161c0042496ccd6c6d4dadb919973
435357776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74
648346d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc62
67fa2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8
b65089f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295
353c795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142c
b76f91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1
c2815c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f
6050203010001a321301f301d0603551d0e0416041404e57bd2c431b2e816e180a19
823fac858273f6b300d06092a864886f70d01010505000382010100a876adbc6c8e0
ff017216e195fea76bff61a567c9a13dc50d13fec12a4273c441547cfabcb5d61d99
1e966319df72c0d41ba826a45112ff26089a2344f4d71cf7c921b4bdfaef1600d1ba
aa15336057e014b8b496d4fae9e8a6c1da9aeb6cbc960cbf2fae77f587ec4bb28204
5338845b88dd9aeea53e482a36e734e4f5f03b9d0dfc4cafc6bb34ea9053e52bd609
ee01e86d9b09fb51120c19834a997b09ce08d79e81311762f974bb1c8c09186c4d78
933e0db38e905084877e147c78af52fae07192ff166d19fa94a11cc11b27ed050f7a
27fae13b205a574c4ee00aa8bd65d0d7057c985c839ef336a441ed53a53c6b6b696f
1bdeb5f7ea811ebb25a7f86"/>
      </Certificate>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 11
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.24 TC-134-10 - Register Key Pair, Certify and Re-certify Public Key

Register a public/private key pair on the server. Request the server to have a certificate created using the Certify operation. Retrieve the certificate and its attributes, then execute the Re-certify operation to re-certify the public key. Finally, destroy all the objects.

The new KMIP 1.1 certificate DN attributes are retrieved as are the original (deprecated) KMIP 1.0 certificate DN attributes.

```
# TIME 0
<RequestMessage>
```

```
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-134-10-
pubkey1"/>
        </Attribute>
      </TemplateAttribute>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3082010a0282010100ab7f161c0042496ccd6c6d4dadb919973435357776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010001"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PublicKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PublicKeyLink"/>
            <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-134-10-prikey1"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="308204a50201000282010100ab7f161c0042496ccd6c6d4dadb9199734353
57776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d746483
46d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa
2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b650
89f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c
795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f
91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c281
5c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050
203010001028201003b12455d53c1816516c518493f6398aafa72b17dfa894db888a
7d48c0a47f62579a4e644f86da711fec850cdd9dbbd17f69a443d2ec1dd60d3c618f
a74cde5fdafabd6baa26eb0a3adb4def6480fb1218cd3b083e252e885b6f0729f98b
2144d2b72293e1b11d73393bc41f75b15ee3d7569b4995ed1a14425da4319b7b26b0
e8fef17c37542ae5c6d5849f87209567f3925a47b016d564859717bc57fcb4522d0a
```

```
a49ce816e5be7b3088193236ec9efff140858045b73c5d79baf38f7c67f04c5dcf0e
3806ad982d1259058c3473e847179a878f2c6b3bd968fb99ea46e9185892f3676e78
965c2aed4877ba3917df07c5e927474f19e764ba61dc38d63bf2902818100d5c69c8
c3cdc2464744a793713dafb9f1dbc799ff96423fecd3cba794286bce920f4b5c183f
99ee9028db6212c6277c4c8297fcfbce7f7c24ca4c51fc7182fb8f4019fb1d565967
4c5cbe6d5fa992051341760cd00735729a070a9e54d342beba8ef47ee82d3a01b04c
ec4a00d4ddb41e35116fc221e854b43a696c0e6419b1b02818100cd5ea7702789064
b673540cbff09356ad80bc3d592812eba47610b9fac6aecefe22acae438459cda74e
59653d88c04189d34399bf5b14b920e34ef38a7d09fe69593396e8fe735e6f0a6ae4
990401041d8a406b6fd86a1161e45f95a3eaa5c1012e6662e44f15f335ac971e1766
b2bb9c985109974141b44d37e1e319820a55f02818100b2871237bf9fad38c3316ab
7877a6a868063e542a7186d431e8d27c19ac0414584033942e9ff6e2973bb7b2d8b0
e94ad1ee82158108fbc8664517a5a467fb963014bd5dcc2b4fb087c23039d11920db
e22fd9f16b4d89e23225cd455adbaf32ef43f185864a36d630309d6853f7714b39aa
e1ebee3938f87c2707e178c739f9f028181009690bed14b2afaa26d986d592231ee2
7d71d49065bd2ba1f78157e20229881fd9d23227d0f8479eaefa922fd75d5b16b1a5
61fa6680b040ca0bdce650b23b917a4b1bb7983a74fad70e1c305cbec2bff1a85a72
6a1d90260e4f1084f518234dcd3fe770b9520215bd543bb6a4117718754676a34171
666a79f26e79c149c5aa102818100a0c985a0a0a791a659f99731134c44f37b2e520
a2cea35800ad27241ed360dfde6e8ca614f12047fd08b76ac4d13c056a0699e2f98a
1cac91011294d71208f4abab33ba87aa0517f415baca88d6bac006088fa601d34941
7e1f0c9b23affa4d496618dbc024986ed690bbb7b025768ff9df8ac15416f489f812
9c32341a8b44f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Certify"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <CertificateRequestType type="Enumeration" value="PKCS_10"/>
      <CertificateRequest type="ByteString" 
value="3082028130820169020100303c310b3009060355040613025553310d300b0
60355040a130441434d45310d300b060355040b13044b4d4950310f300d060355040
31306436c69656e743082012230d06092a864886f70d01010105000382010f00308
2010a0282010100ab7f161c0042496ccd6c6d4dadb919973435357776003acf54b7a
f1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b8d71812b20
5387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89b9bee9e60a
1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f98135b1c67b70
1675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328abf70e1b42
e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013da809e9c1b
7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612a29a82d73a
1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010001a000300
d06092a864886f70d0101050500038201010002d90f5492c3df1771df4e87e1087cb9
52197319a9696e2d588efda580d8d3304427b997cd921ad7c674aea413fba85fd61e
6a481de9ab2e8a4ff43c02655015d3437f783fe0c781519cd08ffd3c007c7fade963
2fe5659e2cac35bd6aaf3e13dc18097d996df01b66fc5e26ca109380863a209125cc
0fd79533f327fa1cad444d89d3ff81b92a91428c469c846090fd1324846e12d01671
962c332a7826152daaf486cc867185c2e27caf2f009898db07fe4b45c518192aa493
d8f8c0198db67f90672ab6de05a08032941377f473d80716d85adc6182003ab34942
302214eb3895f15403f2616adfd6bb5e6aa47fa38c9dfc73f4de80ddb91bdb04d21c
82ba6"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic 
Usage Mask"/>
          <AttributeValue type="Integer" value="Verify Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-134-10-
certificate1"/>
            <NameType type="Enumeration" 
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Certify"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="Certificate"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
      <Certificate>
        <CertificateType type="Enumeration" value="X_509"/>
        <CertificateValue type="ByteString"
value="30820277308201e0a003020102020900bba23d1b6a48f97300d06092a864
886f70d01010b0500303b310b3009060355040613025553310d300b060355040a130
454455354310e300c060355040b13054f41534953310d300b060355040313044b4d4
950301e170d3133303631383038353535375a170d3134303631383038353535375a3
03c310b3009060355040613025553310d300b060355040a130441434d45310d300b0
60355040b13044b4d4950310f300d0603550403130643c69656e7430820122300d0
6092a864886f70d01010105000382010f003082010a0282010100ab7f161c0042496
ccd6c6d4dadb919973435357776003acf54b7af1e440afb80b64a8755f8002cfeba6
b184540a2d66086d74648346d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176
b7957c422e7d03fc6267fa2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a
41100f8aa214900df8b65089f98135b1c67b701675abdbc7d5721aac9d14a7f081fc
ec80b64e8a0ecc8295353c795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d2112
6eba8da7d0ca34142cb76f91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c
8d7cce8946a9ac99b1c2815c3612a29a82d73a1f99374fe30e54951662a6eda29c6f
c411335d5dc7426b0f6050203010001300d06092a864886f70d01010b05000381810
0c4fe08d5bd74239648c7faabaed0978527ac01a0fd17b8a65c0d92501c4eab3f487
511062eafedc1024e74dc6bfdaae7f66d1fdda7574f6db3f03c6de83586b52c593a4
671001a0531bc43eff4849880b07924b7a9a0236d5d64d82d4d8e42dcd3a72c80728
804f9ba7f0e80c3fe3eb09cb3ed7fbfbb2167c99be513ff9db0b6"/>
```

```
      </Certificate>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="Cryptographic Length"/>
      <AttributeName type="TextString" value="Certificate Issuer"/>
      <AttributeName type="TextString" value="Certificate Type"/>
      <AttributeName type="TextString" value="Certificate Subject"/>
      <AttributeName type="TextString" value="Certificate Identifier"/>
      <AttributeName type="TextString" value="State"/>
      <AttributeName type="TextString" value="Digest"/>
      <AttributeName type="TextString" value="Link"/>
      <AttributeName type="TextString" value="Lease Time"/>
      <AttributeName type="TextString" value="Initial Date"/>
      <AttributeName type="TextString" value="Unique Identifier"/>
      <AttributeName type="TextString" value="Name"/>
      <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
      <AttributeName type="TextString" value="Object Type"/>
      <AttributeName type="TextString" value="Last Change Date"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="Certificate Identifier"/>
      <AttributeName type="TextString" value="Certificate Issuer"/>
      <AttributeName type="TextString" value="Certificate Subject"/>
      <AttributeName type="TextString" value="Certificate Type"/>
      <AttributeName type="TextString" value="Cryptographic Length"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Identifier"/>
        <AttributeValue>
          <Issuer type="TextString" value="CN=KMIP,OU=OASIS,O=TEST,C=US"/>
          <SerialNumber type="TextString" value="9BBA23D1B6A48F97"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Issuer"/>
        <AttributeValue>
          <CertificateIssuerDistinguishedName type="TextString" value="CN=KMIP,OU=OASIS,O=TEST,C=US"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
```

```
        <AttributeName type="TextString" value="Certificate
Subject"/>
        <AttributeValue>
          <CertificateSubjectDistinguishedName type="TextString"
value="CN=Client,OU=KMIP,O=ACME,C=US"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Type"/>
        <AttributeValue type="Enumeration" value="X_509"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic
Length"/>
        <AttributeValue type="Integer" value="2048"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReCertify"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
      <CertificateRequestType type="Enumeration" value="PKCS_10"/>
      <CertificateRequest type="ByteString"
value="3082028130820169020100303c310b3009060355040613025553310d300b0
60355040a130441434d45310d300b060355040b13044b4d4950310f300d060355040
31306436c69656e7430820122300d06092a864886f70d01010105000382010f00308
2010a0282010100ab7f161c0042496ccd6c6d4dadb919973435357776003acf54b7a
f1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b8d71812b20
5387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89b9bee9e60a
1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f98135b1c67b70
1675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328abf70e1b42
e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013da809e9c1b
7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612a29a82d73a
1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010001a000300
d06092a864886f70d010105050003820101002d90f5492c3df1771df4e87e1087cb9
52197319a9696e2d588efda580d8d3304427b997cd921ad7c674aea413fba85fd61e
6a481de9ab2e8a4ff43c02655015d3437f783fe0c781519cd08ffd3c007c7fade963
2fe5659e2cac35bd6aaf3e13dc18097d996df01b66fc5e26ca109380863a209125cc
0fd79533f327fa1cad444d89d3ff81b92a91428c469c846090fd1324846e12d01671
962c332a7826152daaf486cc867185c2e27caf2f009898db07fe4b45c518192aa493
d8f8c0198db67f90672ab6de05a08032941377f473d80716d85adc6182003ab34942
302214eb3895f15403f2616adfd6bb5e6aa47fa38c9dfc73f4de80ddb91bdb04d21c
82ba6"/>
      <TemplateAttribute>
        <Attribute>
```

```
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Verify Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-134-10-certificate2"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReCertify"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Link"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Link"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
```

```
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="CertificateLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_3"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="Link"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="ReplacementObjectLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 11
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
      <AttributeName type="TextString" value="Link"/>
      <AttributeName type="TextString" value="Certificate Identifier"/>
      <AttributeName type="TextString" value="Name"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="ReplacedObjectLink"/>
          <LinkedObjectIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_2"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Identifier"/>
        <AttributeValue>
          <Issuer type="TextString" value="CN=KMIP,OU=OASIS,O=TEST,C=US"/>
          <SerialNumber type="TextString" value="CF77F7A23282BC12"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-134-10-certificate1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-134-10-certificate2"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 12
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 13
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 14
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 15
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_3"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.25 TC-NP-1-10 - Put

In this test case the client issues a Create request, whereby the server creates a new symmetric key and returns the Unique Identifier. To clean up, the client then performs a Destroy operation to destroy the key.

The server sends Put messages to the client via a separate channel.

```
# TIME 0
# [Client-to-Server]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-NP-1-10"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Client-to-Server]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:13:47+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
# [Server-to-Client]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Put"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <PutFunction type="Enumeration" value="New"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="7546ef6cd37c49806824984477987d1e"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
      <Attribute>
        <AttributeName type="TextString" value="x-ID"/>
        <AttributeValue type="TextString" value="TC-NP-1-10"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Unique Identifier"/>
        <AttributeValue type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Algorithm"/>
        <AttributeValue type="Enumeration" value="AES"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Length"/>
        <AttributeValue type="Integer" value="128"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
        <AttributeValue type="Integer" value="Decrypt Encrypt"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Digest"/>
        <AttributeValue>
          <HashingAlgorithm type="Enumeration" value="SHA_256"/>
          <DigestValue type="ByteString" value="7549ecda2cd1569974c3748f223fbc947ce9cabce581497522e4b75e9d6ede81"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Initial Date"/>
        <AttributeValue type="DateTime" value="2013-06-26T05:13:48+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Last Change Date"/>
        <AttributeValue type="DateTime" value="2013-06-26T05:13:48+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Lease Time"/>
        <AttributeValue type="Interval" value="3600"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="PreActive"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
# [Server-to-Client]
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:13:48+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Put"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
# [Client-to-Server]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Client-to-Server]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:13:48+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.26 TC-NP-2-10 - Notify & Put

This test case tests the import of key using the Register operation. To validate that the registered key is treated the same as a locally created key, an attribute is added to the key and then modified. Finally, the key is destroyed.

The server sends Notify and Put messages to the client via a separate channel.

```
# TIME 0
# [Client-to-Server]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-NP-2-10"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="1122456789abcdef0123456789abcdef"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Client-to-Server]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
# [Server-to-Client]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Put"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
      <PutFunction type="Enumeration" value="New"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" 
value="1122456789abcdef0123456789abcdef"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
      <Attribute>
        <AttributeName type="TextString" value="x-ID"/>
        <AttributeValue type="TextString" value="TC-NP-2-10"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Unique Identifier"/>
        <AttributeValue type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic 
Algorithm"/>
        <AttributeValue type="Enumeration" value="AES"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic 
```

```
Length"/>
        <AttributeValue type="Integer" value="128"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
        <AttributeValue type="Integer" value="Encrypt"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Digest"/>
        <AttributeValue>
          <HashingAlgorithm type="Enumeration" value="SHA_256"/>
          <DigestValue type="ByteString" value="47c01d3851ce2f254d18928526b6126de30cef9a34a4cfbd4648ec3ed21a9e86"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Initial Date"/>
        <AttributeValue type="DateTime" value="2013-06-26T05:54:18+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Last Change Date"/>
        <AttributeValue type="DateTime" value="2013-06-26T05:54:18+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Lease Time"/>
        <AttributeValue type="Interval" value="3600"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="PreActive"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Server-to-Client]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Put"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
# [Client-to-Server]
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="unknown"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Client-to-Server]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="unknown"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
# [Server-to-Client]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Notify"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="unknown"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Last Change Date"/>
        <AttributeValue type="DateTime" value="2013-06-
26T05:54:18+00:00"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Server-to-Client]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Notify"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
# [Client-to-Server]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="third party"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Client-to-Server]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="third party"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
# [Server-to-Client]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Notify"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="third party"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Last Change Date"/>
        <AttributeValue type="DateTime" value="2013-06-26T05:54:18+00:00"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Server-to-Client]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Notify"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
# [Client-to-Server]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Client-to-Server]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
# [Server-to-Client]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Notify"/>
    <RequestPayload>
```

```
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Last Change Date"/>
        <AttributeValue type="DateTime" value="2013-06-26T05:54:18+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Destroyed"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Server-to-Client]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Notify"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.27 TC-ECC-1-10 - Register an ECC Key Pair

EC recommended curve is P-256 (secp256r1)

- Private Key format ECPrivateKey - http://tools.ietf.org/html/rfc5915

- Public Key format SubjectPublicKeyInfo - http://tools.ietf.org/html/rfc5480

Register a EC private key in the ECPrivateKey key format, then register the corresponding public key, in X.509 (SubjectPublicKeyInfo) format, with the Link attribute pointing to the previously registered private key. Then add the Link attribute to the private key, and perform Locate operations to find the public and private keys using the Link attribute. Get both the private and public keys in default format, then destroy both the private and the public key.

```
-----BEGIN EC PRIVATE KEY-----
MHcCAQEEIJEqDiCPXdc0sYUYR+RlnEWIsW2fO8GtpRDqLJadr570oAoGCCqGSM49
AwEHoUQDQgAEs0Q5L7cqomf4bX2DfeHZbOlg/8Bc7vPx+ibYVGpkQvPBOX6Smq2N
yrJbKCyooc8AvvfLGKD16kRJOjCm0iOyWw==
-----END EC PRIVATE KEY-----
```

```
-----BEGIN PUBLIC KEY-----
MFkwEwYHKoZIzj0CAQYIKoZIzj0DAQcDQgAEs0Q5L7cqomf4bX2DfeHZbOlg/8Bc
7vPx+ibYVGpkQvPBOX6Smq2NyrJbKCyooc8AvvfLGKD16kRJOjCm0iOyWw==
-----END PUBLIC KEY-----
```

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-ECC-1-10-prikey1"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="ECPrivateKey"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="30770201010420912a0e208f5dd734b1851847e4659c4588b16d9f3bc1ada
510ea2c969daf9ef4a00a06082a8648ce3d030107a14403420004b344392fb72aa26
7f86d7d837de1d96ce960ffc05ceef3f1fa26d8546a6442f3c1397e929aad8dcab25
b282ca8a1cf00bef7cb18a0f5ea44493a30a6d223b25b"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PrivateKeyLink"/>
            <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-ECC-1-10-pubkey1"/>
        </Attribute>
      </TemplateAttribute>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="X_509"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="3059301306072a8648ce3d020106082a8648ce3d03010703420004b344392fb72aa267f86d7d837de1d96ce960ffc05ceef3f1fa26d8546a6442f3c1397e929aad8dcab25b282ca8a1cf00bef7cb18a0f5ea44493a30a6d223b25b"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PublicKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PublicKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PrivateKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
```

```
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="ECPrivateKey"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="307702010104420912a0e208f5dd734b1851847e4659c4588b16d9f3bc1ada
510ea2c969daf9ef4a00a06082a8648ce3d030107a14403420004b344392fb72aa26
7f86d7d837de1d96ce960ffc05ceef3f1fa26d8546a6442f3c1397e929aad8dcab25
b282ca8a1cf00bef7cb18a0f5ea44493a30a6d223b25b"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PrivateKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
       <PublicKey>
      <KeyBlock>
        <KeyFormatType type="Enumeration" value="X_509"/>
        <KeyValue>
          <KeyMaterial type="ByteString"
value="3059301306072a8648ce3d020106082a8648ce3d030107034200004b344392
fb72aa267f86d7d837de1d96ce960ffc05ceef3f1fa26d8546a6442f3c1397e929aa
d8dcab25b282ca8a1cf00bef7cb18a0f5ea44493a30a6d223b25b"/>
        </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
        <CryptographicLength type="Integer" value="256"/>
      </KeyBlock>
      </PublicKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.28 TC-ECC-2-10 - Register an ECC Key Pair in PKCS8 Format

EC recommended curve is P-256 (secp256r1)

- Public Key format SubjectPublicKeyInfo - http://tools.ietf.org/html/rfc5480

Register a EC private key in PKCS8 key format (with passphrase 'secret' using pbeWithSHAAnd3-KeyTripleDES-CBC), then register the corresponding public key, in X.509 (SubjectPublicKeyInfo) format, with the Link attribute pointing to the previously registered private key. Then add the

Link attribute to the private key, and perform Locate operations to find the public and private keys using the Link attribute. Get both the private and public keys in default format, then destroy both the private and the public key.

```
-----BEGIN ENCRYPTED PRIVATE KEY-----
MIGxMBwGCiqGSIb3DQEMAQMwDgQIqCAF0cAFXb4CAggABIGQkUySNQqsjKPKtl9y
g/n+qhaBSsolURUH4PBYVpWVUNzqKQhz0MD8/gfBSz1DOU9s7mC97LVgWaEqJTad
sOgPsJL3Z4IUuNTWNOMLZtY3jDz4z4grmyYM2c/aJj9eYVu0Ufp6n1lCsdU6HFpn
urzWFAsRK+Yt+zpokG+raOooO8kIz59Fm30ziZPZF4G74GMM
-----END ENCRYPTED PRIVATE KEY-----

-----BEGIN PUBLIC KEY-----
MFkwEwYHKoZIzj0CAQYIKoZIzj0DAQcDQgAEs0Q5L7cqomf4bX2DfeHZbOlg/8Bc
7vPx+ibYVGpkQvPBOX6Smq2NyrJbKCyooc8AvvfLGKD16kRJOjCm0iOyWw==
-----END PUBLIC KEY-----
```

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-ECC-2-10-
prikey1"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_8"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3081b1301c060a2a864886f70d010c0103300e04082f2656a336573139020
20800048190eadf76e9cee21053b01c53e175b0e8c4d627c17da1b2df47d8cfb35a0
d7252a9a6488660d61235be735178d0ca8548871567c22803d8f6f6009f05c26429c
83ab72d0f2e7e7870befc3ec746f52d0eccafe34b72a791e9535b34f584b96dc1240
34e8a82df0b5c3e70018f2d4745d66ae6da9398234ebda2ca4d02992613cb377b965
1282c4f3fd0c5a3c5bc33cc3ae0"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PrivateKeyLink"/>
            <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-ECC-2-10-pubkey1"/>
        </Attribute>
      </TemplateAttribute>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="X_509"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3059301306072a8648ce3d020106082a8648ce3d03010703420004b344392
fb72aa267f86d7d837de1d96ce960ffc05ceef3f1fa26d8546a6442f3c1397e929aa
d8dcab25b282ca8a1cf00bef7cb18a0f5ea44493a30a6d223b25b"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PublicKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PublicKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PrivateKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
```

```
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_8"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3081b1301c060a2a864886f70d010c0103300e04082f2656a336573139020
20800048190eadf76e9cee21053b01c53e175b0e8c4d627c17da1b2df47d8cfb35a0
d7252a9a6488660d61235be735178d0ca8548871567c22803d8f6f6009f05c26429c
83ab72d0f2e7e7870befc3ec746f52d0eccafe34b72a791e9535b34f584b96dc1240
34e8a82df0b5c3e70018f2d4745d66ae6da9398234ebda2ca4d02992613cb377b965
1282c4f3fd0c5a3c5bc33cc3ae0"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PrivateKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
       <PublicKey>
      <KeyBlock>
        <KeyFormatType type="Enumeration" value="X_509"/>
        <KeyValue>
          <KeyMaterial type="ByteString"
value="3059301306072a8648ce3d020106082a8648ce3d03010703420004b344392
fb72aa267f86d7d837de1d96ce960ffc05ceef3f1fa26d8546a6442f3c1397e929aa
d8dcab25b282ca8a1cf00bef7cb18a0f5ea44493a30a6d223b25b"/>
        </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
        <CryptographicLength type="Integer" value="256"/>
      </KeyBlock>
      </PublicKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.1.29 TC-ECC-3-10 - Register an ECC Key Pair and ECDSA Certificate

EC recommended curve is P-256 (secp256r1)

- Private Key format ECPrivateKey - http://tools.ietf.org/html/rfc5915

- Public Key format SubjectPublicKeyInfo - http://tools.ietf.org/html/rfc5480

Register a EC private key in the ECPrivateKey key format, then register the corresponding public key, in X.509 (SubjectPublicKeyInfo) format, and a corresponding ECDSA certificate, with the Link attribute pointing to the previously registered private key. Return the attribute values for the ECDSA certificate showing the correct server parsing of the certificate. Then add the Link attribute to the private key, and perform Locate operations to find the public and private keys using the Link attribute. Get both the private and public keys in default format, then destroy both the private and the public key.

```
-----BEGIN EC PRIVATE KEY-----
MHcCAQEEIJEqDiCPXdc0sYUYR+RlnEWIsW2fO8GtpRDqLJadr570oAoGCCqGSM49
AwEHoUQDQgAEs0Q5L7cqomf4bX2DfeHZbOlg/8Bc7vPx+ibYVGpkQvPBOX6Smq2N
yrJbKCyooc8AvvfLGKD16kRJOjCm0iOyWw==
-----END EC PRIVATE KEY-----

-----BEGIN PUBLIC KEY-----
MFkwEwYHKoZIzj0CAQYIKoZIzj0DAQcDQgAEs0Q5L7cqomf4bX2DfeHZbOlg/8Bc
7vPx+ibYVGpkQvPBOX6Smq2NyrJbKCyooc8AvvfLGKD16kRJOjCm0iOyWw==
-----END PUBLIC KEY-----

-----BEGIN CERTIFICATE-----
MIIB1zCCAX2gAwIBAgIJANraFqWNKSTZMAoGCCqGSM49BAMCMEgxCzAJBgNVBAYT
AlVTMQ0wCwYDVQQKDARURVNUMQ4wDAYDVQQLDAVPQVNJUzEaMBgGA1UEAwwRS01J
UC1FQy1zZWNwMjU2cjEwHhcNMTMwNjI2MDM1NDQzWhcNMjMwNjI0MDM1NDQzWjBI
MQswCQYDVQQGEwJVUzENMAsGA1UECgwEVEVTVDEOMAwGA1UECwwFT0FTSVMxGjAY
BgNVBAMMEUtNSVAtRUMtc2VjcDI1NnIxMFkwEwYHKoZIzj0CAQYIKoZIzj0DAQcD
QgAEs0Q5L7cqomf4bX2DfeHZbOlg/8Bc7vPx+ibYVGpkQvPBOX6Smq2NyrJbKCyo
oc8AvvfLGKD16kRJOjCm0iOyW6NQME4wHQYDVR0OBBYEFMdL251FazsUho/ZyIZ9
4Pzf79STMB8GA1UdIwQYMBaAFMdL251FazsUho/ZyIZ94Pzf79STMAwGA1UdEwQF
MAMBAf8wCgYIKoZIzj0EAwIDSAAwRQIgI19fyzdd1gavOhIaeHbOnBoV0ldEmg6q
YA+OEmaQS98CIQCpuF4UPYklouuwi8hDTVavL3MAX/9Cm82CRf1fshp7RQ==
-----END CERTIFICATE-----
```

```
# TIME 0
<RequestMessage>
```

```
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-ECC-3-10-prikey1"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="ECPrivateKey"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="30770201010420912a0e208f5dd734b1851847e4659c4588b16d9f3bc1ada510ea2c969daf9ef4a00a06082a8648ce3d030107a14403420004b344392fb72aa267f86d7d837de1d96ce960ffc05ceef3f1fa26d8546a6442f3c1397e929aad8dcab25b282ca8a1cf00bef7cb18a0f5ea44493a30a6d223b25b"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
```

```
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PrivateKeyLink"/>
            <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-ECC-3-10-pubkey1"/>
        </Attribute>
      </TemplateAttribute>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="X_509"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="3059301306072a8648ce3d020106082a8648ce3d03010703420004b344392fb72aa267f86d7d837de1d96ce960ffc05ceef3f1fa26d8546a6442f3c1397e929aad8dcab25b282ca8a1cf00bef7cb18a0f5ea44493a30a6d223b25b"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PublicKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
```

```
      <BatchCount type="Integer" value="1"/>
    </ResponseHeader>
    <BatchItem>
      <Operation type="Enumeration" value="Register"/>
      <ResultStatus type="Enumeration" value="Success"/>
      <ResponsePayload>
        <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      </ResponsePayload>
    </BatchItem>
</ResponseMessage>
```

```
# TIME 2
```

```
<RequestMessage>
    <RequestHeader>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="0"/>
      </ProtocolVersion>
      <BatchCount type="Integer" value="1"/>
    </RequestHeader>
    <BatchItem>
      <Operation type="Enumeration" value="Register"/>
      <RequestPayload>
        <ObjectType type="Enumeration" value="Certificate"/>
        <TemplateAttribute>
          <Attribute>
            <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
            <AttributeValue type="Integer" value="Verify Sign"/>
          </Attribute>
          <Attribute>
            <AttributeName type="TextString" value="Link"/>
            <AttributeValue>
              <LinkType type="Enumeration" value="PublicKeyLink"/>
              <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
            </AttributeValue>
          </Attribute>
          <Attribute>
            <AttributeName type="TextString" value="x-ID"/>
            <AttributeValue type="TextString" value="TC-ECC-3-10-
cert1"/>
          </Attribute>
        </TemplateAttribute>
        <Certificate>
          <CertificateType type="Enumeration" value="X_509"/>
          <CertificateValue type="ByteString"
value="308201d73082017da003020102020900dada16a58d2924d9300a06082a864
8ce3d040302304831 0b3009060355040613025553310d300b060355040a0c0454455
354310e300c060355040b0c054f41534953311a301806035504030c114b4d49502d4
5432d736563703235367231301e170d3133303632363033353434335a170d3233303
6323430333534343 35a3048310b3009060355040613025553310d300b060355040a0
c0454455354310e300c060355040b0c054f41534953311a301806035504030c114b4
d49502d45432d7365637032353672313059301306072a8648ce3d020106082a8648c
e3d030107034200 04b344392fb72aa267f86d7d837de1d96ce960ffc05ceef3f1fa2
6d8546a6442f3c1397e929aad8dcab25b282ca8a1cf00bef7cb18a0f5ea44493a30a
6d223b25ba350304e301d0603551d0e04160414c74bdb9d456b3b14868fd9c8867de
```

```
0fcdfefd493301f0603551d23041830168014c74bdb9d456b3b14868fd9c8867de0f
cdfefd493300c0603551d1304053003010 1ff300a06082a8648ce3d040302034800 3
0450220235f5fcb375dd606af3a121a7876ce9c1a15d257449a0eaa600f8e1266904
bdf022100a9b85e143d8925a2ebb08bc8434d56af2f73005fff429bcd8245fd5fb21
a7b45"/>
      </Certificate>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="01"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="02"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="CertificateLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="01"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="02"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="CertificateLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="x-ID"/>
      <AttributeName type="TextString" value="Unique Identifier"/>
      <AttributeName type="TextString" value="Object Type"/>
      <AttributeName type="TextString" value="Certificate Type"/>
      <AttributeName type="TextString" value="Certificate Identifier"/>
      <AttributeName type="TextString" value="Certificate Issuer"/>
      <AttributeName type="TextString" value="Certificate Subject"/>
      <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
      <AttributeName type="TextString" value="Digest"/>
      <AttributeName type="TextString" value="Initial Date"/>
      <AttributeName type="TextString" value="Last Change Date"/>
      <AttributeName type="TextString" value="Lease Time"/>
      <AttributeName type="TextString" value="Link"/>
      <AttributeName type="TextString" value="State"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="Certificate Type"/>
      <AttributeName type="TextString" value="Certificate Identifier"/>
      <AttributeName type="TextString" value="Certificate Issuer"/>
      <AttributeName type="TextString" value="Certificate Subject"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Type"/>
        <AttributeValue type="Enumeration" value="X_509"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Identifier"/>
        <AttributeValue>
          <Issuer type="TextString" value="CN=KMIP-EC-secp256r1,OU=OASIS,O=TEST,C=US"/>
          <SerialNumber type="TextString" value="DADA16A58D2924D9"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Issuer"/>
        <AttributeValue>
          <CertificateIssuerDistinguishedName type="TextString" value="CN=KMIP-EC-secp256r1,OU=OASIS,O=TEST,C=US"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Subject"/>
        <AttributeValue>
          <CertificateSubjectDistinguishedName type="TextString"
```

```
value="CN=KMIP-EC-secp256r1,OU=OASIS,O=TEST,C=US"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PublicKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PrivateKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="ECPrivateKey"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3081b1301c060a2a864886f70d010c0103300e04082f2656a336573139020
20800048190eadf76e9cee21053b01c53e175b0e8c4d627c17da1b2df47d8cfb35a0
d7252a9a6488660d61235be735178d0ca8548871567c22803d8f6f6009f05c26429c
83ab72d0f2e7e7870befc3ec746f52d0eccafe34b72a791e9535b34f584b96dc1240
34e8a82df0b5c3e70018f2d4745d66ae6da9398234ebda2ca4d02992613cb377b965
1282c4f3fd0c5a3c5bc33cc3ae0"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PrivateKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
       <PublicKey>
      <KeyBlock>
        <KeyFormatType type="Enumeration" value="X_509"/>
        <KeyValue>
          <KeyMaterial type="ByteString" value="3059301306072a8648ce3d020106082a8648ce3d03010703420004b344392fb72aa267f86d7d837de1d96ce960ffc05ceef3f1fa26d8546a6442f3c1397e929aad8dcab25b282ca8a1cf00bef7cb18a0f5ea44493a30a6d223b25b"/>
        </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
        <CryptographicLength type="Integer" value="256"/>
      </KeyBlock>
      </PublicKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 10
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
```

```
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 11
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 12
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
```

```
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2 KMIP 1.1 Test Cases

2.2.1 TC-311-11 - Create / Destroy

In this test case the client issues a Create request, whereby the server creates a new symmetric key and returns the Unique Identifier. To clean up, the client then performs a Destroy operation to destroy the key.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-311-11"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:21+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:21+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.2 TC-312-11 - Register / Create / Get attributes / Destroy

Here the client first registers a template object and then creates a symmetric key using the registered template. To verify that the attributes of the key were set correctly from the template, the client then issues a Get Attributes command, after which it destroys first the key and then the template.

```
# TIME 0
<RequestMessage>
    <RequestHeader>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="1"/>
      </ProtocolVersion>
      <BatchCount type="Integer" value="1"/>
    </RequestHeader>
    <BatchItem>
      <Operation type="Enumeration" value="Register"/>
      <RequestPayload>
        <ObjectType type="Enumeration" value="Template"/>
        <TemplateAttribute>
          <Attribute>
            <AttributeName type="TextString" value="x-ID"/>
            <AttributeValue type="TextString" value="TC-312-11"/>
          </Attribute>
          <Attribute>
            <AttributeName type="TextString" value="Name"/>
            <AttributeValue>
              <NameValue type="TextString" value="TC-312-11-
template1"/>
              <NameType type="Enumeration" 
value="UninterpretedTextString"/>
            </AttributeValue>
          </Attribute>
        </TemplateAttribute>
        <Template>
          <Attribute>
            <AttributeName type="TextString" value="Object Group"/>
            <AttributeValue type="TextString" value="Group1"/>
          </Attribute>
          <Attribute>
            <AttributeName type="TextString" value="Application Specific Information"/>
            <AttributeValue>
              <ApplicationNamespace type="TextString" value="ssl"/>
              <ApplicationData type="TextString" value="www.example.com"/>
            </AttributeValue>
          </Attribute>
          <Attribute>
            <AttributeName type="TextString" value="Contact Information"/>
            <AttributeValue type="TextString" value="Joe"/>
          </Attribute>
          <Attribute>
            <AttributeName type="TextString" value="x-Purpose"/>
            <AttributeValue type="TextString" value="demonstration"/>
          </Attribute>
        </Template>
      </RequestPayload>
    </BatchItem>
  </RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:21+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Name>
          <NameValue type="TextString" value="TC-312-11-template1"/>
          <NameType type="Enumeration"
```

```
value="UninterpretedTextString"/>
        </Name>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-312-11-key1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:22+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Object Group"/>
      <AttributeName type="TextString" value="Application Specific Information"/>
      <AttributeName type="TextString" value="Contact Information"/>
      <AttributeName type="TextString" value="x-Purpose"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:22+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Object Group"/>
        <AttributeValue type="TextString" value="Group1"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Application Specific Information"/>
        <AttributeValue>
          <ApplicationNamespace type="TextString" value="ssl"/>
          <ApplicationData type="TextString" value="www.example.com"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Contact Information"/>
        <AttributeValue type="TextString" value="Joe"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="x-Purpose"/>
        <AttributeValue type="TextString" value="demonstration"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:22+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:22+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.3 TC-313-11 - Create / Locate / Get / Destroy

This test case tests the Locate and Get operations, in addition to the previously used operations Create and Destroy. A symmetric key is first created, and then a lookup is performed on the Name attribute using the Locate operation. Subsequently, a Get request is issued to retrieve the located key, after which the key on the server is destroyed.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-313-11-key1"/>
            <NameType type="Enumeration"
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="DES3"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Length"/>
          <AttributeValue type="Integer" value="168"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:22+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-313-11-key1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:22+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="7367578051012a6d134a855e25c8cd5e4ca131455729d3c8"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="DES3"/>
          <CryptographicLength type="Integer" value="168"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Unique Identifier"/>
        <AttributeValue type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.4 TC-314-11 - Dual Client Test Case, ID Placeholder-linked Locate & Get Batch

This test case has two clients performing operations on the same key. The first client initially registers a template and creates a symmetric key using that template. The second client then does a batched Locate and Get using the ID Placeholder to retrieve the key. The second client thereafter performs a number of operations on the key (Get Attribute List, Get Attribute, Add Attribute, Modify Attribute and Delete Attribute), before the first client finally destroys the key and the template. The first client also tries to Get the key and the template after they have been destroyed, but the Get operation fails in both cases. This test case demonstrates the fact that it is possible for two clients to cooperate and use the same managed object while only having knowledge of a single pre-agreed Name attribute value and without having to share any other information.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="Template"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-314-11-
template1"/>
```

```
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
      <Template>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
      </Template>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Name>
          <NameValue type="TextString" value="TC-314-11-template1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </Name>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-314-11-key1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Contact Information"/>
          <AttributeValue type="TextString" value="Foo"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="aa21f8c659d6e10d"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
```

```xml
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-314-11-key1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="495a95f165854d1e"/>
    <RequestPayload>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="aa21f8c659d6e10d"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="495a95f165854d1e"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="d351910f1d7934d6e2ae17576564e2bc"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Cryptographic Length"/>
      <AttributeName type="TextString" value="Cryptographic Algorithm"/>
      <AttributeName type="TextString" value="State"/>
      <AttributeName type="TextString" value="Digest"/>
      <AttributeName type="TextString" value="Lease Time"/>
      <AttributeName type="TextString" value="Initial Date"/>
      <AttributeName type="TextString" value="Unique Identifier"/>
      <AttributeName type="TextString" value="Name"/>
      <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
      <AttributeName type="TextString" value="Object Type"/>
      <AttributeName type="TextString" value="Contact Information"/>
      <AttributeName type="TextString" value="Last Change Date"/>
      <AttributeName type="TextString" value="Fresh"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Name"/>
      <AttributeName type="TextString" value="Contact Information"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-314-11-key1"/>
          <NameType type="Enumeration"
value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Contact
Information"/>
        <AttributeValue type="TextString" value="Foo"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="32d84369c120488e"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="Value1"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="519cf4f0ec1ac13f"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="Value2"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="32d84369c120488e"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="Value1"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="519cf4f0ec1ac13f"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="Value2"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="fce08e45995686b6"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="ModifiedValue1"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="dc2bfda88f39f5fc"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="ModifiedValue2"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="fce08e45995686b6"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="ModifiedValue1"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="dc2bfda88f39f5fc"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="ModifiedValue2"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="ba8d4889753b7414"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="x-attribute1"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="88fa2f142c615edb"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="x-attribute2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="ba8d4889753b7414"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="ModifiedValue1"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="88fa2f142c615edb"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="ModifiedValue2"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
```

```
</ResponseMessage>
```

```
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="ItemNotFound"/>
    <ResultMessage type="TextString" value="No Cryptographic Object found with given Unique Identifier"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 11
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="ItemNotFound"/>
    <ResultMessage type="TextString" value="No Cryptographic Object
found with given Unique Identifier"/>
  </BatchItem>
</ResponseMessage>
```

2.2.5 TC-315-11 - Register / Destroy Secret Data

In this test case the client issues a Register request containing a Secret Data object, whereby the server registers the object and returns the Unique Identifier. To clean up, the client then performs a Destroy

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SecretData"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-315-11"/>
        </Attribute>
      </TemplateAttribute>
      <SecretData>
        <SecretDataType type="Enumeration" value="Password"/>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Opaque"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="53656372657450617373776f7264"/>
          </KeyValue>
        </KeyBlock>
      </SecretData>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 1
<RequestMessage>
```

```
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.6 TC-32-11 - Asynchronous Locate

This test case tests the asynchronous capabilities of KMIP using the Locate operation. A key is created and then a Locate request is sent containing the Name of the created key and with the message header Asynchronous Indicator-field set to True. If the server returns an asynchronous response to the Locate, the client then polls the server until the operation is ready. If the server responded asynchronously, a subsequent Locate operation that is also handled asynchronously is then Canceled, before the key is finally destroyed.

This test case shows the use of two clients with the same assumptions as in the test case described in Section . Since the client is unable to force the server to respond asynchronously, it is possible for a server to respond synchronously to the requests issued at times 1 and 4, in which case the expected response are the ones shown at times 2 and 5, respectively. In the case of the server not responding asynchronously to the Locate requests, the client is permitted to skip the requests illustrated at time 7 and 8.

```
# TIME 0
<RequestMessage>
```

```
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-32-12-key1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Object Group"/>
          <AttributeValue type="TextString" value="Group1"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <AsynchronousIndicator type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-32-12-key1"/>
          <NameType type="Enumeration" 
value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="OperationPending"/>
    <AsynchronousCorrelationValue type="ByteString" 
value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Poll"/>
    <RequestPayload>
      <AsynchronousCorrelationValue type="ByteString" value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="cc9e3b20f5c4fc4d1298f68d0b7de65b"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <AsynchronousIndicator type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Object Group"/>
        <AttributeValue type="TextString" value="Group1"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="OperationPending"/>
    <AsynchronousCorrelationValue type="ByteString" value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Poll"/>
    <RequestPayload>
      <AsynchronousCorrelationValue type="ByteString"
value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="cc9e3b20f5c4fc4d1298f68d0b7de65b"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <AsynchronousIndicator type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-32-12-key1"/>
          <NameType type="Enumeration"
value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="OperationPending"/>
    <AsynchronousCorrelationValue type="ByteString" value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Cancel"/>
    <RequestPayload>
      <AsynchronousCorrelationValue type="ByteString" value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Cancel"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <AsynchronousCorrelationValue type="ByteString" value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
      <CancellationResult type="Enumeration" value="Canceled"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.7 TC-41-11 - Revoke Scenario

This test case tests the revocation aspect of the key life cycle support in KMIP. A key is created and a Get Attribute for the State-attribute reveals that the key is in Pre-active state. The Activation Date is then set, which changes the state to Active. The key is then revoked with a revocation reason of Compromised and the state subsequently changed to Compromised, but this does not stop a client from being able to add, modify and delete attributes or even get the key (since we assume here that the out-of-band registration has been used to make the server aware of the fact that the client is capable of interpreting the attributes of the key and determining what it is allowed to do with the key). To clean up, the created key is finally destroyed.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-41-11-key1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="PreActive"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Activate"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Activate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Active"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-41-11-key1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
```

```
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="9c7d7c4fd2076f1909a6ba4342cab1de"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" value="KeyCompromise"/>
      </RevocationReason>
      <CompromiseOccurrenceDate type="DateTime" value="1970-01-01T00:00:06+00:00"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Compromised"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Cryptographic Length"/>
      <AttributeName type="TextString" value="Cryptographic Algorithm"/>
      <AttributeName type="TextString" value="State"/>
      <AttributeName type="TextString" value="Compromise Occurrence Date"/>
      <AttributeName type="TextString" value="Compromise Date"/>
      <AttributeName type="TextString" value="Digest"/>
      <AttributeName type="TextString" value="Lease Time"/>
      <AttributeName type="TextString" value="Initial Date"/>
      <AttributeName type="TextString" value="Activation Date"/>
      <AttributeName type="TextString" value="Revocation Reason"/>
      <AttributeName type="TextString" value="Unique Identifier"/>
      <AttributeName type="TextString" value="Name"/>
      <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
      <AttributeName type="TextString" value="Object Type"/>
      <AttributeName type="TextString" value="Last Change Date"/>
      <AttributeName type="TextString" value="Fresh"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
<RequestMessage>
```

```
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Compromised"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="23a177faa569463c"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="Value1"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="9b898dc0577f8080"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="Value2"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="23a177faa569463c"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="Value1"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="9b898dc0577f8080"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="Value2"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 11
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
```

```xml
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="0752c951bb9926cc"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="ModifiedValue1"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="33f55c8d7e6cafbf"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="ModifiedValue2"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```xml
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="0752c951bb9926cc"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="ModifiedValue1"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="33f55c8d7e6cafbf"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="ModifiedValue2"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 12
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="a3eb249b495e8ad2"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="x-attribute1"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="c1fe7b3b4c977730"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="x-attribute2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="a3eb249b495e8ad2"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="ModifiedValue1"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="c1fe7b3b4c977730"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="ModifiedValue2"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 13
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="9c7d7c4fd2076f1909a6ba4342cab1de"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 14
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.8 TC-51-11 - Get Usage Allocation Scenario

This test case tests the usage management functionality of KMIP. A key is created and the Activation Date and Protect Stop Date attributes are set in such a way as to allow the Get Usage Allocation operation to be performed. The value of the Usage Limits attribute is set to 1000 bytes, and two subsequent requests for 500 bytes succeed (one of them also verifying the amount that can be received using the Check operation), while a third fails since the usage allocation has been used up. The key is finally revoked and destroyed. This test case shows the use of multiple clients (Client-A, Client-B and Client-C).

```
# TIME 0
# [Client-A]
<RequestMessage>
```

```
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-51-11-key1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
```

```
</ResponseMessage>
```

```
# TIME 1
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="369f6802ee57532b"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Activation Date"/>
        <AttributeValue type="DateTime" value="$NOW-3600"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="b7ca806e52825bf4"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Protect Stop Date"/>
        <AttributeValue type="DateTime" value="$NOW+600"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="369f6802ee57532b"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Activation Date"/>
        <AttributeValue type="DateTime" value="$NOW-3600"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="b7ca806e52825bf4"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Protect Stop Date"/>
        <AttributeValue type="DateTime" value="$NOW+600"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Usage Limits"/>
        <AttributeValue>
          <UsageLimitsTotal type="LongInteger" value="1000"/>
          <UsageLimitsUnit type="Enumeration" value="Byte"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Usage Limits"/>
```

```
          <AttributeValue>
            <UsageLimitsTotal type="LongInteger" value="1000"/>
            <UsageLimitsCount type="LongInteger" value="1000"/>
            <UsageLimitsUnit type="Enumeration" value="Byte"/>
          </AttributeValue>
        </Attribute>
      </ResponsePayload>
    </BatchItem>
</ResponseMessage>
```

```
# TIME 3
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-51-11-key1"/>
          <NameType type="Enumeration"
value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="50f31013c771af4448110f695efa9ec7"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Check"/>
    <UniqueBatchItemID type="ByteString" value="d35a294f9425f06e"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <UsageLimitsCount type="LongInteger" value="500"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="GetUsageAllocation"/>
    <UniqueBatchItemID type="ByteString" value="80454d8ce4f738fe"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <UsageLimitsCount type="LongInteger" value="500"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Check"/>
    <UniqueBatchItemID type="ByteString" value="d35a294f9425f06e"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="GetUsageAllocation"/>
    <UniqueBatchItemID type="ByteString" value="80454d8ce4f738fe"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetUsageAllocation"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <UsageLimitsCount type="LongInteger" value="500"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetUsageAllocation"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
# [Client-C]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-51-11-key1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
# [Client-C]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
```

```
value="50f31013c771af4448110f695efa9ec7"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
# [Client-C]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetUsageAllocation"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <UsageLimitsCount type="LongInteger" value="500"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetUsageAllocation"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="PermissionDenied"/>
    <ResultMessage type="TextString" value="Unable to allocate
requested amount"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="79b998c5f29465f4"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration"
value="CessationOfOperation"/>
      </RevocationReason>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="b0633f0e41187345"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="79b998c5f29465f4"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="b0633f0e41187345"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.9 TC-61-11 - Import of a Third-party Key

This test case tests the import of a foreign key using the Register operation. To validate that the registered key is treated the same as a locally created key, an attribute is added to the key and then modified. Finally, the key is destroyed.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-61-11"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="0123456789abcdef0123456789abcdef"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 1
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="unknown"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="unknown"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
```

```
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="third party"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="third party"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.10 TC-71-11 - Unrecognized Message Extension with Criticality Indicator False

A create request is issued and the request contains a Message Extension with the Criticality Indicator set to false. The server does not understand the extension, but since it is non-critical, the create request is processed normally. Subsequently, the created key is deleted.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-71-11"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
    <MessageExtension>
      <VendorIdentification type="TextString" value="Acme"/>
      <CriticalityIndicator type="Boolean" value="false"/>
      <VendorExtension>
```

```
        <TTLV tag="0x540001" type="TextString" value="na"/>
      </VendorExtension>
    </MessageExtension>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
```

```
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.11 TC-72-11 - Unrecognized Message Extension with Criticality Indicator True

A create request is issued and the request contains a Message Extension with the Criticality Indicator set to true. The server does not understand the extension, and since it is critical, the create request fails and an error is returned.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-72-11"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
    <MessageExtension>
      <VendorIdentification type="TextString" value="Acme"/>
      <CriticalityIndicator type="Boolean" value="true"/>
      <VendorExtension>
        <TTLV tag="0x540001" type="TextString" value="na"/>
      </VendorExtension>
    </MessageExtension>
  </BatchItem>
```

```
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="FeatureNotSupported"/>
    <ResultMessage type="TextString" value="Critical Message Extension not recognized"/>
  </BatchItem>
</ResponseMessage>
```

2.2.12 TC-81-11 - Create a Key Pair

Create a new private/public key pair. Make sure they are linked correctly by issuing Locate commands with the assigned Unique Identifiers. Finally delete both key halves.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="CreateKeyPair"/>
    <RequestPayload>
      <CommonTemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="RSA"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="1024"/>
        </Attribute>
      </CommonTemplateAttribute>
      <PrivateKeyTemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-81-11-privatekey1"/>
            <NameType type="Enumeration"
```

```
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
      </PrivateKeyTemplateAttribute>
      <PublicKeyTemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-81-11-publickey1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
      </PublicKeyTemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="CreateKeyPair"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <PrivateKeyUniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <PublicKeyUniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PublicKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PrivateKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.13 TC-82-11 - Register Both Halves of a Key Pair

Register a private key and a public key and set the Link attribute to point to each other. Verify the links were set correctly by locating the keys based on the link attributes, and then delete both objects.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-82-11-
prikey"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_8"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="30820276020100300d06092a864886f70d0101010500048202603082025c0
2010002818100930451c9ecd94f5bb9da17dd09381bd23be43eca8c7539f301fc8a8
cd5d5274c3e7699dbdc711c97a7aa91e2c50a82bd0b1034f0df493dec16362427e58
acce7f6ce0f9bcc617bbd8c90d0094a2703ba0d09eb19d1005f2fb265526aac75af3
2f8bc782cded2a57f811e03eaf67a944de5e78413dca8f232d074e6dcea4cec9f020
30100010281800b6a7d736199ea48a420e4537ca0c7c046784dcbeaa63baebc0bc13
2787449cde8d7cad0c0c863c0fefb06c3062befc50033ecf87b4e33a9be7bcbc8f15
11ae215e80deb5d8af2bd31319d7821196640935a0cd67c94599579f2100d65e0388
31fdafb0dbe2bbdac00a696e67e756350e1c99ace11a36dabac3ed3e730960059024
100ddf672fbcc5bda3d73affc4e791e0c03390224405d69ccaabc749faa0dcd4c258
3c71dde8941a7b9aa030f52ef1451466c074d4d338fe677892acd9e10fd35bd02410
0a98fbc3ed6b4c6f860f97165ac2f7bb6f2e2cb192a9abd49795be5bcf37d8ee69a6
e169c24e5c32e4e7fa33265461407f952ba49e204818a2f785f113f922b8b0240253
f9470390d39049303777ddbc9750e9d64849ce0903eae704dc9f589b7680deb9d609
fd5bcd4decd6f120542e5cff5d76f2a43c8615fb5b3a9213463797aa9024100a1ddf
023c0cd94c019bb26d09b9e3ca8fa971cb16aa58b9baf79d6081a1dbba452ba53653
e2804ba98ff69e8bb1b3a161ea225ea501463216a8dab9b88a75e5f02406178646e1
12cf79d921a8a843f17f6e7ff974f688122365bf6690cdfc996e1890952eb3820dd1
890ec1c8619e87a2bd38f9d03b37fac742efb748c7885942c39"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="1024"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PrivateKeyLink"/>
            <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-82-11-pubkey"/>
        </Attribute>
      </TemplateAttribute>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="X_509"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="30819f300d06092a864886f70d010101050003818d0030818902818100930451c9ecd94f5bb9da17dd09381bd23be43eca8c7539f301fc8a8cd5d5274c3e7699dbdc711c97a7aa91e2c50a82bd0b1034f0df493dec16362427e58acce7f6ce0f9bcc617bbd8c90d0094a2703ba0d09eb19d1005f2fb265526aac75af32f8bc782cded2a57f811e03eaf67a944de5e78413dca8f232d074e6dcea4cec9f0203010001"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="1024"/>
        </KeyBlock>
      </PublicKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PublicKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PrivateKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.14 TC-91-11 - Create a Key, Re-key

Create a symmetric key with a specific name, and then use Locate to find the key. After using Re-key to create a new key, verify that the name was removed from the existing key and copied to the new key. Also verify that the key material for the old key is still retrievable. To clean up, both keys are deleted.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-91-11-rekeyKey"/>
            <NameType type="Enumeration"
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
```

```
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-91-11-rekeyKey"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
```

```
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-91-11-rekeyKey"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Name"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
```

```
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="9ca9840291a65889043c37707da997e8"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.15 TC-92-11 - Existing Key Expired, Re-key with Same Life-cycle

Create a new symmetric key. Then add the Activation Date and Deactivation Date attributes based on the timestamp in the response to the Create request. The Activation Date is set to the current time and the Deactivation Date to a time in the near future. Repeated Get Attribute calls are performed to verify that the state is first 'Active', then subsequently 'Deactivated'. Then issue a Re-key request, including an Offset value of zero leading to the Activation Date of the replacement key to be set to the same value as the Initial Date of the replacement key. Verify from the response that the Activation Date and Deactivation Date attributes were set correctly (if they are not returned, issue a Get Attribute request). Do a Get Attribute operation to verify that the state of the new key is 'Active'. To clean up, both keys are deleted.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic 
Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic 
Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic 
Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
```

```
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-92-11-rekeyKey"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="606051f958d79b0f"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Activation Date"/>
        <AttributeValue type="DateTime" value="$NOW"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="7cb12802f6a52cf1"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Deactivation Date"/>
        <AttributeValue type="DateTime" value="$NOW+120"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:27+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="606051f958d79b0f"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Activation Date"/>
        <AttributeValue type="DateTime" value="$NOW"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="7cb12802f6a52cf1"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Deactivation Date"/>
        <AttributeValue type="DateTime" value="$NOW+120"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 2
# [REPEAT] until GetAttributes response shows State changed to
Deactivated
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
```

```
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Active"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Deactivated"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Offset type="Interval" value="0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Activation Date"/>
      <AttributeName type="TextString" value="Deactivation Date"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Activation Date"/>
        <AttributeValue type="DateTime" value="$NOW"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Deactivation Date"/>
        <AttributeValue type="DateTime" value="$NOW+120"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Active"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="955dfbb9abbec308"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" value="CessationOfOperation"/>
      </RevocationReason>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="6ce5ea0c8334b076"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="955dfbb9abbec308"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="6ce5ea0c8334b076"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.16 TC-93-11 - Existing Key Compromised, Re-key with Same Life-cycle

Create a new symmetric key with the Activation Date in the past. Do a Get Attribute operation on the State attribute to verify the key is 'Active'. Then revoke the key as compromised, verify that the state has changed to 'Compromised'. Create a replacement key using Re-key with the offset set to '0' to indicate that the times are to be copied from the existing key. Do a Get Attribute operation to verify that the state of the new key is 'Active'. To clean up, both keys are deleted.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Activation Date"/>
          <AttributeValue type="DateTime" value="$NOW"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-93-11-rekeyKey"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
```

```
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Active"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" value="KeyCompromise"/>
      </RevocationReason>
      <CompromiseOccurrenceDate type="DateTime" value="$NOW"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Compromised"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Active"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
```

```
      <BatchCount type="Integer" value="1"/>
    </RequestHeader>
    <BatchItem>
      <Operation type="Enumeration" value="Destroy"/>
      <RequestPayload>
        <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      </RequestPayload>
    </BatchItem>
  </RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="c95bbfd6ad466474"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" value="CessationOfOperation"/>
      </RevocationReason>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="4e6a3e943e1dda87"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="c95bbfd6ad466474"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="4e6a3e943e1dda87"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.17 TC-94-11 - Create Key, Re-key with New Life-cycle

Create a symmetric key with a specific name, then use Locate to find the key. After using Re-key to create a new key, verify that the name was removed from the existing key and copied to the new key. To clean up, both keys are deleted.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-94-11-rekeyKey"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
```

```
          <NameValue type="TextString" value="TC-94-11-rekeyKey"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Activation Date"/>
          <AttributeValue type="DateTime" value="$NOW-31536000"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Process Start Date"/>
          <AttributeValue type="DateTime" value="$NOW-31536000"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Protect Stop Date"/>
          <AttributeValue type="DateTime" value="$NOW+31536000"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Deactivation
```

```
Date"/>
          <AttributeValue type="DateTime" value="$NOW+31536000"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Name"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
```

```
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Activation Date"/>
      <AttributeName type="TextString" value="Process Start Date"/>
      <AttributeName type="TextString" value="Protect Stop Date"/>
      <AttributeName type="TextString" value="Deactivation Date"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Activation Date"/>
        <AttributeValue type="DateTime" value="$NOW-31536000"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Process Start Date"/>
        <AttributeValue type="DateTime" value="$NOW-31536000"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Protect Stop Date"/>
        <AttributeValue type="DateTime" value="$NOW+31536000"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Deactivation Date"/>
        <AttributeValue type="DateTime" value="$NOW+31536000"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-94-11-rekeyKey"/>
          <NameType type="Enumeration"
value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="64bf984d81eee045"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" value="CessationOfOperation"/>
      </RevocationReason>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="6e140354775e324d"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="64bf984d81eee045"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="6e140354775e324d"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.18 TC-95-11 - Obtain Lease for Expired Key

Create a symmetric key with a specific name and obtain a lease. Revoke the key with state 'Compromised' and re-key the key. Try to obtain a lease on the old key which fails due to a server policy which does not allow giving out leases for compromised keys. Locate the new key with the original name. Get the new key and obtain a lease.

```
# TIME 0
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-95-11-rekeyKey"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Activation Date"/>
          <AttributeValue type="DateTime" value="$NOW"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="ef5a0e97a29b32034c66efbf26ad3e42"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 2
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ObtainLease"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ObtainLease"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <LeaseTime type="Interval" value="0"/>
      <LastChangeDate type="DateTime" value="$NOW"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" value="KeyCompromise"/>
      </RevocationReason>
      <CompromiseOccurrenceDate type="DateTime" value="$NOW"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ObtainLease"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
```

```
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ObtainLease"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="PermissionDenied"/>
    <ResultMessage type="TextString" value="CO is in state Compromised, no lease given"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-95-11-rekeyKey"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="525d4b0bbb66bcb538029d49a6f569a5"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
# [Client-A]
<RequestMessage>
  <RequestHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ObtainLease"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ObtainLease"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <LeaseTime type="Interval" value="0"/>
      <LastChangeDate type="DateTime" value="$NOW"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="e00004346ea64da4"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" value="CessationOfOperation"/>
      </RevocationReason>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="0376ca8cdcc8a2f1"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="e00004346ea64da4"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="0376ca8cdcc8a2f1"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.19 TC-101-11 - Create a Key, Archive and Recover it

Create a symmetric key with a specified name, then use Locate to find the key and get the key. Archive the key (asynchronous operation, use Poll until it completes) and use Get and Locate on it, but both fail (Get returns an error and Locate returns no Unique Identifiers). Add the Storage Status Mask to the Locate-command, indicating to the server to search in both online and archived storage. The Locate then finds the archived key. Recover the key (asynchronous operation, use Poll until it completes) from the archive, then repeat the Get operation which will now succeed.

Since the client is unable to force the server to respond asynchronously, it is possible for a server to respond synchronously to the requests issued at times 3 and 9, in which case the expected responses are the ones shown at times 4 and 10 respectively.

Note: a server may perform Archive and Recover operations synchronously and not require the use of Poll for the client to wait for the operation to complete

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-101-11-archiveKey"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-101-11-archiveKey"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
```

```
      <BatchCount type="Integer" value="1"/>
    </ResponseHeader>
    <BatchItem>
      <Operation type="Enumeration" value="Get"/>
      <ResultStatus type="Enumeration" value="Success"/>
      <ResponsePayload>
        <ObjectType type="Enumeration" value="SymmetricKey"/>
        <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
        <SymmetricKey>
          <KeyBlock>
            <KeyFormatType type="Enumeration" value="Raw"/>
            <KeyValue>
              <KeyMaterial type="ByteString"
value="0b4c9fb659c5ce09ec12c3233d526f45"/>
            </KeyValue>
            <CryptographicAlgorithm type="Enumeration" value="AES"/>
            <CryptographicLength type="Integer" value="128"/>
          </KeyBlock>
        </SymmetricKey>
      </ResponsePayload>
    </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <AsynchronousIndicator type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Archive"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Archive"/>
    <ResultStatus type="Enumeration" value="OperationPending"/>
    <AsynchronousCorrelationValue type="ByteString"
value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
# [REPEAT] until Archive response is returned
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Poll"/>
    <RequestPayload>
      <AsynchronousCorrelationValue type="ByteString" 
value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:30+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Archive"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:32+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="ObjectArchived"/>
    <ResultMessage type="TextString" value="Object is archived"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Archive Date"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:32+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Archive Date"/>
        <AttributeValue type="DateTime" value="2012-04-27T08:14:30+00:00"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
```

```
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-101-11-archiveKey"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:33+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <StorageStatusMask type="Integer" value="ArchivalStorage OnLineStorage"/>
      <Attribute>
```

```
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-101-11-archiveKey"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:33+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <AsynchronousIndicator type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Recover"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:33+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Recover"/>
    <ResultStatus type="Enumeration" value="OperationPending"/>
    <AsynchronousCorrelationValue type="ByteString"
value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
# [REPEAT] until Recover response is returned
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Poll"/>
    <RequestPayload>
      <AsynchronousCorrelationValue type="ByteString"
value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Recover"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 11
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="0b4c9fb659c5ce09ec12c3233d526f45"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 12
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.20 TC-111-11 - Credential, Operation Policy, Destroy Date

Pass a Credential object of type Username and Password in the message header in all requests for identification purposes. Create a symmetric key and set the Operation Policy Name attribute to 'default'. Using another Username and Password Credential, attempt to perform a Get operation batched with a Get Attribute List on the created symmetric key - according to the Default Operation Policy, both these request SHALL fail, and with the Batch Error Continuation Option set to 'Continue', the client SHALL also receive both response payloads. Using the first (correct) Credential, Destroy the object and then get the Destroy Date attribute.

The message exchanges shown in this test case assume that the first Credential (Fred) is valid and the second credential (Barney) is either invalid or does not have access to the newly created key (which should always be true under the 'default' Operation Policy).

Note: a server can elect to not return meta-data for destroyed objects and in those circumstances the Get Attributes operation may fail.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration"
value="UsernameAndPassword"/>
        <CredentialValue>
          <Username type="TextString" value="Fred"/>
          <Password type="TextString" value="password1"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-111-11-key1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Operation Policy Name"/>
          <AttributeValue type="TextString" value="default"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Parameters"/>
          <AttributeValue>
            <BlockCipherMode type="Enumeration" value="CBC"/>
            <PaddingMethod type="Enumeration" value="PKCS5"/>
            <HashingAlgorithm type="Enumeration" value="SHA_1"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration"
value="UsernameAndPassword"/>
        <CredentialValue>
          <Username type="TextString" value="Fred"/>
          <Password type="TextString" value="password1"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <UniqueBatchItemID type="ByteString" value="55d88770e2556dab"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Operation Policy
Name"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="eb864ee01f1f98cd"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="GetAttributes"/>
    <UniqueBatchItemID type="ByteString" value="55d88770e2556dab"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Operation Policy Name"/>
        <AttributeValue type="TextString" value="default"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="eb864ee01f1f98cd"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="30e55f4b230b34ce8afc476c66f8351b"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration" value="UsernameAndPassword"/>
        <CredentialValue>
          <Username type="TextString" value="Barney"/>
          <Password type="TextString" value="secret2"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchErrorContinuationOption type="Enumeration" value="Continue"/>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="4f0e6d3dba3d0495"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <UniqueBatchItemID type="ByteString" value="9b937e7cd50b233b"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="4f0e6d3dba3d0495"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="PermissionDenied"/>
    <ResultMessage type="TextString" value="Access denied"/>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <UniqueBatchItemID type="ByteString" value="9b937e7cd50b233b"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="PermissionDenied"/>
    <ResultMessage type="TextString" value="Access denied"/>
  </BatchItem>
</ResponseMessage>
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration"
value="UsernameAndPassword"/>
        <CredentialValue>
          <Username type="TextString" value="Fred"/>
          <Password type="TextString" value="password1"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration"
value="UsernameAndPassword"/>
        <CredentialValue>
          <Username type="TextString" value="Fred"/>
          <Password type="TextString" value="password1"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Destroy Date"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Destroy Date"/>
        <AttributeValue type="DateTime" value="2012-04-
27T08:14:35+00:00"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.21 TC-112-11 - Device Credential, Operation Policy, Destroy Date

Pass a Credential object of type Device Credential in the message header in all requests for identification purposes. Create a symmetric key and set the Operation Policy Name attribute to 'default'. Using another Credential, attempt to perform a Get operation batched with a Get Attribute List on the created symmetric key. According to the Default Operation Policy, both these request SHALL fail, and with the Batch Error Continuation Option set to 'Continue', the client SHALL also receive both response payloads. Using the first Credential, Destroy the object and get the Destroy Date attribute. The message exchanges shown in this test case assume that the first Credential (devID2233) is valid and the second credential (devID4444) is either invalid or does not have access to the newly created key (which should always be true under the 'default' Operation Policy).

Note: a server can elect to not return meta-data for destroyed objects and in those circumstances the Get Attributes operation may fail.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration" value="Device"/>
        <CredentialValue>
          <DeviceSerialNumber type="TextString"
```

```
value="serNum123456"/>
          <Password type="TextString" value="secret"/>
          <DeviceIdentifier type="TextString" value="devID2233"/>
          <NetworkIdentifier type="TextString" value="netID9000"/>
          <MachineIdentifier type="TextString" value="machineID1"/>
          <MediaIdentifier type="TextString" value="mediaID313"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-112-11-key1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Operation Policy Name"/>
          <AttributeValue type="TextString" value="default"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Parameters"/>
          <AttributeValue>
            <BlockCipherMode type="Enumeration" value="CBC"/>
            <PaddingMethod type="Enumeration" value="PKCS5"/>
            <HashingAlgorithm type="Enumeration" value="SHA_1"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration" value="Device"/>
        <CredentialValue>
          <DeviceSerialNumber type="TextString" value="serNum123456"/>
          <Password type="TextString" value="secret"/>
          <DeviceIdentifier type="TextString" value="devID2233"/>
          <NetworkIdentifier type="TextString" value="netID9000"/>
          <MachineIdentifier type="TextString" value="machineID1"/>
          <MediaIdentifier type="TextString" value="mediaID313"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <UniqueBatchItemID type="ByteString" value="e705e27dc0ba7789"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Operation Policy Name"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="50a7f741a1119826"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <UniqueBatchItemID type="ByteString" value="e705e27dc0ba7789"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Operation Policy Name"/>
        <AttributeValue type="TextString" value="default"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="50a7f741a1119826"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="acfeaffdbdd17d0e63624a22083ee4b6"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <Authentication>
```

```
      <Credential>
        <CredentialType type="Enumeration" value="Device"/>
        <CredentialValue>
          <DeviceSerialNumber type="TextString" value="serNum101010"/>
          <Password type="TextString" value="passwd"/>
          <DeviceIdentifier type="TextString" value="devID4444"/>
          <NetworkIdentifier type="TextString" value="netID9"/>
          <MachineIdentifier type="TextString" value="machineID1111"/>
          <MediaIdentifier type="TextString" value="mediaID0000"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchErrorContinuationOption type="Enumeration" value="Continue"/>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="1154049d742c498e"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <UniqueBatchItemID type="ByteString" value="8ae55c6e91d97b05"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="1154049d742c498e"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="PermissionDenied"/>
    <ResultMessage type="TextString" value="Access denied"/>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <UniqueBatchItemID type="ByteString" value="8ae55c6e91d97b05"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="PermissionDenied"/>
    <ResultMessage type="TextString" value="Access denied"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration" value="Device"/>
        <CredentialValue>
          <DeviceSerialNumber type="TextString"
value="serNum123456"/>
          <Password type="TextString" value="secret"/>
          <DeviceIdentifier type="TextString" value="devID2233"/>
          <NetworkIdentifier type="TextString" value="netID9000"/>
          <MachineIdentifier type="TextString" value="machineID1"/>
          <MediaIdentifier type="TextString" value="mediaID313"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration" value="Device"/>
        <CredentialValue>
          <DeviceSerialNumber type="TextString" value="serNum123456"/>
          <Password type="TextString" value="secret"/>
          <DeviceIdentifier type="TextString" value="devID2233"/>
          <NetworkIdentifier type="TextString" value="netID9000"/>
          <MachineIdentifier type="TextString" value="machineID1"/>
          <MediaIdentifier type="TextString" value="mediaID313"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Destroy Date"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Destroy Date"/>
        <AttributeValue type="DateTime" value="2012-04-27T08:14:35+00:00"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.22 TC-121-11 - Query, Maximum Response Size

Perform a Query operation, querying the Operations and Objects supported by the server, with a restriction on the Maximum Response Size set in the request header. Since the resulting Query response is too large, an error is returned. Increase the Maximum Response Size, resubmit the Query request, and get a successful response.

Note: the list of object types supported and operations will vary depending on the server implementation. The server can report the Vendor Identification in whatever TextString form the vendor selects. The server may return vendor specific tags in the Server Information structure indicating additional vendor-specific information about the server.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <MaximumResponseSize type="Integer" value="256"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Query"/>
    <RequestPayload>
      <QueryFunction type="Enumeration" value="QueryOperations"/>
      <QueryFunction type="Enumeration" value="QueryObjects"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Query"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="ResponseTooLarge"/>
    <ResultMessage type="TextString" value="Response size: 648,
Maximum Response Size indicated in request: 256"/>
  </BatchItem>
</ResponseMessage>
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <MaximumResponseSize type="Integer" value="2048"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Query"/>
    <RequestPayload>
      <QueryFunction type="Enumeration" value="QueryOperations"/>
      <QueryFunction type="Enumeration" value="QueryObjects"/>
      <QueryFunction type="Enumeration"
value="QueryServerInformation"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Query"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <Operation type="Enumeration" value="Create"/>
      <Operation type="Enumeration" value="CreateKeyPair"/>
      <Operation type="Enumeration" value="Register"/>
      <Operation type="Enumeration" value="ReKey"/>
      <Operation type="Enumeration" value="Certify"/>
      <Operation type="Enumeration" value="ReCertify"/>
      <Operation type="Enumeration" value="Locate"/>
      <Operation type="Enumeration" value="Check"/>
      <Operation type="Enumeration" value="Get"/>
      <Operation type="Enumeration" value="GetAttributes"/>
      <Operation type="Enumeration" value="GetAttributeList"/>
      <Operation type="Enumeration" value="AddAttribute"/>
      <Operation type="Enumeration" value="ModifyAttribute"/>
      <Operation type="Enumeration" value="DeleteAttribute"/>
      <Operation type="Enumeration" value="ObtainLease"/>
      <Operation type="Enumeration" value="GetUsageAllocation"/>
      <Operation type="Enumeration" value="Activate"/>
      <Operation type="Enumeration" value="Revoke"/>
      <Operation type="Enumeration" value="Destroy"/>
      <Operation type="Enumeration" value="Archive"/>
      <Operation type="Enumeration" value="Recover"/>
      <Operation type="Enumeration" value="Query"/>
      <Operation type="Enumeration" value="Cancel"/>
      <Operation type="Enumeration" value="Poll"/>
      <Operation type="Enumeration" value="ReKeyKeyPair"/>
      <Operation type="Enumeration" value="DiscoverVersions"/>
      <ObjectType type="Enumeration" value="Certificate"/>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <ObjectType type="Enumeration" value="Template"/>
      <ObjectType type="Enumeration" value="SecretData"/>
      <VendorIdentification type="TextString" value="SOME-VENDOR-NAME"/>
      <ServerInformation>
      </ServerInformation>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.23 TC-122-11 - Query Vendor Extensions

Query the server for a list and map of vendor extension tags it recognizes.

Note: Extension Type is an Integer as there is no corresponding enumerated type for the Item Type field.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Query"/>
    <RequestPayload>
      <QueryFunction type="Enumeration" value="QueryExtensionList"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Query"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ExtensionInformation>
        <ExtensionName type="TextString" value="ACME LOCATION"/>
      </ExtensionInformation>
      <ExtensionInformation>
        <ExtensionName type="TextString" value="ACME ZIP CODE"/>
      </ExtensionInformation>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Query"/>
    <RequestPayload>
      <QueryFunction type="Enumeration" value="QueryExtensionMap"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Query"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ExtensionInformation>
        <ExtensionName type="TextString" value="ACME LOCATION"/>
        <ExtensionTag type="Integer" value="5548545"/>
        <ExtensionType type="Integer" value="7"/>
      </ExtensionInformation>
      <ExtensionInformation>
        <ExtensionName type="TextString" value="ACME ZIP CODE"/>
        <ExtensionTag type="Integer" value="5548546"/>
        <ExtensionType type="Integer" value="2"/>
      </ExtensionInformation>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.24 TC-131-11 - Register an Asymmetric Key Pair in PKCS1 Format

Register a private key in the PKCS_1 key format, then register the corresponding public key, also in PKCS_1 format, with the Link attribute pointing to the previously registered private key. Thereafter add the Link attribute to the private key, and perform Locate operations to find the public and private keys using the Link attribute. Get both the private and public keys in PKCS_1 key format, then destroy both the private and the public key.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-131-11-
prikey1"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="308204a50201000282010100ab7f161c0042496ccd6c6d4dadb9199734353
57776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d746483
46d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa
2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b650
89f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c
795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f
91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c281
5c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050
20301000102820100３b12455d53c1816516c518493f6398aafa72b17dfa894db888a
7d48c0a47f62579a4e644f86da711fec850cdd9dbbd17f69a443d2ec1dd60d3c618f
a74cde5fdafabd6baa26eb0a3adb4def6480fb1218cd3b083e252e885b6f0729f98b
2144d2b72293e1b11d73393bc41f75b15ee3d7569b4995ed1a14425da4319b7b26b0
e8fef17c37542ae5c6d5849f87209567f3925a47b016d564859717bc57fcb4522d0a
a49ce816e5be7b3088193236ec9efff140858045b73c5d79baf38f7c67f04c5dcf0e
3806ad982d1259058c3473e847179a878f2c6b3bd968fb99ea46e9185892f3676e78
965c2aed4877ba3917df07c5e927474f19e764ba61dc38d63bf2902818100d5c69c8
c3cdc2464744a793713dafb9f1dbc799ff96423fecd3cba794286bce920f4b5c183f
99ee9028db6212c6277c4c8297fcfbce7f7c24ca4c51fc7182fb8f4019fb1d565967
4c5cbe6d5fa99205134176０cd00735729a070a9e54d342beba8ef47ee82d3a01b04c
ec4a00d4ddb41e35116fc221e854b43a696c0e6419b1b02818100cd5ea7702789064
b673540cbff09356ad80bc3d592812eba47610b9fac6aecefe22acae438459cda74e
59653d88c04189d34399bf5b14b920e34ef38a7d09fe69593396e8fe735e6f0a6ae4
990401041d8a406b6fd86a1161e45f95a3eaa5c1012e6662e44f15f335ac971e1766
b2bb9c985109974141b44d37e1e319820a55f02818100b2871237bf9fad38c3316ab
7877a6a868063e542a7186d431e8d27c19ac0414584033942e9ff6e2973bb7b2d8b0
e94ad1ee82158108fbc8664517a5a467fb963014bd5dcc2b4fb087c23039d11920db
e22fd9f16b4d89e23225cd455adbaf32ef43f185864a36d630309d6853f7714b39aa
e1ebee3938f87c2707e178c739f9f028181009690bed14b2afaa26d986d592231ee2
7d71d49065bd2ba1f78157e20229881fd9d23227d0f8479eaefa922fd75d5b16b1a5
61fa6680b040ca0bdce650b23b917a4b1bb7983a74fad70e1c305cbec2bff1a85a72
```

```
6a1d90260e4f1084f518234dcd3fe770b9520215bd543bb6a4117718754676a34171
666a79f26e79c149c5aa102818100a0c985a0a0a791a659f99731134c44f37b2e520
a2cea35800ad27241ed360dfde6e8ca614f12047fd08b76ac4d13c056a0699e2f98a
1cac91011294d71208f4abab33ba87aa0517f415baca88d6bac006088fa601d34941
7e1f0c9b23affa4d496618dbc024986ed690bbb7b025768ff9df8ac15416f489f812
9c32341a8b44f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PrivateKeyLink"/>
            <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
```

```
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-131-11-
pubkey1"/>
        </Attribute>
      </TemplateAttribute>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3082010a0282010100ab7f161c0042496ccd6c6d4dadb919973435357776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010001"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PublicKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PublicKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PrivateKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <KeyFormatType type="Enumeration" value="PKCS_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
```

```
value="308204a502010002820101000ab7f161c0042496ccd6c6d4dadb9199734353
57776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d746483
46d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa
2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b650
89f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c
795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f
91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c281
5c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050
203010001028201003b12455d53c1816516c518493f6398aafa72b17dfa894db888a
7d48c0a47f62579a4e644f86da711fec850cdd9dbbd17f69a443d2ec1dd60d3c618f
a74cde5fdafabd6baa26eb0a3adb4def6480fb1218cd3b083e252e885b6f0729f98b
2144d2b72293e1b11d73393bc41f75b15ee3d7569b4995ed1a14425da4319b7b26b0
e8fef17c37542ae5c6d5849f87209567f3925a47b016d564859717bc57fcb4522d0a
a49ce816e5be7b3088193236ec9efff140858045b73c5d79baf38f7c67f04c5dcf0e
3806ad982d1259058c3473e847179a878f2c6b3bd968fb99ea46e9185892f3676e78
965c2aed4877ba3917df07c5e927474f19e764ba61dc38d63bf2902818100d5c69c8
c3cdc2464744a793713dafb9f1dbc799ff96423fecd3cba794286bce920f4b5c183f
99ee9028db6212c6277c4c8297fcfbce7f7c24ca4c51fc7182fb8f4019fb1d565967
4c5cbe6d5fa992051341760cd00735729a070a9e54d342beba8ef47ee82d3a01b04c
ec4a00d4ddb41e35116fc221e854b43a696c0e6419b1b02818100cd5ea7702789064
b673540cbff09356ad80bc3d592812eba47610b9fac6aecefe22acae438459cda74e
59653d88c04189d34399bf5b14b920e34ef38a7d09fe69593396e8fe735e6f0a6ae4
990401041d8a406b6fd86a1161e45f95a3eaa5c1012e6662e44f15f335ac971e1766
b2bb9c985109974141b44d37e1e319820a55f02818100b2871237bf9fad38c3316ab
7877a6a868063e542a7186d431e8d27c19ac0414584033942e9ff6e2973bb7b2d8b0
e94ad1ee82158108fbc8664517a5a467fb963014bd5dcc2b4fb087c23039d11920db
e22fd9f16b4d89e23225cd455adbaf32ef43f185864a36d630309d6853f7714b39aa
e1ebee3938f87c2707e178c739f9f028181009690bed14b2afaa26d986d592231ee2
7d71d49065bd2ba1f78157e20229881fd9d23227d0f8479eaefa922fd75d5b16b1a5
61fa6680b040ca0bdce650b23b917a4b1bb7983a74fad70e1c305cbec2bff1a85a72
6a1d90260e4f1084f518234dcd3fe770b9520215bd543bb6a4117718754676a34171
666a79f26e79c149c5aa102818100a0c985a0a0a791a659f99731134c44f37b2e520
a2cea35800ad27241ed360dfde6e8ca614f12047fd08b76ac4d13c056a0699e2f98a
1cac91011294d71208f4abab33ba87aa0517f415baca88d6bac006088fa601d34941
7e1f0c9b23affa4d496618dbc024986ed690bbb7b025768ff9df8ac15416f489f812
9c32341a8b44f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PrivateKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_1"/>
      <KeyFormatType type="Enumeration" value="PKCS_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3082010a0282010100ab7f161c0042496ccd6c6d4dadb9199734353577760
03acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b
8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89
b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f981
35b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328
abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013
da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612
a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010
001"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PublicKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
```

```
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.25 TC-132-11 - Register an Asymmetric Key Pair and a Corresponding X509 Certificate

Register a public/private key pair in the PKCS_1 key format and a corresponding X509 certificate. Add the appropriate links between the registered objects. Make sure the certificate was registered and the attributes set correctly by listing and retrieving the attributes. Get the keys and certificate, and finally destroy all the registered objects.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-132-11-
pubkey1"/>
        </Attribute>
      </TemplateAttribute>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3082010a0282010100ab7f161c0042496ccd6c6d4dadb919973435357776O
03acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b
8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89
b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f981
35b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328
abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013
da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612
a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010
001"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PublicKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PublicKeyLink"/>
            <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-132-11-prikey1"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
```

```
            <KeyMaterial type="ByteString"
value="308204a50201000282010100ab7f161c0042496ccd6c6d4dadb919973435357776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010001028201003b12455d53c1816516c518493f6398aafa72b17dfa894db888a7d48c0a47f62579a4e644f86da711fec850cdd9dbbd17f69a443d2ec1dd60d3c618fa74cde5fdafabd6baa26eb0a3adb4def6480fb1218cd3b083e252e885b6f0729f98b2144d2b72293e1b11d73393bc41f75b15ee3d7569b4995ed1a14425da4319b7b26b0e8fef17c37542ae5c6d5849f87209567f3925a47b016d564859717bc57fcb4522d0aa49ce816e5be7b3088193236ec9efff140858045b73c5d79baf38f7c67f04c5dcf0e3806ad982d1259058c3473e847179a878f2c6b3bd968fb99ea46e9185892f3676e78965c2aed4877ba3917df07c5e927474f19e764ba61dc38d63bf2902818100d5c69c8c3cdc2464744a793713dafb9f1dbc799ff96423fecd3cba794286bce920f4b5c183f99ee9028db6212c6277c4c8297fcfbce7f7c24ca4c51fc7182fb8f4019fb1d5659674c5cbe6d5fa992051341760cd00735729a070a9e54d342beba8ef47ee82d3a01b04cec4a00d4ddb41e35116fc221e854b43a696c0e6419b1b02818100cd5ea7702789064b673540cbff09356ad80bc3d592812eba47610b9fac6aecefe22acae438459cda74e59653d88c04189d34399bf5b14b920e34ef38a7d09fe69593396e8fe735e6f0a6ae4990401041d8a406b6fd86a1161e45f95a3eaa5c1012e6662e44f15f335ac971e1766b2bb9c985109974141b44d37e1e319820a55f02818100b2871237bf9fad38c3316ab7877a6a868063e542a7186d431e8d27c19ac0414584033942e9ff6e2973bb7b2d8b0e94ad1ee82158108fbc8664517a5a467fb963014bd5dcc2b4fb087c23039d11920dbe22fd9f16b4d89e23225cd455adbaf32ef43f185864a36d630309d6853f7714b39aae1ebee3938f87c2707e178c739f9f028181009690bed14b2afaa26d986d592231ee27d71d49065bd2ba1f78157e20229881fd9d23227d0f8479eaefa922fd75d5b16b1a561fa6680b040ca0bdce650b23b917a4b1bb7983a74fad70e1c305cbec2bff1a85a726a1d90260e4f1084f518234dcd3fe770b9520215bd543bb6a4117718754676a34171666a79f26e79c149c5aa102818100a0c985a0a0a791a659f99731134c44f37b2e520a2cea35800ad27241ed360dfde6e8ca614f12047fd08b76ac4d13c056a0699e2f98a1cac91011294d71208f4abab33ba87aa0517f415baca88d6bac006088fa601d349417e1f0c9b23affa4d496618dbc024986ed690bbb7b025768ff9df8ac15416f489f8129c32341a8b44f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="Certificate"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Verify Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PublicKeyLink"/>
            <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-132-11-
cert1"/>
        </Attribute>
      </TemplateAttribute>
      <Certificate>
        <CertificateType type="Enumeration" value="X_509"/>
        <CertificateValue type="ByteString"
value="30820312308201faa003020102020101300d06092a864886f70d010105050
0303b310b3009060355040613025553310d300b060355040a130445535431 0e300
c060355040b13054f41534953310d300b060355040313044b4d4950301e170d31303
1313031323335393539 5a170d3230313130313233353935395a303b310b300906035
504061302555331 0d300b060355040a130445535431 0e300c060355040b13054f4
1534953310d300b060355040313044b4d495030820122300d06092a864886f70d010
10105000382010f003082010a0282010100ab7f161c0042496ccd6c6d4dadb919973
435357776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74
648346d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc62
67fa2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8
b65089f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295
353c795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142c
b76f91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1
c2815c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f
605020301 0001a321301f301d0603551d0e0416041404e57bd2c431b2e816e180a19
```

```
823fac858273f6b300d06092a864886f70d01010505000382010100a876adbc6c8e0
ff017216e195fea76bff61a567c9a13dc50d13fec12a4273c441547cfabcb5d61d99
1e966319df72c0d41ba826a45112ff26089a2344f4d71cf7c921b4bdfaef1600d1ba
aa15336057e014b8b496d4fae9e8a6c1da9aeb6cbc960cbf2fae77f587ec4bb28204
5338845b88dd9aeea53e482a36e734e4f5f03b9d0dfc4cafc6bb34ea9053e52bd609
ee01e86d9b09fb51120c19834a997b09ce08d79e81311762f974bb1c8c09186c4d78
933e0db38e905084877e147c78af52fae07192ff166d19fa94a11cc11b27ed050f7a
27fae13b205a574c4ee00aa8bd65d0d7057c985c839ef336a441ed53a53c6b6b696f
1bdeb5f7ea811ebb25a7f86"/>
      </Certificate>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="31f81bfb0f0492bd"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="ba865701c7837be2"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="CertificateLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="31f81bfb0f0492bd"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="ba865701c7837be2"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="CertificateLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="Cryptographic Length"/>
      <AttributeName type="TextString" value="Certificate Length"/>
      <AttributeName type="TextString" value="X.509 Certificate Identifier"/>
      <AttributeName type="TextString" value="X.509 Certificate Issuer"/>
      <AttributeName type="TextString" value="X.509 Certificate Subject"/>
      <AttributeName type="TextString" value="Digital Signature Algorithm"/>
      <AttributeName type="TextString" value="Fresh"/>
      <AttributeName type="TextString" value="Certificate Issuer"/>
      <AttributeName type="TextString" value="Certificate Type"/>
      <AttributeName type="TextString" value="Certificate Subject"/>
      <AttributeName type="TextString" value="Certificate Identifier"/>
      <AttributeName type="TextString" value="State"/>
      <AttributeName type="TextString" value="Digest"/>
      <AttributeName type="TextString" value="Link"/>
      <AttributeName type="TextString" value="Lease Time"/>
      <AttributeName type="TextString" value="Initial Date"/>
      <AttributeName type="TextString" value="Unique Identifier"/>
      <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
      <AttributeName type="TextString" value="Object Type"/>
      <AttributeName type="TextString" value="Last Change Date"/>
      <AttributeName type="TextString" value="x-ID"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="Certificate Identifier"/>
      <AttributeName type="TextString" value="Certificate Issuer"/>
      <AttributeName type="TextString" value="Certificate Subject"/>
      <AttributeName type="TextString" value="Certificate Type"/>
      <AttributeName type="TextString" value="Digital Signature Algorithm"/>
      <AttributeName type="TextString" value="Cryptographic Length"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Identifier"/>
        <AttributeValue>
          <Issuer type="TextString" value="CN=KMIP,OU=OASIS,O=TEST,C=US"/>
          <SerialNumber type="TextString" value="1"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Issuer"/>
        <AttributeValue>
          <CertificateIssuerDistinguishedName type="TextString" value="CN=KMIP,OU=OASIS,O=TEST,C=US"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Subject"/>
        <AttributeValue>
          <CertificateSubjectDistinguishedName type="TextString" value="CN=KMIP,OU=OASIS,O=TEST,C=US"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Type"/>
        <AttributeValue type="Enumeration" value="X_509"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Digital Signature Algorithm"/>
        <AttributeValue type="Enumeration" value="SHA_1WithRSAEncryption"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Length"/>
        <AttributeValue type="Integer" value="2048"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <KeyFormatType type="Enumeration" value="PKCS_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="308204a50201000282010100ab7f161c0042496ccd6c6d4dadb9199734353
57776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d746483
46d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa
2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b650
89f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c
795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f
91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c281
5c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050
20301000102820100 3b12455d53c1816516c518493f6398aafa72b17dfa894db888a
7d48c0a47f62579a4e644f86da711fec850cdd9dbbd17f69a443d2ec1dd60d3c618f
a74cde5fdafabd6baa26eb0a3adb4def6480fb1218cd3b083e252e885b6f0729f98b
2144d2b72293e1b11d73393bc41f75b15ee3d7569b4995ed1a14425da4319b7b26b0
e8fef17c37542ae5c6d5849f87209567f3925a47b016d564859717bc57fcb4522d0a
a49ce816e5be7b3088193236ec9efff140858045b73c5d79baf38f7c67f04c5dcf0e
3806ad982d1259058c3473e847179a878f2c6b3bd968fb99ea46e9185892f3676e78
965c2aed4877ba3917df07c5e927474f19e764ba61dc38d63bf2902818100d5c69c8
c3cdc2464744a793713dafb9f1dbc799ff96423fecd3cba794286bce920f4b5c183f
99ee9028db6212c6277c4c8297fcfbce7f7c24ca4c51fc7182fb8f4019fb1d565967
4c5cbe6d5fa992051341760cd00735729a070a9e54d342beba8ef47ee82d3a01b04c
ec4a00d4ddb41e35116fc221e854b43a696c0e6419b1b02818100cd5ea7702789064
b673540cbff09356ad80bc3d592812eba47610b9fac6aecefe22acae438459cda74e
59653d88c04189d34399bf5b14b920e34ef38a7d09fe69593396e8fe735e6f0a6ae4
990401041d8a406b6fd86a1161e45f95a3eaa5c1012e6662e44f15f335ac971e1766
b2bb9c985109974141b44d37e1e319820a55f02818100b2871237bf9fad38c3316ab
7877a6a868063e542a7186d431e8d27c19ac0414584033942e9ff6e2973bb7b2d8b0
e94ad1ee82158108fbc8664517a5a467fb963014bd5dcc2b4fb087c23039d11920db
e22fd9f16b4d89e23225cd455adbaf32ef43f185864a36d630309d6853f7714b39aa
e1ebee3938f87c2707e178c739f9f028181009690bed14b2afaa26d986d592231ee2
7d71d49065bd2ba1f78157e20229881fd9d23227d0f8479eaefa922fd75d5b16b1a5
61fa6680b040ca0bdce650b23b917a4b1bb7983a74fad70e1c305cbec2bff1a85a72
6a1d90260e4f1084f518234dcd3fe770b9520215bd543bb6a4117718754676a34171
666a79f26e79c149c5aa102818100a0c985a0a0a791a659f99731134c44f37b2e520
a2cea35800ad27241ed360dfde6e8ca614f12047fd08b76ac4d13c056a0699e2f98a
1cac91011294d71208f4abab33ba87aa0517f415baca88d6bac006088fa601d34941
7e1f0c9b23affa4d496618dbc024986ed690bbb7b025768ff9df8ac15416f489f812
9c32341a8b44f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PrivateKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <KeyFormatType type="Enumeration" value="PKCS_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3082010a0282010100ab7f161c0042496ccd6c6d4dadb919973435357776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010001"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PublicKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="Certificate"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
      <Certificate>
        <CertificateType type="Enumeration" value="X_509"/>
        <CertificateValue type="ByteString"
value="30820312308201faa003020102020101300d06092a864886f70d010105050
0303b310b3009060355040613025553310d300b060355040a130454455354310e300
c060355040b13054f41534953310d300b060355040313044b4d4950301e170d31303
131303132333539353959a170d3230313130313233353935395a303b310b300906035
5040613025553310d300b060355040a130454455354310e300c060355040b13054f4
1534953310d300b060355040313044b4d495030820122300d06092a864886f70d010
10105000382010f003082010a0282010100ab7f161c0042496ccd6c6d4dadb919973
435357776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74
648346d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc62
67fa2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8
b65089f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295
353c795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142c
b76f91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1
c2815c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f
605020301 0001a321301f301d0603551d0e0416041404e57bd2c431b2e816e180a19
823fac858273f6b300d06092a864886f70d01010505000382010100a876adbc6c8e0
```

```
ff017216e195fea76bff61a567c9a13dc50d13fec12a4273c441547cfabcb5d61d99
1e966319df72c0d41ba826a45112ff26089a2344f4d71cf7c921b4bdfaef1600d1ba
aa15336057e014b8b496d4fae9e8a6c1da9aeb6cbc960cbf2fae77f587ec4bb28204
5338845b88dd9aeea53e482a36e734e4f5f03b9d0dfc4cafc6bb34ea9053e52bd609
ee01e86d9b09fb51120c19834a997b09ce08d79e81311762f974bb1c8c09186c4d78
933e0db38e905084877e147c78af52fae07192ff166d19fa94a11cc11b27ed050f7a
27fae13b205a574c4ee00aa8bd65d0d7057c985c839ef336a441ed53a53c6b6b696f
1bdeb5f7ea811ebb25a7f86"/>
      </Certificate>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 11
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
```

```
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.26 TC-133-11 - Create, Re-key Key Pair

Create a public/private key pair on the server and retrieve the keys in PKCS_1 format. Re-key the key pair and retrieve the new public/private key pair in transparent format. To verify that the links are set correctly, the Link attributes are retrieved. Finally, all the keys are destroyed.

Note: a server is not required to support conversion between key formats so returning keys in Transparent form when registerd in PKCS_1 may not be supported.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="CreateKeyPair"/>
    <RequestPayload>
      <CommonTemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="RSA"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Length"/>
          <AttributeValue type="Integer" value="2048"/>
        </Attribute>
      </CommonTemplateAttribute>
      <PrivateKeyTemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-133-11-
privateKey1"/>
            <NameType type="Enumeration"
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
      </PrivateKeyTemplateAttribute>
      <PublicKeyTemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-133-11-publicKey1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
      </PublicKeyTemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:39+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="CreateKeyPair"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <PrivateKeyUniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <PublicKeyUniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <KeyFormatType type="Enumeration" value="PKCS_1"/>
    </RequestPayload>
  </BatchItem>
```

```
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:39+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="308204a30201000282010100b0612bccafdd11d41819a274526d68dbf3c3f
25667c402a0e0e8e4cce007ea6b6ea53699e8bd7ccab7d5ae66c00b28fd678b81ba1
d4e841c3a36caf13f852004633f80d840be7aad9bcdeabde11514b6ab3bce602e113
05cf5e9c34ebee32c3c468b9b146502738c0ae82e63ab8bd1fc4db0c6a09eb0c9f6e
01b9cc8d22317aedab328209a1dc5d2ce8529d81521c41730c1c8c76249d233e8909
6ca44dfeb469e3532bb90d6691c6932d0c63dbb7647c6e64337b719a1f100b1366cf
f3bbb213b17c716beb2c9ad88b3b76abacc378c4898636480fff1108e1fa1e7573c0
96606e21b18a05245ebd976701bb676dc2962a328d39385ef7571bc48ae134b37410
20301000102820100 37b71a3cd838bf0efe65ea9950085b9d4f4d5059d70165cb280
0a975c636f9e7e1d5b27fbfb34b9e459fec2d6cf0998c228f40f567988bc6d6e4c40
a9d04126f1062d8f276d134b36e8a0762df9ce72424c70993fc3955cba7aaa61553d
b32f7ff58ce2e0d124f29a7b05c2703e370fb80171d47539988d2c14c37a4802cb1a
7f5685bcc78865480ca4e5d367cafc8b533e610620f94f54a082effc4c4e50998410
dd32fa7dedae895200b56437fe177f47d1b373b5e8e0c62f64b3a19e5918be83e90a
1bbe195a4b516f3ceae6db35b0e4427858631dcbce6b1e49cf12345297df41e54d2c
bc2834c34e37bb92888e4659d232a4f3d22edeb9bff43b7881c7902818100eab3861
80dec393c70c8b00c5fae6a10e6b620ae82e5096ce11bf4c539a015165a7481227e9
1492748159d85317d1e81b780cca1cf19630a10987b940663a2496a4ead2ed4bfb70
17dc813e7a49017aa278b8ac1381ef27fde54ed4a1ee1e74812dcaee514cb9d48590
eb3972b26ba2f21de0aab64cfc1dbcba32561f5f31d6f02818100c062be5756e93eb
e005be752a5b7be2d35b342e483ff266cc9f595edbcffff603c8e03dcd9350a19fab
f434077f9543088132f0e843c2da6fe4f1cedee49a5eb9a8aea1219a41c1db392521
96137a041def9edcff43aa9280d90be137dbf48777e6055695f58fcc9cd6b07924fd
ab47a5553f5ad7b82d52553f6ec3f647ffe4f0281804221676d2baf1dc97bf5f034e
c58d6a6007bdce58f183df9a1cc20c1d9a4d38c42dc84ee553f569f6cde3a4e274d9
be4ecf1abb70405a1345accbc354f3f8fa0a4059b2290eb9c031d8fdc9bee70735a8
c5df330d241560ed574948fc7f7db1521cb70b43791cfb56cf28983d4b2cacf30f9c
183dd99f4839bf3523b31f3d89d0281806cbe63c0928bbcbf410cb1b071a36e87b77
6e034b2b7a24c93cb913794414f64625613b0ddc5b134061bde33ae9cec0d929ce55
85b3e78bf8fb7c02e6d268bf6a4a028b69a6fbcc4bd1fd3f02c9778aa43131a6d152
ba339d491201f7c5086f1a429679dec1b2ca814c88ebb11101a3b9bc79d72b601b9e
12398cae8fa31aed90281810099777cd45f0d1a862888eb2cf7ac14d22d75b88e99a
df66f15cccbd29979bf5eaa90bb8c29b29a8be1257425a9a2db2f493df4a740c7fbc
138e4b4d80f24e7ca11d63528d900ba2dd5c44da59e2d601544ec92681161f17b86c
838694a49a978f76ff05287bfce0704c6f3f9fa87551d0cf1a970b2cb130b5320783
```

```
a36ea8613"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PrivateKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <KeyFormatType type="Enumeration" value="PKCS_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:39+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3082010a0282010100b0612bccafdd11d41819a274526d68dbf3c3f25667c
402a0e0e8e4cce007ea6b6ea53699e8bd7ccab7d5ae66c00b28fd678b81ba1d4e841
c3a36caf13f852004633f80d840be7aad9bcdeabde11514b6ab3bce602e11305cf5e
9c34ebee32c3c468b9b146502738c0ae82e63ab8bd1fc4db0c6a09eb0c9f6e01b9cc
8d22317aedab328209a1dc5d2ce8529d81521c41730c1c8c76249d233e89096ca44d
feb469e3532bb90d6691c6932d0c63dbb7647c6e64337b719a1f100b1366cff3bbb2
13b17c716beb2c9ad88b3b76abacc378c4898636480fff1108e1fa1e7573c096606e
21b18a05245ebd976701bb676dc2962a328d39385ef7571bc48ae134b3741020301000
001"/>
```

```
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PublicKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKeyKeyPair"/>
    <RequestPayload>
      <PrivateKeyUniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKeyKeyPair"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <PrivateKeyUniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <PublicKeyUniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="f409f9adc43f836f"/>
    <RequestPayload>
      <MaximumItems type="Integer" value="1"/>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-133-11-privateKey1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PrivateKey"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="396c4d8b5bde0667"/>
    <RequestPayload>
      <KeyFormatType type="Enumeration" value="TransparentRSAPrivateKey"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="f409f9adc43f836f"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="396c4d8b5bde0667"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration"
```

```
value="TransparentRSAPrivateKey"/>
          <KeyValue>
            <KeyMaterial>
              <Modulus type="BigInteger"
value="0000000000000000eab4492bbb2364359408c57b8af47003572c81aaed719
ed92d9b13c741cc196b717d1c98f0c250580e37ac3ade11a7cd1aaede3a0424b53d3
3200510ce7eef71ded7e96e585d1d7ba3767a8dbfad4d2701b5831a34552a827fc2c
d398e659fd5063e1dfd28a994b0e6a7449bbad8dcf40e22943b841aa9e58519fa357
5b4409abfeb57f5723b45f7ce4e5277a2d0acccbcd49608d6ff8a7c933d4d70a9e8c
8df24829b58404a5af1b0d4c8668c35e3549e28204f2249bfc13b20c05ab0252c975
e53f604f68c6e498c7b14adb72debac91221a8eb1ad581080144eb8900b4bf9d9792
be37ec6191ad183e2b60b80174eecb66ca08c3ac07f51ba1c056130ec69"/>
              <PrivateExponent type="BigInteger"
value="42e22587e4c86d2227916855907f9ffc13b7872c228622725960bbfe286df
5407d12de376744b8889f64961c20747f911f6d7dbea2b7a33e51776a7a239e60b5d
e7f40f2451423f6bbda638a497925675c41519f0212d30e65422a21a0c6ad0993c1d
7e1f0d8829af6dfebd94521cfb56ce1c5c4401d2915531cd804ac0a35ee57d2a43ff
d7671aeaad0ab090f17f8419073445ac6fb218bd3c7c5beb9f3e7bf41e4e5f9632d8
492eb0cb2ada41083e040535ae409ad866d1998a0335f253cda2d21a95b2feebacee
64b969aaccab322fa0ecbc75c3f0c15c267dbf431abedecae191b72000b612e41e65
eb93c9f08eef67740b84ba32d9c5697ed91e1c8ccd1"/>
              <PublicExponent type="BigInteger"
value="0000000000010001"/>
              <P type="BigInteger"
value="0000000000000000f88c737435b8b3f5bdb2b2eb73dd5a665e2ee56c64e05
5169038f754ed3021d3e72ae82234dacd4a5fa12edeb4874b70c5915bba4571bef55
964389d8a4b8a79b628771bb4d634fbd18a27ab5fb6973309c4af9e27d269b1c4054
b62012d1c52847e3679f71f91cf7ff6b646c9edaafe5b46845fc1190fa0ef80b8a45
de63973"/>
              <Q type="BigInteger"
value="0000000000000000f1bd952150d189707c316486f2054296802305055 81b4
0ed503901bef82cec4e2a0a564c58365e8c82b7d34a0305d407194b1d15c273015d1
2129699062673228 27303b276d0c7585a21ee6758a74e95bfecc5b544686325754e5
d2602f0d5734c58f870aa2ca00e08122e940e4d6d0e11611d47966482df8845b8ff8
8d1fbb3"/>
              <PrimeExponentP type="BigInteger"
value="0000000000000000e9717156eac62a305b15a63ac33e5a13dfce0829c0ad7
afd904410f9b1350df0ab247f96f131b8b36c1245a562c5d833793cc77cb290dd1c2
ff393c1540d1368b1905c1ea7c0b14efb45d9707a9b5273db6ee2cb96f767d2511be
feb82d34dd0ab24a821f1dbb2e5c3788347058db696e43fdd40da6aa16534ce1f9e3
19b74c5"/>
              <PrimeExponentQ type="BigInteger"
value="0000000000000000eb6294819a364dc3afca507e6dcedd65ba635f1233166
6842d6734e204b989671adc71e768c5980eed819d4525e858ea88a07133ace15ae48
b227a6d8a658a1a823707d49088fe72736132c882b4767aae2518e64633f6c69490b
776b9ca53ad2f1c3add4976a66ac34521019d639adae5e5502352b7900fa49b6f65b
28df4ad"/>
              <CRTCoefficient type="BigInteger"
value="0000000000000000cc75a52cab58eb65878acf7c19070c0a495d5376f40b8
6531b98b1e3b44e28d39db55898db8aa317ce214814efdd00c1d234d4c27168710a1
a68cfdae310f1a56e17e1a51f43d069137beeb7a6aeef4da2b3dfde54d222e24c772
09dc5c8c831b8f09f816d3ee628e76e93bae2594229a59b36ea1f507be2db99ae358
896956e"/>
            </KeyMaterial>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
```

```
        </KeyBlock>
      </PrivateKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="5df01d7748d64a16"/>
    <RequestPayload>
      <MaximumItems type="Integer" value="1"/>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-133-11-publicKey1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PublicKey"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="7c7f588280a61c24"/>
    <RequestPayload>
      <KeyFormatType type="Enumeration" value="TransparentRSAPublicKey"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="5df01d7748d64a16"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="7c7f588280a61c24"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="TransparentRSAPublicKey"/>
          <KeyValue>
            <KeyMaterial>
              <Modulus type="BigInteger" value="0000000000000000eab4492bbb2364359408c57b8af47003572c81aaed719ed92d9b13c741cc196b717d1c98f0c250580e37ac3ade11a7cd1aaede3a0424b53d33200510ce7eef71ded7e96e585d1d7ba3767a8dbfad4d2701b5831a34552a827fc2cd398e659fd5063e1dfd28a994b0e6a7449bbad8dcf40e22943b841aa9e58519fa3575b4409abfeb57f5723b45f7ce4e5277a2d0acccbcd49608d6ff8a7c933d4d70a9e8c8df24829b58404a5af1b0d4c8668c35e3549e28204f2249bfc13b20c05ab0252c975e53f604f68c6e498c7b14adb72debac91221a8eb1ad581080144eb8900b4bf9d9792be37ec6191ad183e2b60b80174eecb66ca08c3ac07f51ba1c056130ec69"/>
              <PublicExponent type="BigInteger" value="0000000000010001"/>
            </KeyMaterial>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PublicKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="Link"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_3"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="ReplacedObjectLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_3"/>
      <AttributeName type="TextString" value="Link"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_3"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="ReplacedObjectLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Link"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration"
value="ReplacementObjectLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Link"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="ReplacementObjectLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 11
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 12
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 13
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.27 TC-134-11 - Register Key Pair, Certify and Re-certify Public Key

Register a public/private key pair on the server. Request the server to have a certificate created using the Certify operation. Retrieve the certificate and its attributes, then execute the Re-certify operation to re-certify the public key. Finally, destroy all the objects.

The new KMIP 1.1 certificate DN attributes are retrieved as are the original (deprecated) KMIP 1.0 certificate DN attributes.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic 
Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-134-11-
pubkey1"/>
        </Attribute>
      </TemplateAttribute>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString" 
value="3082010a0282010100ab7f161c0042496ccd6c6d4dadb919973435357776О
03acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b
8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89
b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f981
35b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328
abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013
da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612
a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010
001"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PublicKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PublicKeyLink"/>
            <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-134-11-prikey1"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="308204a50201000282010100ab7f161c0042496ccd6c6d4dadb9199734353
```

```
57776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d746483
46d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa
2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b650
89f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c
795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f
91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c281
5c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050
203010001028201003b12455d53c1816516c518493f6398aafa72b17dfa894db888a
7d48c0a47f62579a4e644f86da711fec850cdd9dbbd17f69a443d2ec1dd60d3c618f
a74cde5fdafabd6baa26eb0a3adb4def6480fb1218cd3b083e252e885b6f0729f98b
2144d2b72293e1b11d73393bc41f75b15ee3d7569b4995ed1a14425da4319b7b26b0
e8fef17c37542ae5c6d5849f87209567f3925a47b016d564859717bc57fcb4522d0a
a49ce816e5be7b3088193236ec9efff140858045b73c5d79baf38f7c67f04c5dcf0e
3806ad982d1259058c3473e847179a878f2c6b3bd968fb99ea46e9185892f3676e78
965c2aed4877ba3917df07c5e927474f19e764ba61dc38d63bf2902818100d5c69c8
c3cdc2464744a793713dafb9f1dbc799ff96423fecd3cba794286bce920f4b5c183f
99ee9028db6212c6277c4c8297fcfbce7f7c24ca4c51fc7182fb8f4019fb1d565967
4c5cbe6d5fa992051341760cd00735729a070a9e54d342beba8ef47ee82d3a01b04c
ec4a00d4ddb41e35116fc221e854b43a696c0e6419b1b02818100cd5ea7702789064
b673540cbff09356ad80bc3d592812eba47610b9fac6aecefe22acae438459cda74e
59653d88c04189d34399bf5b14b920e34ef38a7d09fe69593396e8fe735e6f0a6ae4
990401041d8a406b6fd86a1161e45f95a3eaa5c1012e6662e44f15f335ac971e1766
b2bb9c985109974141b44d37e1e319820a55f02818100b2871237bf9fad38c3316ab
7877a6a868063e542a7186d431e8d27c19ac0414584033942e9ff6e2973bb7b2d8b0
e94ad1ee82158108fbc8664517a5a467fb963014bd5dcc2b4fb087c23039d11920db
e22fd9f16b4d89e23225cd455adbaf32ef43f185864a36d630309d6853f7714b39aa
e1ebee3938f87c2707e178c739f9f028181009690bed14b2afaa26d986d592231ee2
7d71d49065bd2ba1f78157e20229881fd9d23227d0f8479eaefa922fd75d5b16b1a5
61fa6680b040ca0bdce650b23b917a4b1bb7983a74fad70e1c305cbec2bff1a85a72
6a1d90260e4f1084f518234dcd3fe770b9520215bd543bb6a4117718754676a34171
666a79f26e79c149c5aa102818100a0c985a0a0a791a659f99731134c44f37b2e520
a2cea35800ad27241ed360dfde6e8ca614f12047fd08b76ac4d13c056a0699e2f98a
1cac91011294d71208f4abab33ba87aa0517f415baca88d6bac006088fa601d34941
7e1f0c9b23affa4d496618dbc024986ed690bbb7b025768ff9df8ac15416f489f812
9c32341a8b44f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Certify"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <CertificateRequestType type="Enumeration" value="PKCS_10"/>
      <CertificateRequest type="ByteString"
value="308202813082016902010030303c310b30090603550406130255533110d300b0
60355040a130441434d45310d300b060355040b13044b4d4950310f300d060355040
31306436c69656e7430820122300d06092a864886f70d01010105000382010f00308
2010a0282010100ab7f161c0042496ccd6c6d4dadb919973435357776003acf54b7a
f1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b8d71812b20
5387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89b9bee9e60a
1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f98135b1c67b70
1675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328abf70e1b42
e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013da809e9c1b
7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612a29a82d73a
1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010001a000300
d06092a864886f70d01010505000382010100 2d90f5492c3df1771df4e87e1087cb9
52197319a9696e2d588efda580d8d3304427b997cd921ad7c674aea413fba85fd61e
6a481de9ab2e8a4ff43c02655015d3437f783fe0c781519cd08ffd3c007c7fade963
2fe5659e2cac35bd6aaf3e13dc18097d996df01b66fc5e26ca109380863a209125cc
0fd79533f327fa1cad444d89d3ff81b92a91428c469c846090fd1324846e12d01671
962c332a7826152daaf486cc867185c2e27caf2f009898db07fe4b45c518192aa493
d8f8c0198db67f90672ab6de05a08032941377f473d80716d85adc6182003ab34942
302214eb3895f15403f2616adfd6bb5e6aa47fa38c9dfc73f4de80ddb91bdb04d21c
82ba6"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Verify Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-134-11-
certificate1"/>
            <NameType type="Enumeration"
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Certify"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="Certificate"/>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_2"/>
      <Certificate>
        <CertificateType type="Enumeration" value="X_509"/>
        <CertificateValue type="ByteString" 
value="30820277308201e0a003020102020900 9bba23d1b6a48f97300d06092a864
886f70d01010b0500303b310b3009060355040613025553310d300b060355040a130
454455354310e300c060355040b13054f41534953310d300b060355040313044b4d4
950301e170d3133303631383038353535375a170d3134303631383038353535375a3
03c310b3009060355040613025553310d300b060355040a130441434d45310d300b0
60355040b13044b4d4950310f300d06035504031306436c69656e7430820122300d0
```

```
6092a864886f70d01010105000382010f003082010a0282010100ab7f161c0042496
ccd6c6d4dadb919973435357776003acf54b7af1e440afb80b64a8755f8002cfeba6
b184540a2d66086d74648346d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176
b7957c422e7d03fc6267fa2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a
41100f8aa214900df8b65089f98135b1c67b701675abdbc7d5721aac9d14a7f081fc
ec80b64e8a0ecc8295353c795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d2112
6eba8da7d0ca34142cb76f91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c
8d7cce8946a9ac99b1c2815c3612a29a82d73a1f99374fe30e54951662a6eda29c6f
c411335d5dc7426b0f6050203010001300d06092a864886f70d01010b05000381810
0c4fe08d5bd74239648c7faabaed0978527ac01a0fd17b8a65c0d92501c4eab3f487
511062eafedc1024e74dc6bfdaae7f66d1fdda7574f6db3f03c6de83586b52c593a4
671001a0531bc43eff4849880b07924b7a9a0236d5d64d82d4d8e42dcd3a72c80728
804f9ba7f0e80c3fe3eb09cb3ed7fbfbb2167c99be513ff9db0b6"/>
      </Certificate>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="Cryptographic
Length"/>
      <AttributeName type="TextString" value="Certificate Length"/>
      <AttributeName type="TextString" value="X.509 Certificate
Identifier"/>
      <AttributeName type="TextString" value="X.509 Certificate
Issuer"/>
      <AttributeName type="TextString" value="X.509 Certificate
```

```
Subject"/>
      <AttributeName type="TextString" value="Digital Signature Algorithm"/>
      <AttributeName type="TextString" value="Fresh"/>
      <AttributeName type="TextString" value="Certificate Issuer"/>
      <AttributeName type="TextString" value="Certificate Type"/>
      <AttributeName type="TextString" value="Certificate Subject"/>
      <AttributeName type="TextString" value="Certificate Identifier"/>
      <AttributeName type="TextString" value="State"/>
      <AttributeName type="TextString" value="Digest"/>
      <AttributeName type="TextString" value="Link"/>
      <AttributeName type="TextString" value="Lease Time"/>
      <AttributeName type="TextString" value="Initial Date"/>
      <AttributeName type="TextString" value="Unique Identifier"/>
      <AttributeName type="TextString" value="Name"/>
      <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
      <AttributeName type="TextString" value="Object Type"/>
      <AttributeName type="TextString" value="Last Change Date"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="Certificate Identifier"/>
      <AttributeName type="TextString" value="Certificate Issuer"/>
      <AttributeName type="TextString" value="Certificate Subject"/>
      <AttributeName type="TextString" value="Certificate Type"/>
      <AttributeName type="TextString" value="Digital Signature Algorithm"/>
      <AttributeName type="TextString" value="Cryptographic Length"/>
      <AttributeName type="TextString" value="Certificate Length"/>
      <AttributeName type="TextString" value="X.509 Certificate Identifier"/>
      <AttributeName type="TextString" value="X.509 Certificate Issuer"/>
      <AttributeName type="TextString" value="X.509 Certificate Subject"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Identifier"/>
        <AttributeValue>
          <Issuer type="TextString" value="CN=KMIP,OU=OASIS,O=TEST,C=US"/>
          <SerialNumber type="TextString" value="9BBA23D1B6A48F97"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Issuer"/>
        <AttributeValue>
          <CertificateIssuerDistinguishedName type="TextString" value="CN=KMIP,OU=OASIS,O=TEST,C=US"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Subject"/>
        <AttributeValue>
          <CertificateSubjectDistinguishedName type="TextString" value="CN=Client,OU=KMIP,O=ACME,C=US"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Type"/>
        <AttributeValue type="Enumeration" value="X_509"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Digital Signature Algorithm"/>
        <AttributeValue type="Enumeration" value="SHA_256WithRSAEncryption"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Length"/>
        <AttributeValue type="Integer" value="2048"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Length"/>
        <AttributeValue type="Integer" value="635"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="X.509 Certificate 
Identifier"/>
        <AttributeValue>
          <IssuerDistinguishedName type="ByteString" 
value="303b310b3009060355040613025553310d300b060355040a1304544553543
10e300c060355040b13054f41534953310d300b060355040313044b4d4950"/>
          <CertificateSerialNumber type="ByteString" 
value="0209009bba23d1b6a48f97"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="X.509 Certificate 
Issuer"/>
        <AttributeValue>
          <IssuerDistinguishedName type="ByteString" 
value="303b310b3009060355040613025553310d300b060355040a1304544553543
10e300c060355040b13054f41534953310d300b060355040313044b4d4950"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="X.509 Certificate 
Subject"/>
        <AttributeValue>
          <SubjectDistinguishedName type="ByteString" 
value="303c310b3009060355040613025553310d300b060355040a130441434d453
10d300b060355040b13044b4d4950310f300d06035504031306436c69656e74"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReCertify"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_2"/>
      <CertificateRequestType type="Enumeration" value="PKCS_10"/>
      <CertificateRequest type="ByteString" 
value="30820281308201690201003030c310b3009060355040613025553310d300b0
60355040a130441434d45310d300b060355040b13044b4d4950310f300d060355040
31306436c69656e7430820122300d06092a864886f70d01010105000382010f00308
2010a0282010100ab7f161c0042496ccd6c6d4dadb919973435357776003acf54b7a
f1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b8d71812b20
5387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89b9bee9e60a
1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f98135b1c67b70
```

```
1675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328abf70e1b42
e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013da809e9c1b
7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612a29a82d73a
1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010001a000300
d06092a864886f70d01010505000382010100 2d90f5492c3df1771df4e87e1087cb9
52197319a9696e2d588efda580d8d3304427b997cd921ad7c674aea413fba85fd61e
6a481de9ab2e8a4ff43c02655015d3437f783fe0c781519cd08ffd3c007c7fade963
2fe5659e2cac35bd6aaf3e13dc18097d996df01b66fc5e26ca109380863a209125cc
0fd79533f327fa1cad444d89d3ff81b92a91428c469c846090fd1324846e12d01671
962c332a7826152daaf486cc867185c2e27caf2f009898db07fe4b45c518192aa493
d8f8c0198db67f90672ab6de05a08032941377f473d80716d85adc6182003ab34942
302214eb3895f15403f2616adfd6bb5e6aa47fa38c9dfc73f4de80ddb91bdb04d21c
82ba6"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Verify Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-134-11-
certificate2"/>
            <NameType type="Enumeration"
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReCertify"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_3"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Link"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Link"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="CertificateLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="Link"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="ReplacementObjectLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 11
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
      <AttributeName type="TextString" value="Link"/>
      <AttributeName type="TextString" value="Certificate Identifier"/>
      <AttributeName type="TextString" value="Name"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="ReplacedObjectLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Identifier"/>
        <AttributeValue>
          <Issuer type="TextString" value="CN=KMIP,OU=OASIS,O=TEST,C=US"/>
          <SerialNumber type="TextString" value="CF77F7A23282BC12"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-134-11-certificate1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-134-11-certificate2"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
```

```
</ResponseMessage>
```

```
# TIME 12
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 13
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 14
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 15
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_3"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_3"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.28 TC-141-11 - Key Wrapping using AES Key Wrap and No Encoding

Register a 128-bit AES key encryption key (KEK) with the Cryptographic Usage Mask attribute set to Wrap and the Cryptographic Parameters specifying NIST Key Wrap as the Block Cipher Mode. Subsequently, register another 128-bit AES data key (DEK). Retrieve the DEK wrapped using the NIST Key Wrap algorithm and the KEK. The Cryptographic Usage Mask Attribute Name is specified, indicating to the server that this attribute is to be wrapped together with the key material. The Encoding Option field is omitted, which means that the default TTLV-encoding is used. Finally, destroy both keys to return the server to the initial state.

The key material for both the KEK and the DEK are from the test vectors specified in Section 4.6 of [NISTKeyWrap].

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-141-11-key1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="WrapKey"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Parameters"/>
          <AttributeValue>
            <BlockCipherMode type="Enumeration" value="NISTKeyWrap"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Activation Date"/>
          <AttributeValue type="DateTime" value="$NOW-3600"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="000102030405060708090a0b0c0d0e0f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
```

```
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-141-11-key2"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="00112233445566778899aabbccddeeff"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <KeyWrappingSpecification>
        <WrappingMethod type="Enumeration" value="Encrypt"/>
        <EncryptionKeyInformation>
          <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
          <CryptographicParameters>
            <BlockCipherMode type="Enumeration" value="NISTKeyWrap"/>
          </CryptographicParameters>
        </EncryptionKeyInformation>
        <EncodingOption type="Enumeration" value="NoEncoding"/>
      </KeyWrappingSpecification>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue type="ByteString"
```

```
value="1fa68b0a8112b447aef34bd8fb5a7b829d3e862371d2cfe5"/>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
          <KeyWrappingData>
            <WrappingMethod type="Enumeration" value="Encrypt"/>
            <EncryptionKeyInformation>
              <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
              <CryptographicParameters>
                <BlockCipherMode type="Enumeration" value="NISTKeyWrap"/>
              </CryptographicParameters>
            </EncryptionKeyInformation>
            <EncodingOption type="Enumeration" value="NoEncoding"/>
          </KeyWrappingData>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
```

```
            <KeyMaterial type="ByteString" value="00112233445566778899aabbccddeeff"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" value="Unspecified"/>
      </RevocationReason>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.29 TC-142-11 - Key Wrapping using AES Key Wrap with Attributes

Register a 128-bit AES key encryption key (KEK) with the Cryptographic Usage Mask attribute set to Wrap and the Cryptographic Parameters specifying NIST Key Wrap as the Block Cipher Mode. Subsequently, register another 128-bit AES data key (DEK). Retrieve the data key wrapped using the NIST Key Wrap algorithm and the KEK. The Encoding Option is set to No Encoding, which means that only the key material is wrapped as opposed to the whole TTLV-encoded Key Value structure being wrapped. Finally, destroy both keys to return the server to the initial state. The key material for both the KEK and the DEK are from the test vectors specified in Section 4.6 of [NISTKeyWrap].

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-142-11-key1"/>
            <NameType type="Enumeration"
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="WrapKey"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Parameters"/>
          <AttributeValue>
            <BlockCipherMode type="Enumeration"
value="NISTKeyWrap"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Activation Date"/>
          <AttributeValue type="DateTime" value="$NOW-3600"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="000102030405060708090a0b0c0d0e0f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-142-11-key2"/>
            <NameType type="Enumeration"
```

```
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="00112233445566778899aabbccddeeff"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <KeyWrappingSpecification>
        <WrappingMethod type="Enumeration" value="Encrypt"/>
        <EncryptionKeyInformation>
          <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
          <CryptographicParameters>
            <BlockCipherMode type="Enumeration" value="NISTKeyWrap"/>
          </CryptographicParameters>
        </EncryptionKeyInformation>
        <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
      </KeyWrappingSpecification>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue type="ByteString" value="0dc0f8cb416e7b4422d85805d3dd80e49c6c75f763d1be99748de568e4eecdc05b94b1c1946fd3def14cfe184daada0daf07c93e038ceb9f501bdd8a82c7d6b33152dbf9d415924b9f13f6cb75ff880ab09dc862e473f74bdaf9398ec7695d41"/>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
          <KeyWrappingData>
            <WrappingMethod type="Enumeration" value="Encrypt"/>
            <EncryptionKeyInformation>
              <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
              <CryptographicParameters>
                <BlockCipherMode type="Enumeration" value="NISTKeyWrap"/>
              </CryptographicParameters>
            </EncryptionKeyInformation>
          </KeyWrappingData>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
```

```
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="00112233445566778899aabbccddeeff"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
```

```
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" value="Unspecified"/>
      </RevocationReason>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.30 TC-151-11 - Locate a Fresh Object from the Default Group

Locate a single fresh object from the default object group. Perform a Get Attribute to retrieve the value of the Fresh attribute to make sure that the key is fresh. Get the object (the kind of object returned depends on the server policy), and get the Fresh attribute again to verify that the object is no longer fresh. Finally, destroy the object. This test case illustrates only one possible behavior related to the default group. In this test case, it is assumed that the server has fresh objects available in the default group, or that it creates a new object on-the-fly as a consequence of the Locate request. It is also assumed that no other client retrieves the object after the Locate but before the batched Get Attributes request, thereby toggling the value of the Fresh attribute.

```
# TIME 0
<RequestMessage>  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="1e766d8a95d6e5d1"/>
    <RequestPayload>
      <MaximumItems type="Integer" value="1"/>
      <ObjectGroupMember type="Enumeration"
value="GroupMemberFresh"/>
      <Attribute>
        <AttributeName type="TextString" value="Object Group"/>
        <AttributeValue type="TextString" value="default"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <UniqueBatchItemID type="ByteString" value="8650f83be5373722"/>
    <RequestPayload>
      <AttributeName type="TextString" value="Fresh"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="1e766d8a95d6e5d1"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <UniqueBatchItemID type="ByteString" value="8650f83be5373722"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Fresh"/>
        <AttributeValue type="Boolean" value="true"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="7fe09d434868ae14a0021ac19330f8d9226790d680e519f8ac25f42d72f60
f0c"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Fresh"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Fresh"/>
        <AttributeValue type="Boolean" value="false"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.31 TC-152-11 - Client-side Group Management

Register two symmetric keys, both with the same (non-default) Object Group name specified and the Fresh attribute set to true. Get the Fresh attribute from both keys to make sure it was set. Perform three batched Locate and Get requests to get a fresh key from the group. The first two requests should return both the registered keys, whereas the third request should return no key. To clean up, destroy both keys. This test case assumes that the server supports and sets the Fresh attribute when requested to do so by the client.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Length"/>
          <AttributeValue type="Integer" value="256"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Object Group"/>
          <AttributeValue type="TextString" value="ClientFreshTest"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Fresh"/>
          <AttributeValue type="Boolean" value="true"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-152-11-key1"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="000102030405060708090a0b0c0d0e0f101112131415161718191a1b1c1d1e1f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="256"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Object Group"/>
          <AttributeValue type="TextString" value="ClientFreshTest"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Fresh"/>
          <AttributeValue type="Boolean" value="true"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-152-11-key2"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="00112233445566778899aabbccddeeff000102030405060708090a0b0c0d0e0f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Fresh"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Fresh"/>
        <AttributeValue type="Boolean" value="true"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Fresh"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Fresh"/>
        <AttributeValue type="Boolean" value="true"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="294fb5e3e93f8ecc"/>
    <RequestPayload>
      <MaximumItems type="Integer" value="1"/>
      <ObjectGroupMember type="Enumeration" value="GroupMemberFresh"/>
      <Attribute>
        <AttributeName type="TextString" value="Object Group"/>
        <AttributeValue type="TextString" value="ClientFreshTest"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="9da79a935d4e4ae6"/>
    <RequestPayload>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="294fb5e3e93f8ecc"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="9da79a935d4e4ae6"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="000102030405060708090a0b0c0d0e0f101112131415161718191a1b1c1d1e1f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="85e3e21d14d6df1d"/>
    <RequestPayload>
      <MaximumItems type="Integer" value="1"/>
      <ObjectGroupMember type="Enumeration" value="GroupMemberFresh"/>
      <Attribute>
        <AttributeName type="TextString" value="Object Group"/>
        <AttributeValue type="TextString" value="ClientFreshTest"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="40feae5ec1bda875"/>
    <RequestPayload>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="85e3e21d14d6df1d"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="40feae5ec1bda875"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="00112233445566778899aabbccddeeff000102030405060708090a0b0c0d0e0f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="657339bdf375bfa2"/>
    <RequestPayload>
      <MaximumItems type="Integer" value="1"/>
      <ObjectGroupMember type="Enumeration"
value="GroupMemberFresh"/>
      <Attribute>
        <AttributeName type="TextString" value="Object Group"/>
        <AttributeValue type="TextString" value="ClientFreshTest"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="5713c4911444b36e"/>
    <RequestPayload>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="657339bdf375bfa2"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="5713c4911444b36e"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="ItemNotFound"/>
    <ResultMessage type="TextString" value="NOT_FOUND"/>
    </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.32 TC-153-11 - Default Object Group Member

This test case exercises the 'default' Object Group Member flag in the Locate request. Three keys are created on the server and put into the same group (the Object Group attribute is set to the same value for all keys). Thereafter, the client performs four batched Locate and Get requests, asking for the default object from the group. This test case assumes that the server policy is such that it serves objects from the group in a round-robin fashion. The pointer to the default object is advanced each time an object is retrieved using a Get request. The first three times Locate and Get is executed, the three keys are returned one after the other. When Locate and Get is executed for the fourth time, the first key is again returned. Finally, all keys are destroyed.

Note: there is no requirement for a server to implement support for any round-robin based allocation; this test case illustrates a server which supports such a policy.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="3"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <UniqueBatchItemID type="ByteString" value="75e8bdb337aec40e"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
```

```
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="256"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Object Group"/>
          <AttributeValue type="TextString" value="RoundRobinTestGroup"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-153-11-key1"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <UniqueBatchItemID type="ByteString" value="ac0e6e56e8d99f66"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="256"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Object Group"/>
          <AttributeValue type="TextString" value="RoundRobinTestGroup"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-153-11-key2"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <UniqueBatchItemID type="ByteString" value="77e87d356ba09da1"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="256"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Object Group"/>
          <AttributeValue type="TextString" value="RoundRobinTestGroup"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-153-11-key3"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="3"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <UniqueBatchItemID type="ByteString" value="75e8bdb337aec40e"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <UniqueBatchItemID type="ByteString" value="ac0e6e56e8d99f66"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <UniqueBatchItemID type="ByteString" value="77e87d356ba09da1"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="99e7a6ea0125bb67"/>
    <RequestPayload>
      <MaximumItems type="Integer" value="1"/>
      <ObjectGroupMember type="Enumeration"
value="GroupMemberDefault"/>
      <Attribute>
        <AttributeName type="TextString" value="Object Group"/>
        <AttributeValue type="TextString"
value="RoundRobinTestGroup"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="0efd9c2e346ee1cb"/>
    <RequestPayload>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="99e7a6ea0125bb67"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="0efd9c2e346ee1cb"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="bd13da8bce07ea6b89c4d110827bf6a8478cf95edca9bbc278ab04f4cbeecff0"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="0303428f37f17b8d"/>
    <RequestPayload>
      <MaximumItems type="Integer" value="1"/>
      <ObjectGroupMember type="Enumeration" value="GroupMemberDefault"/>
      <Attribute>
        <AttributeName type="TextString" value="Object Group"/>
        <AttributeValue type="TextString" value="RoundRobinTestGroup"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="dae46b60d9b6459b"/>
    <RequestPayload>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="0303428f37f17b8d"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="dae46b60d9b6459b"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="430bfb0cbc273e15326e3a23965f7704a13af37a642c37026c9a59694c83b
7a3"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="863c27d7a0d3da5e"/>
    <RequestPayload>
      <MaximumItems type="Integer" value="1"/>
      <ObjectGroupMember type="Enumeration" value="GroupMemberDefault"/>
      <Attribute>
        <AttributeName type="TextString" value="Object Group"/>
        <AttributeValue type="TextString" value="RoundRobinTestGroup"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="c4617b3205e96fb2"/>
    <RequestPayload>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="863c27d7a0d3da5e"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="c4617b3205e96fb2"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="a51b38e400168a25f2f122d7b8543a00daf022e61677a08a33a834f5f52c3097"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="f1ce9893ee5bde19"/>
    <RequestPayload>
      <MaximumItems type="Integer" value="1"/>
      <ObjectGroupMember type="Enumeration" value="GroupMemberDefault"/>
      <Attribute>
        <AttributeName type="TextString" value="Object Group"/>
        <AttributeValue type="TextString" value="RoundRobinTestGroup"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="9a18dd11cc6ce394"/>
    <RequestPayload>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="f1ce9893ee5bde19"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="9a18dd11cc6ce394"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="bd13da8bce07ea6b89c4d110827bf6a8478cf95edca9bbc278ab04f4cbeecff0"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchErrorContinuationOption type="Enumeration" value="Continue"/>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="3"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="f4cf0a5614786eb7"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="dd55da10ebe91928"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="18334af52fee87fa"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="3"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="f4cf0a5614786eb7"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="dd55da10ebe91928"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="18334af52fee87fa"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.33 TC-161-11 - Discover Versions

Exercise the Discover Versions operation in different ways in order to find out which versions a server supports, as well as to get a list of versions supported by both client and server.

This test case shows the expected responses from a KMIP 1.2 server that supports versions 1.1 and 1.0, with 1.1 being the preferred version.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DiscoverVersions"/>
    <RequestPayload>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2011-12-01T08:46:15+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DiscoverVersions"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="1"/>
      </ProtocolVersion>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="0"/>
      </ProtocolVersion>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DiscoverVersions"/>
    <RequestPayload>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="0"/>
      </ProtocolVersion>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2011-06-24T12:52:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="DiscoverVersions"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="0"/>
      </ProtocolVersion>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DiscoverVersions"/>
    <RequestPayload>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="1"/>
      </ProtocolVersion>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2011-12-01T08:46:15+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DiscoverVersions"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="1"/>
      </ProtocolVersion>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DiscoverVersions"/>
    <RequestPayload>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="9"/>
        <ProtocolVersionMinor type="Integer" value="31"/>
      </ProtocolVersion>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2011-12-01T08:46:15+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DiscoverVersions"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.34 TC-171-11 - Handling of Attributes and Attribute Index Values

This test case illustrates the changes in Attribute and Attribute Index handling introduced in KMIP-1.1. A symmetric key is created on the server, and two Name attributes and the Contact Information attribute is specified for the key. A Get Attributes request containing the Object Type attribute name twice is sent, but this operation fails since a single Attribute Name cannot be specified more than once in a Get Attributes request. The Object Type Attribute is then requested once, and this request succeeds. Thereafter, the Contact Information Attribute is modified, with the Attribute Index value of 0 specified. The Name attribute is deleted without specifying the Attribute Index which succeeds (which would have failed under KMIP-1.0). Finally, the created key is destroyed.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
```

```
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="256"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-171-11-name1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-171-11-name2"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Contact Information"/>
          <AttributeValue type="TextString" value="admin@localhost"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Object Type"/>
      <AttributeName type="TextString" value="Object Type"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="InvalidMessage"/>
    <ResultMessage type="TextString" value="Attribute Name specified more than once: Object Type"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Object Type"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Contact Information"/>
        <AttributeIndex type="Integer" value="0"/>
        <AttributeValue type="TextString" value="donald@localhost"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Contact
Information"/>
        <AttributeValue type="TextString" value="donald@localhost"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Name"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-171-11-name1"/>
          <NameType type="Enumeration"
value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.35 TC-181-11 - Digests of Symmetric Keys

Exercise the Digest attribute by registering two symmetric keys with the same key material but using different Key Format Type. The Digest Value for the key with the Key Format Type set to Transparent Symmetric Key is calculated on the TTLV-encoded Key Material structure, whereas the Digest Value for the key registered in the Raw Key Format Type is calculated on the raw Key Material Byte String. The server calculates the value of the mandatory Digest attribute instance using the Key Format Type used by the client when registering the keys. Thereafter, the client asks the server to create a symmetric key using the Create operation. In this situation, it is up to the server to choose what Key Format Type of the created key it uses to calculate the Digest Value.

Note: This test case assumes a server that does not compute any additional Digest attributes using another Hashing Algorithm and/or Key Format Type. A server is permitted to provide multiple Digest attributes.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Length"/>
          <AttributeValue type="Integer" value="256"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-181-11-key1"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="00001111222233334444555566667777888899999aaaabbbbccccddddeeeef
fff"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Digest"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Digest"/>
        <AttributeValue>
          <HashingAlgorithm type="Enumeration" value="SHA_256"/>
          <DigestValue type="ByteString" value="6c064fe051add11edc07727b594eb48711df843e08445bba2cd786bc16bc58e8"/>
          <KeyFormatType type="Enumeration" value="Raw"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="256"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-181-11-key2"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="TransparentSymmetricKey"/>
          <KeyValue>
            <KeyMaterial>
              <Key type="ByteString" value="00001111222233334444555566667777888899999aaaabbbbccccddddeeeeffff"/>
            </KeyMaterial>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
```

```
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Digest"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Digest"/>
        <AttributeValue>
          <HashingAlgorithm type="Enumeration" value="SHA_256"/>
          <DigestValue type="ByteString" value="499ce96ff6f5e19fe9fe7a2fe4c3e92b88db0001a4e8df28d9966856b6c4b87c"/>
          <KeyFormatType type="Enumeration" value="TransparentSymmetricKey"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="256"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-181-11-key3"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="Digest"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <Attribute>
        <AttributeName type="TextString" value="Digest"/>
        <AttributeValue>
          <HashingAlgorithm type="Enumeration" value="SHA_256"/>
          <DigestValue type="ByteString" value="314b223505091db03325c638a6016cf7080d3b116eb3f4896b6d24d4ec2215f8"/>
          <KeyFormatType type="Enumeration" value="Raw"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 6
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <KeyFormatType type="Enumeration" value="Raw"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="c1a99ac4716d4ea787d40b449d7b816f0ce82772b463cbf3a042b3f8e81e7bb7"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
```

```
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.36 TC-182-11 - Digests of RSA Private Keys

Exercise the Digest attribute by registering two RSA private keys with the same key material but using different Key Format Type. The Digest Value for the key with the Key Format Type set to Transparent RSA Private Key is calculated on the TTLV-encoded Key Material structure, whereas the Digest Value for the key registered in the PKCS_1 Key Format Type is calculated on the Key Material Byte String. The server calculates the value of the mandatory Digest attribute instance using the Key Format Type used by the client when registering the keys.

Note: This test case assumes a server that does not compute any additional Digest attributes using another Hashing Algorithm and/or Key Format Type. A server is permitted to provide multiple Digest attributes.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="RSA"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Length"/>
          <AttributeValue type="Integer" value="2048"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-182-11-
prikey1"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="308204a5020100028201000ab7f161c0042496ccd6c6d4dadb9199734353
57776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d746483
46d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa
2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b650
89f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c
795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f
91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c281
5c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050
203010001028201003b12455d53c1816516c518493f6398aafa72b17dfa894db888a
7d48c0a47f62579a4e644f86da711fec850cdd9dbbd17f69a443d2ec1dd60d3c618f
a74cde5fdafabd6baa26eb0a3adb4def6480fb1218cd3b083e252e885b6f0729f98b
2144d2b72293e1b11d73393bc41f75b15ee3d7569b4995ed1a14425da4319b7b26b0
e8fef17c37542ae5c6d5849f87209567f3925a47b016d564859717bc57fcb4522d0a
a49ce816e5be7b3088193236ec9efff140858045b73c5d79baf38f7c67f04c5dcf0e
3806ad982d1259058c3473e847179a878f2c6b3bd968fb99ea46e9185892f3676e78
965c2aed4877ba3917df07c5e927474f19e764ba61dc38d63bf2902818100d5c69c8
c3cdc2464744a793713dafb9f1dbc799ff96423fecd3cba794286bce920f4b5c183f
```

```
99ee9028db6212c6277c4c8297fcfbce7f7c24ca4c51fc7182fb8f4019fb1d565967
4c5cbe6d5fa992051341760cd00735729a070a9e54d342beba8ef47ee82d3a01b04c
ec4a00d4ddb41e35116fc221e854b43a696c0e6419b1b02818100cd5ea7702789064
b673540cbff09356ad80bc3d592812eba47610b9fac6aecefe22acae438459cda74e
59653d88c04189d34399bf5b14b920e34ef38a7d09fe69593396e8fe735e6f0a6ae4
990401041d8a406b6fd86a1161e45f95a3eaa5c1012e6662e44f15f335ac971e1766
b2bb9c985109974141b44d37e1e319820a55f02818100b2871237bf9fad38c3316ab
7877a6a868063e542a7186d431e8d27c19ac0414584033942e9ff6e2973bb7b2d8b0
e94ad1ee82158108fbc8664517a5a467fb963014bd5dcc2b4fb087c23039d11920db
e22fd9f16b4d89e23225cd455adbaf32ef43f185864a36d630309d6853f7714b39aa
e1ebee3938f87c2707e178c739f9f028181009690bed14b2afaa26d986d592231ee2
7d71d49065bd2ba1f78157e20229881fd9d23227d0f8479eaefa922fd75d5b16b1a5
61fa6680b040ca0bdce650b23b917a4b1bb7983a74fad70e1c305cbec2bff1a85a72
6a1d90260e4f1084f518234dcd3fe770b9520215bd543bb6a4117718754676a34171
666a79f26e79c149c5aa102818100a0c985a0a0a791a659f99731134c44f37b2e520
a2cea35800ad27241ed360dfde6e8ca614f12047fd08b76ac4d13c056a0699e2f98a
1cac91011294d71208f4abab33ba87aa0517f415baca88d6bac006088fa601d34941
7e1f0c9b23affa4d496618dbc024986ed690bbb7b025768ff9df8ac15416f489f812
9c32341a8b44f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
```

```
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Digest"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Digest"/>
        <AttributeValue>
          <HashingAlgorithm type="Enumeration" value="SHA_256"/>
          <DigestValue type="ByteString" value="11110a01ed4589d9987c9ad60368e2b762f2b20c00946e1932c1605a18172f55"/>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="RSA"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="2048"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic 
Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-182-11-
prikey2"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" 
value="TransparentRSAPrivateKey"/>
          <KeyValue>
            <KeyMaterial>
              <Modulus type="BigInteger" 
value="0000000000000000ab7f161c0042496ccd6c6d4dadb919973435357776003
acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b8d
71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89b9
bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f98135
b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328ab
f70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013da
809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612a2
9a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f605"/>
              <PrivateExponent type="BigInteger" 
value="3b12455d53c1816516c518493f6398aafa72b17dfa894db888a7d48c0a47f
62579a4e644f86da711fec850cdd9dbbd17f69a443d2ec1dd60d3c618fa74cde5fda
fabd6baa26eb0a3adb4def6480fb1218cd3b083e252e885b6f0729f98b2144d2b722
93e1b11d73393bc41f75b15ee3d7569b4995ed1a14425da4319b7b26b0e8fef17c37
542ae5c6d5849f87209567f3925a47b016d564859717bc57fcb4522d0aa49ce816e5
be7b3088193236ec9efff140858045b73c5d79baf38f7c67f04c5dcf0e3806ad982d
1259058c3473e847179a878f2c6b3bd968fb99ea46e9185892f3676e78965c2aed48
77ba3917df07c5e927474f19e764ba61dc38d63bf29"/>
              <PublicExponent type="BigInteger" 
value="0000000000010001"/>
              <P type="BigInteger" 
value="0000000000000000d5c69c8c3cdc2464744a793713dafb9f1dbc799ff9642
3fecd3cba794286bce920f4b5c183f99ee9028db6212c6277c4c8297fcfbce7f7c24
ca4c51fc7182fb8f4019fb1d5659674c5cbe6d5fa992051341760cd00735729a070a
9e54d342beba8ef47ee82d3a01b04cec4a00d4ddb41e35116fc221e854b43a696c0e
6419b1b"/>
              <Q type="BigInteger" 
value="0000000000000000cd5ea7702789064b673540cbff09356ad80bc3d592812
eba47610b9fac6aecefe22acae438459cda74e59653d88c04189d34399bf5b14b920
e34ef38a7d09fe69593396e8fe735e6f0a6ae4990401041d8a406b6fd86a1161e45f
95a3eaa5c1012e6662e44f15f335ac971e1766b2bb9c985109974141b44d37e1e319
820a55f"/>
              <PrimeExponentP type="BigInteger" 
value="0000000000000000b2871237bf9fad38c3316ab7877a6a868063e542a7186
d431e8d27c19ac0414584033942e9ff6e2973bb7b2d8b0e94ad1ee82158108fbc866
4517a5a467fb963014bd5dcc2b4fb087c23039d11920dbe22fd9f16b4d89e23225cd
455adbaf32ef43f185864a36d630309d6853f7714b39aae1ebee3938f87c2707e178
c739f9f"/>
              <PrimeExponentQ type="BigInteger" 
```

```
value="00000000000000009690bed14b2afaa26d986d592231ee27d71d49065bd2b
a1f78157e20229881fd9d23227d0f8479eaefa922fd75d5b16b1a561fa6680b040ca
0bdce650b23b917a4b1bb7983a74fad70e1c305cbec2bff1a85a726a1d90260e4f10
84f518234dcd3fe770b9520215bd543bb6a41177187546 76a34171666a79f26e79c1
49c5aa1"/>
              <CRTCoefficient type="BigInteger"
value="0000000000000000a0c985a0a0a791a659f99731134c44f37b2e520a2cea3
5800ad27241ed360dfde6e8ca614f12047fd08b76ac4d13c056a0699e2f98a1cac91
011294d71208f4abab33ba87aa0517f415baca88d6bac006088fa601d349417e1f0c
9b23affa4d496618dbc024986ed690bbb7b025768ff9df8ac15416f489f8129c3234
1a8b44f"/>
            </KeyMaterial>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Digest"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Digest"/>
        <AttributeValue>
          <HashingAlgorithm type="Enumeration" value="SHA_256"/>
          <DigestValue type="ByteString" value="d73bbc51e83332935f912dbfc35c5efc3b7bf8021835ba86b8da4181f74244ac"/>
          <KeyFormatType type="Enumeration" value="TransparentRSAPrivateKey"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:46+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:46+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.37 TC-NP-1-11 - Put

In this test case the client issues a Create request, whereby the server creates a new symmetric key and returns the Unique Identifier. To clean up, the client then performs a Destroy operation to destroy the key.

The server sends Put messages to the client via a separate channel.

```
# TIME 0
# [Client-to-Server]
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-NP-1-11"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
# [Client-to-Server]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:13:47+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 1
# [Server-to-Client]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Put"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <PutFunction type="Enumeration" value="New"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="7546ef6cd37c49806824984477987d1e"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
      <Attribute>
        <AttributeName type="TextString" value="x-ID"/>
        <AttributeValue type="TextString" value="TC-NP-1-11"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Unique Identifier"/>
        <AttributeValue type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Algorithm"/>
        <AttributeValue type="Enumeration" value="AES"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Length"/>
        <AttributeValue type="Integer" value="128"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
        <AttributeValue type="Integer" value="Decrypt Encrypt"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Digest"/>
        <AttributeValue>
```

```
          <HashingAlgorithm type="Enumeration" value="SHA_256"/>
          <DigestValue type="ByteString" value="7549ecda2cd1569974c3748f223fbc947ce9cabce581497522e4b75e9d6ede81"/>
          <KeyFormatType type="Enumeration" value="Raw"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Fresh"/>
        <AttributeValue type="Boolean" value="true"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Initial Date"/>
        <AttributeValue type="DateTime" value="2013-06-26T05:13:48+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Last Change Date"/>
        <AttributeValue type="DateTime" value="2013-06-26T05:13:48+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Lease Time"/>
        <AttributeValue type="Interval" value="3600"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="PreActive"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Server-to-Client]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:13:48+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Put"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
# [Client-to-Server]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Client-to-Server]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:13:48+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.38 TC-NP-2-11 - Notify & Put

This test case tests the import of key using the Register operation. To validate that the registered key is treated the same as a locally created key, an attribute is added to the key and then modified. Finally, the key is destroyed.

The server sends Notify and Put messages to the client via a separate channel.

```
# TIME 0
# [Client-to-Server]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
```

```
Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-NP-2-11"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="1122456789abcdef0123456789abcdef"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Client-to-Server]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
# [Server-to-Client]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Put"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <PutFunction type="Enumeration" value="New"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="1122456789abcdef0123456789abcdef"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
      <Attribute>
        <AttributeName type="TextString" value="x-ID"/>
        <AttributeValue type="TextString" value="TC-NP-2-11"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Unique Identifier"/>
        <AttributeValue type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Algorithm"/>
        <AttributeValue type="Enumeration" value="AES"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Length"/>
        <AttributeValue type="Integer" value="128"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
        <AttributeValue type="Integer" value="Encrypt"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Digest"/>
        <AttributeValue>
          <HashingAlgorithm type="Enumeration" value="SHA_256"/>
          <DigestValue type="ByteString" value="47c01d3851ce2f254d18928526b6126de30cef9a34a4cfbd4648ec3ed21a9e86"/>
          <KeyFormatType type="Enumeration" value="Raw"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Fresh"/>
        <AttributeValue type="Boolean" value="true"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Initial Date"/>
        <AttributeValue type="DateTime" value="2013-06-26T05:54:18+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Last Change Date"/>
        <AttributeValue type="DateTime" value="2013-06-
26T05:54:18+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Lease Time"/>
        <AttributeValue type="Interval" value="3600"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="PreActive"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Server-to-Client]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Put"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
# [Client-to-Server]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="unknown"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Client-to-Server]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="unknown"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
# [Server-to-Client]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Notify"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="unknown"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Last Change Date"/>
        <AttributeValue type="DateTime" value="2013-06-
26T05:54:18+00:00"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Server-to-Client]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Notify"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
# [Client-to-Server]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="third party"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Client-to-Server]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="third party"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
# [Server-to-Client]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Notify"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="third party"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Last Change Date"/>
        <AttributeValue type="DateTime" value="2013-06-26T05:54:18+00:00"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Server-to-Client]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Notify"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
# [Client-to-Server]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Client-to-Server]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
# [Server-to-Client]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Notify"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Last Change Date"/>
        <AttributeValue type="DateTime" value="2013-06-26T05:54:18+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Destroyed"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Server-to-Client]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Notify"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.39 TC-ECC-1-11 - Register an ECC Key Pair

EC recommended curve is P-256 (secp256r1)

- Private Key format ECPrivateKey - http://tools.ietf.org/html/rfc5915

- Public Key format SubjectPublicKeyInfo - http://tools.ietf.org/html/rfc5480

Register a EC private key in the ECPrivateKey key format, then register the corresponding public key, in X.509 (SubjectPublicKeyInfo) format, with the Link attribute pointing to the previously registered private key. Then add the Link attribute to the private key, and perform Locate operations to find the public and private keys using the Link attribute. Get both the private and public keys in default format, then destroy both the private and the public key.

```
-----BEGIN EC PRIVATE KEY-----
MHcCAQEEIJEqDiCPXdc0sYUYR+RlnEWIsW2fO8GtpRDqLJadr570oAoGCCqGSM49
AwEHoUQDQgAEs0Q5L7cqomf4bX2DfeHZbOlg/8Bc7vPx+ibYVGpkQvPBOX6Smq2N
yrJbKCyooc8AvvfLGKD16kRJOjCm0iOyWw==
-----END EC PRIVATE KEY-----

-----BEGIN PUBLIC KEY-----
MFkwEwYHKoZIzj0CAQYIKoZIzj0DAQcDQgAEs0Q5L7cqomf4bX2DfeHZbOlg/8Bc
7vPx+ibYVGpkQvPBOX6Smq2NyrJbKCyooc8AvvfLGKD16kRJOjCm0iOyWw==
-----END PUBLIC KEY-----
```

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-ECC-1-11-prikey1"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="ECPrivateKey"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="30770201010420912a0e208f5dd734b1851847e4659c4588b16d9f3bc1ada510ea2c969daf9ef4a00a06082a8648ce3d030107a14403420004b344392fb72aa267f86d7d837de1d96ce960ffc05ceef3f1fa26d8546a6442f3c1397e929aad8dcab25b282ca8a1cf00bef7cb18a0f5ea44493a30a6d223b25b"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PrivateKeyLink"/>
            <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-ECC-1-11-pubkey1"/>
        </Attribute>
      </TemplateAttribute>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="X_509"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="3059301306072a8648ce3d020106082a8648ce3d03010703420004b344392fb72aa267f86d7d837de1d96ce960ffc05ceef3f1fa26d8546a6442f3c1397e929aad8dcab25b282ca8a1cf00bef7cb18a0f5ea44493a30a6d223b25b"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PublicKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PublicKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PrivateKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="ECPrivateKey"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="30770201010420912a0e208f5dd734b1851847e4659c4588b16d9f3bc1ada
510ea2c969daf9ef4a00a06082a8648ce3d030107a14403420004b344392fb72aa26
7f86d7d837de1d96ce960ffc05ceef3f1fa26d8546a6442f3c1397e929aad8dcab25
b282ca8a1cf00bef7cb18a0f5ea44493a30a6d223b25b"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PrivateKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
       <PublicKey>
      <KeyBlock>
        <KeyFormatType type="Enumeration" value="X_509"/>
        <KeyValue>
          <KeyMaterial type="ByteString"
value="3059301306072a8648ce3d020106082a8648ce3d03010703420004b344392
fb72aa267f86d7d837de1d96ce960ffc05ceef3f1fa26d8546a6442f3c1397e929aa
d8dcab25b282ca8a1cf00bef7cb18a0f5ea44493a30a6d223b25b"/>
        </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
        <CryptographicLength type="Integer" value="256"/>
      </KeyBlock>
      </PublicKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.40 TC-ECC-2-11 - Register an ECC Key Pair in PKCS8 Format

EC recommended curve is P-256 (secp256r1)

- Public Key format SubjectPublicKeyInfo - http://tools.ietf.org/html/rfc5480

Register a EC private key in PKCS8 key format (with passphrase 'secret' using pbeWithSHAAnd3-KeyTripleDES-CBC), then register the corresponding public key, in X.509 (SubjectPublicKeyInfo) format, with the Link attribute pointing to the previously registered private key. Then add the Link attribute to the private key, and perform Locate operations to find the public and private keys using the Link attribute. Get both the private and public keys in default format, then destroy both the private and the public key.

```
-----BEGIN ENCRYPTED PRIVATE KEY-----
MIGxMBwGCiqGSIb3DQEMAQMwDgQIqCAF0cAFXb4CAggABIGQkUySNQqsjKPKtl9y
g/n+qhaBSsolURUH4PBYVpWVUNzqKQhz0MD8/gfBSz1DOU9s7mC97LVgWaEqJTad
sOgPsJL3Z4IUuNTWNOMLZtY3jDz4z4grmyYM2c/aJj9eYVu0Ufp6n1lCsdU6HFpn
urzWFAsRK+Yt+zpokG+raOooO8kIz59Fm30ziZPZF4G74GMM
-----END ENCRYPTED PRIVATE KEY-----

-----BEGIN PUBLIC KEY-----
MFkwEwYHKoZIzj0CAQYIKoZIzj0DAQcDQgAEs0Q5L7cqomf4bX2DfeHZbOlg/8Bc
7vPx+ibYVGpkQvPBOX6Smq2NyrJbKCyooc8AvvfLGKD16kRJOjCm0iOyWw==
-----END PUBLIC KEY-----
```

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-ECC-2-11-
prikey1"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_8"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3081b1301c060a2a864886f70d010c0103300e04082f2656a336573139020
20800048190eadf76e9cee21053b01c53e175b0e8c4d627c17da1b2df47d8cfb35a0
d7252a9a6488660d61235be735178d0ca8548871567c22803d8f6f6009f05c26429c
83ab72d0f2e7e7870befc3ec746f52d0eccafe34b72a791e9535b34f584b96dc1240
34e8a82df0b5c3e70018f2d4745d66ae6da9398234ebda2ca4d02992613cb377b965
1282c4f3fd0c5a3c5bc33cc3ae0"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PrivateKeyLink"/>
            <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-ECC-2-11-pubkey1"/>
        </Attribute>
      </TemplateAttribute>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="X_509"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="3059301306072a8648ce3d020106082a8648ce3d03010703420004b344392fb72aa267f86d7d837de1d96ce960ffc05ceef3f1fa26d8546a6442f3c1397e929aad8dcab25b282ca8a1cf00bef7cb18a0f5ea44493a30a6d223b25b"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PublicKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
```

```
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PublicKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PrivateKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_8"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3081b1301c060a2a864886f70d010c0103300e04082f2656a336573139020
20800048190eadf76e9cee21053b01c53e175b0e8c4d627c17da1b2df47d8cfb35a0
d7252a9a6488660d61235be735178d0ca8548871567c22803d8f6f6009f05c26429c
83ab72d0f2e7e7870befc3ec746f52d0eccafe34b72a791e9535b34f584b96dc1240
34e8a82df0b5c3e70018f2d4745d66ae6da9398234ebda2ca4d02992613cb377b965
1282c4f3fd0c5a3c5bc33cc3ae0"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PrivateKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
       <PublicKey>
      <KeyBlock>
        <KeyFormatType type="Enumeration" value="X_509"/>
        <KeyValue>
          <KeyMaterial type="ByteString" value="3059301306072a8648ce3d020106082a8648ce3d03010703420004b344392fb72aa267f86d7d837de1d96ce960ffc05ceef3f1fa26d8546a6442f3c1397e929aad8dcab25b282ca8a1cf00bef7cb18a0f5ea44493a30a6d223b25b"/>
        </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
        <CryptographicLength type="Integer" value="256"/>
      </KeyBlock>
      </PublicKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.2.41 TC-ECC-3-11 - Register an ECC Key Pair and ECDSA Certificate

EC recommended curve is P-256 (secp256r1)

- Private Key format ECPrivateKey - http://tools.ietf.org/html/rfc5915

- Public Key format SubjectPublicKeyInfo - http://tools.ietf.org/html/rfc5480

Register a EC private key in the ECPrivateKey key format, then register the corresponding public key, in X.509 (SubjectPublicKeyInfo) format, and a corresponding ECDSA certificate, with the Link attribute pointing to the previously registered private key. Return the attribute values for the ECDSA certificate showing the correct server parsing of the certificate. Then add the Link attribute to the private key, and perform Locate operations to find the public and private keys using the Link attribute. Get both the private and public keys in default format, then destroy both the private and the public key.

```
-----BEGIN EC PRIVATE KEY-----
MHcCAQEEIJEqDiCPXdc0sYUYR+RlnEWIsW2fO8GtpRDqLJadr570oAoGCCqGSM49
AwEHoUQDQgAEs0Q5L7cqomf4bX2DfeHZbOlg/8Bc7vPx+ibYVGpkQvPBOX6Smq2N
yrJbKCyooc8AvvfLGKD16kRJOjCm0iOyWw==
-----END EC PRIVATE KEY-----

-----BEGIN PUBLIC KEY-----
MFkwEwYHKoZIzj0CAQYIKoZIzj0DAQcDQgAEs0Q5L7cqomf4bX2DfeHZbOlg/8Bc
7vPx+ibYVGpkQvPBOX6Smq2NyrJbKCyooc8AvvfLGKD16kRJOjCm0iOyWw==
-----END PUBLIC KEY-----

-----BEGIN CERTIFICATE-----
MIIB1zCCAX2gAwIBAgIJANraFqWNKSTZMAoGCCqGSM49BAMCMEgxCzAJBgNVBAYT
AlVTMQ0wCwYDVQQKDARURVNUMQ4wDAYDVQQLDAVPQVNJUzEaMBgGA1UEAwwRS01J
UC1FQy1zZWNwMjU2cjEwHhcNMTMwNjI2MDM1NDQzWhcNMjMwNjI0MDM1NDQzWjBI
MQswCQYDVQQGEwJVUzENMAsGA1UECgwEVEVTVDEOMAwGA1UECwwFT0FTSVMxGjAY
BgNVBAMMEUtNSVAtRUMtc2VjcDI1NnIxMFkwEwYHKoZIzj0CAQYIKoZIzj0DAQcD
QgAEs0Q5L7cqomf4bX2DfeHZbOlg/8Bc7vPx+ibYVGpkQvPBOX6Smq2NyrJbKCyo
oc8AvvfLGKD16kRJOjCm0iOyW6NQME4wHQYDVR0OBBYEFMdL251FazsUho/ZyIZ9
4Pzf79STMB8GA1UdIwQYMBaAFMdL251FazsUho/ZyIZ94Pzf79STMAwGA1UdEwQF
MAMBAf8wCgYIKoZIzj0EAwIDSAAwRQIgI19fyzdd1gavOhIaeHbOnBoV0ldEmg6q
YA+OEmaQS98CIQCpuF4UPYklouuwi8hDTVavL3MAX/9Cm82CRf1fshp7RQ==
-----END CERTIFICATE-----
```

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-ECC-3-11-prikey1"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="ECPrivateKey"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="30770201010420912a0e208f5dd734b1851847e4659c4588b16d9f3bc1ada510ea2c969daf9ef4a00a06082a8648ce3d030107a14403420004b344392fb72aa267f86d7d837de1d96ce960ffc05ceef3f1fa26d8546a6442f3c1397e929aad8dcab25b282ca8a1cf00bef7cb18a0f5ea44493a30a6d223b25b"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
```

```
Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PrivateKeyLink"/>
            <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-ECC-3-11-pubkey1"/>
        </Attribute>
      </TemplateAttribute>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="X_509"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="3059301306072a8648ce3d020106082a8648ce3d03010703420004b344392fb72aa267f86d7d837de1d96ce960ffc05ceef3f1fa26d8546a6442f3c1397e929aad8dcab25b282ca8a1cf00bef7cb18a0f5ea44493a30a6d223b25b"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PublicKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="Certificate"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Verify Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PublicKeyLink"/>
            <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-ECC-3-11-
cert1"/>
        </Attribute>
      </TemplateAttribute>
      <Certificate>
        <CertificateType type="Enumeration" value="X_509"/>
        <CertificateValue type="ByteString"
value="308201d73082017da003020102020900dada16a58d2924d9300a06082a864
8ce3d040302304831 0b3009060355040613025553310d300b060355040a0c0454455
354310e300c060355040b0c054f41534953311a301806035504030c114b4d49502d4
5432d7365637032353672313 01e170d3133303632363033353434335a170d3233303
6323430333534343 35a3048310b3009060355040613025553310d300b060355040a0
c0454455354310e300c060355040b0c054f41534953311a301806035504030c114b4
d49502d45432d736563703235367231305930130607 2a8648ce3d020106082a8648c
e3d030107034200 04b344392fb72aa267f86d7d837de1d96ce960ffc05ceef3f1fa2
6d8546a6442f3c1397e929aad8dcab25b282ca8a1cf00bef7cb18a0f5ea44493a30a
6d223b25ba350304e301d0603551d0e04160414c74bdb9d456b3b14868fd9c8867de
0fcdfefd493301f0603551d23041830168014c74bdb9d456b3b14868fd9c8867de0f
cdfefd493300c0603551d13040530030101ff300a06082a8648ce3d040302034800 3
0450220235f5fcb375dd606af3a121a7876ce9c1a15d257449a0eaa600f8e1266904
bdf022100a9b85e143d8925a2ebb08bc8434d56af2f73005fff429bcd8245fd5fb21
a7b45"/>
      </Certificate>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="01"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="02"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="CertificateLink"/>
          <LinkedObjectIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_2"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="01"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="02"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="CertificateLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="x-ID"/>
      <AttributeName type="TextString" value="Unique Identifier"/>
      <AttributeName type="TextString" value="Object Type"/>
      <AttributeName type="TextString" value="Certificate Type"/>
      <AttributeName type="TextString" value="Certificate Identifier"/>
      <AttributeName type="TextString" value="Certificate Issuer"/>
      <AttributeName type="TextString" value="Certificate Length"/>
      <AttributeName type="TextString" value="Certificate Subject"/>
      <AttributeName type="TextString" value="Cryptographic Length"/>
      <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
      <AttributeName type="TextString" value="Digest"/>
      <AttributeName type="TextString" value="Digital Signature Algorithm"/>
      <AttributeName type="TextString" value="Fresh"/>
      <AttributeName type="TextString" value="Initial Date"/>
      <AttributeName type="TextString" value="Last Change Date"/>
      <AttributeName type="TextString" value="Lease Time"/>
      <AttributeName type="TextString" value="Link"/>
      <AttributeName type="TextString" value="State"/>
      <AttributeName type="TextString" value="X.509 Certificate Identifier"/>
      <AttributeName type="TextString" value="X.509 Certificate Issuer"/>
      <AttributeName type="TextString" value="X.509 Certificate Subject"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="Digital Signature Algorithm"/>
      <AttributeName type="TextString" value="X.509 Certificate Identifier"/>
      <AttributeName type="TextString" value="X.509 Certificate Issuer"/>
      <AttributeName type="TextString" value="X.509 Certificate Subject"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <Attribute>
        <AttributeName type="TextString" value="Digital Signature Algorithm"/>
        <AttributeValue type="Enumeration" value="ECDSAWithSHA256"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="X.509 Certificate Identifier"/>
        <AttributeValue>
          <IssuerDistinguishedName type="ByteString" value="3048310b30090603550406130255533110d300b060355040a0c0454455354310e300c060355040b0c054f41534953311a301806035504030c114b4d49502d45432d736563703235366b31"/>
          <CertificateSerialNumber type="ByteString" value="020900ec0b7402196d5295"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="X.509 Certificate Issuer"/>
        <AttributeValue>
          <IssuerDistinguishedName type="ByteString" value="3048310b30090603550406130255533110d300b060355040a0c0454455354310e300c060355040b0c054f41534953311a301806035504030c114b4d49502d45432d736563703235366b31"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
```

```
        <AttributeName type="TextString" value="X.509 Certificate Subject"/>
        <AttributeValue>
          <SubjectDistinguishedName type="ByteString" value="3048310b3009060355040613025553310d300b060355040a0c0454455354310e300c060355040b0c054f41534953311a301806035504030c114b4d49502d45432d736563703235366b31"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PublicKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PrivateKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
```

```
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="ECPrivateKey"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="3081b1301c060a2a864886f70d010c0103300e04082f2656a33657313902020800048190eadf76e9cee21053b01c53e175b0e8c4d627c17da1b2df47d8cfb35a0d7252a9a6488660d61235be735178d0ca8548871567c22803d8f6f6009f05c26429c83ab72d0f2e7e7870befc3ec746f52d0eccafe34b72a791e9535b34f584b96dc124034e8a82df0b5c3e70018f2d4745d66ae6da9398234ebda2ca4d02992613cb377b9651282c4f3fd0c5a3c5bc33cc3ae0"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PrivateKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
       <PublicKey>
      <KeyBlock>
        <KeyFormatType type="Enumeration" value="X_509"/>
        <KeyValue>
          <KeyMaterial type="ByteString"
value="3059301306072a8648ce3d020106082a8648ce3d030107034200004b344392
fb72aa267f86d7d837de1d96ce960ffc05ceef3f1fa26d8546a6442f3c1397e929aa
d8dcab25b282ca8a1cf00bef7cb18a0f5ea44493a30a6d223b25b"/>
        </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="ECDSA"/>
        <CryptographicLength type="Integer" value="256"/>
      </KeyBlock>
      </PublicKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 11
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 12
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="1"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3 KMIP 1.2 Test Cases

2.3.1 TC-311-12 - Create / Destroy

In this test case the client issues a Create request, whereby the server creates a new symmetric key and returns the Unique Identifier. To clean up, the client then performs a Destroy operation to destroy the key.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
```

```
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-311-12"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:21+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
```

```
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:21+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.2 TC-312-12 - Register / Create / Get attributes / Destroy

Here the client first registers a template object and then creates a symmetric key using the registered template. To verify that the attributes of the key were set correctly from the template, the client then issues a Get Attributes command, after which it destroys first the key and then the template.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="Template"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-312-12-template1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-312-12"/>
        </Attribute>
      </TemplateAttribute>
      <Template>
        <Attribute>
          <AttributeName type="TextString" value="Object Group"/>
          <AttributeValue type="TextString" value="Group1"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Application Specific Information"/>
          <AttributeValue>
            <ApplicationNamespace type="TextString" value="ssl"/>
            <ApplicationData type="TextString" value="www.example.com"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Contact Information"/>
          <AttributeValue type="TextString" value="Joe"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-Purpose"/>
          <AttributeValue type="TextString" value="demonstration"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-312-12-from-template"/>
        </Attribute>
      </Template>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:21+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Name>
          <NameValue type="TextString" value="TC-312-12-template1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </Name>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-312-12-key1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-312-12-from-create"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:22+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:22+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-ID"/>
        <AttributeValue type="TextString" value="TC-312-12-from-template"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="x-ID"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue type="TextString" value="TC-312-12-from-create"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="x-Purpose"/>
        <AttributeValue type="TextString" value="demonstration"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Unique Identifier"/>
        <AttributeValue type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_1"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Algorithm"/>
        <AttributeValue type="Enumeration" value="AES"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Length"/>
        <AttributeValue type="Integer" value="128"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Application Specific Information"/>
        <AttributeValue>
          <ApplicationNamespace type="TextString" value="ssl"/>
          <ApplicationData type="TextString" value="www.example.com"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Contact Information"/>
        <AttributeValue type="TextString" value="Joe"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
        <AttributeValue type="Integer" value="Decrypt Encrypt"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Digest"/>
        <AttributeValue>
          <HashingAlgorithm type="Enumeration" value="SHA_256"/>
          <DigestValue type="ByteString" value="c61217ddfa8a8004410ce1a7edd8e5013693a173310918971e146e910d61c669"/>
          <KeyFormatType type="Enumeration" value="Raw"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Fresh"/>
        <AttributeValue type="Boolean" value="true"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Initial Date"/>
        <AttributeValue type="DateTime" value="2013-06-17T08:37:31+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Last Change Date"/>
        <AttributeValue type="DateTime" value="2013-06-
```

```
17T08:37:31+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Lease Time"/>
        <AttributeValue type="Interval" value="3600"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-312-12-key1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Object Group"/>
        <AttributeValue type="TextString" value="Group1"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Original Creation Date"/>
        <AttributeValue type="DateTime" value="2013-06-23T00:11:30+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="PreActive"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-17T08:24:02+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
      <AttributeName type="TextString" value="x-ID"/>
      <AttributeValue type="TextString" value="TC-312-12"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Unique Identifier"/>
        <AttributeValue type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="Template"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Initial Date"/>
        <AttributeValue type="DateTime" value="2013-06-17T08:24:02+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Last Change Date"/>
        <AttributeValue type="DateTime" value="2013-06-17T08:24:02+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Lease Time"/>
        <AttributeValue type="Interval" value="3600"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-312-12-template1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-17T08:40:15+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="Template"/>
      <UniqueIdentifier type="TextString" value="8590e6e9-61c1-4b81-98d3-053a3c6a521b"/>
      <Template>
        <Attribute>
          <AttributeName type="TextString" value="Object Group"/>
          <AttributeValue type="TextString" value="Group1"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Application Specific Information"/>
          <AttributeValue>
            <ApplicationNamespace type="TextString" value="ssl"/>
            <ApplicationData type="TextString" value="www.example.com"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Contact Information"/>
          <AttributeValue type="TextString" value="Joe"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-Purpose"/>
          <AttributeValue type="TextString" value="demonstration"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-312-12-from-template"/>
        </Attribute>
      </Template>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:22+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:22+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.3 TC-313-12 - Create / Locate / Get / Destroy

This test case tests the Locate and Get operations. A symmetric key is first created, and then a lookup is performed on the Name attribute using the Locate operation. Subsequently, a Get request is issued to retrieve the located key. A locate is performed on the Unique Identifier with State of PreActive (the State the key must be in). The key on the server is destroyed and the locate is performed again which should return no objects (as the state of the key should now be Destroyed).

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-313-12-key1"/>
            <NameType type="Enumeration"
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="DES3"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Length"/>
          <AttributeValue type="Integer" value="168"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
```

```
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:22+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-313-12-key1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:22+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" 
value="7367578051012a6d134a855e25c8cd5e4ca131455729d3c8"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="DES3"/>
          <CryptographicLength type="Integer" value="168"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="PreActive"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Unique Identifier"/>
        <AttributeValue type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="PreActive"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Unique Identifier"/>
        <AttributeValue type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.4 TC-314-12 - Dual Client Test Case, ID Placeholder-linked Locate & Get Batch

This test case has two clients performing operations on the same key. The first client initially registers a template and creates a symmetric key using that template. The second client then does a batched Locate and Get using the ID Placeholder to retrieve the key. The second client thereafter performs a number of operations on the key (Get Attribute List, Get Attribute, Add Attribute, Modify Attribute and Delete Attribute), before the first client finally destroys the key and the template. The first client also tries to Get the key and the template after they have been destroyed, but the Get operation fails in both cases. This test case demonstrates the fact that it is possible for two clients to cooperate and use the same managed object while only having knowledge of a single pre-agreed Name attribute value and without having to share any other information.

```
# TIME 0
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="Template"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-314-12-
template1"/>
            <NameType type="Enumeration"
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
      <Template>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
```

```
Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
      </Template>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Name>
          <NameValue type="TextString" value="TC-314-12-template1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </Name>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-314-12-key1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
        <AttributeValue type="Integer" value="Encrypt"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Contact Information"/>
        <AttributeValue type="TextString" value="Foo"/>
      </Attribute>
    </TemplateAttribute>
  </RequestPayload>
</BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="aa21f8c659d6e10d"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-314-12-key1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="495a95f165854d1e"/>
    <RequestPayload>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="aa21f8c659d6e10d"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="495a95f165854d1e"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="d351910f1d7934d6e2ae17576564e2bc"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
# [Client-B]
<RequestMessage>
  <RequestHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Cryptographic
Length"/>
      <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
      <AttributeName type="TextString" value="State"/>
      <AttributeName type="TextString" value="Digest"/>
      <AttributeName type="TextString" value="Lease Time"/>
      <AttributeName type="TextString" value="Initial Date"/>
      <AttributeName type="TextString" value="Unique Identifier"/>
      <AttributeName type="TextString" value="Name"/>
      <AttributeName type="TextString" value="Cryptographic Usage
Mask"/>
      <AttributeName type="TextString" value="Object Type"/>
      <AttributeName type="TextString" value="Contact Information"/>
      <AttributeName type="TextString" value="Last Change Date"/>
      <AttributeName type="TextString" value="Original Creation
Date"/>
      <AttributeName type="TextString" value="Fresh"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Name"/>
      <AttributeName type="TextString" value="Contact Information"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-314-12-key1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Contact Information"/>
        <AttributeValue type="TextString" value="Foo"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="32d84369c120488e"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="Value1"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="519cf4f0ec1ac13f"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="Value2"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="32d84369c120488e"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="Value1"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="519cf4f0ec1ac13f"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="Value2"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
```

```
</ResponseMessage>
```

```
# TIME 6
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="fce08e45995686b6"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="ModifiedValue1"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="dc2bfda88f39f5fc"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="ModifiedValue2"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="fce08e45995686b6"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="ModifiedValue1"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="dc2bfda88f39f5fc"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="ModifiedValue2"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="ba8d4889753b7414"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="x-attribute1"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="88fa2f142c615edb"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="x-attribute2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="ba8d4889753b7414"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="ModifiedValue1"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="88fa2f142c615edb"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="ModifiedValue2"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:23+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="ItemNotFound"/>
    <ResultMessage type="TextString" value="No Cryptographic Object found with given Unique Identifier"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 11
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="ItemNotFound"/>
    <ResultMessage type="TextString" value="No Cryptographic Object found with given Unique Identifier"/>
  </BatchItem>
</ResponseMessage>
```

2.3.5 TC-315-12 - Register / Destroy Secret Data

In this test case the client issues a Register request containing a Secret Data object, whereby the server registers the object and returns the Unique Identifier. To clean up, the client then performs a Destroy

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SecretData"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-315-12"/>
        </Attribute>
      </TemplateAttribute>
      <SecretData>
        <SecretDataType type="Enumeration" value="Password"/>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Opaque"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="53656372657450617373776f7264"/>
          </KeyValue>
        </KeyBlock>
      </SecretData>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
```

```
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.6 TC-32-12 - Asynchronous Locate

This test case tests the asynchronous capabilities of KMIP using the Locate operation. A key is created and then a Locate request is sent containing the Name of the created key and with the message header Asynchronous Indicator-field set to True. If the server returns an asynchronous response to the Locate, the client then polls the server until the operation is ready. If the server responded asynchronously, a subsequent Locate operation that is also handled asynchronously is then Canceled, before the key is finally destroyed.

This test case shows the use of two clients. Since the client is unable to force the server to respond asynchronously, it is possible for a server to respond synchronously to the requests issued at times 1 and 4, in which case the expected responses are the ones shown at times 2 and 5, respectively. In the case of the server not responding asynchronously to the Locate requests, the client is permitted to skip the requests illustrated at time 7 and 8.

Note: a server may perform all operations synchronously and not require the use of Poll for the client to wait for the operations to complete

```
# TIME 0
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-32-12-key1"/>
            <NameType type="Enumeration"
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Object Group"/>
          <AttributeValue type="TextString" value="Group1"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <AsynchronousIndicator type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-32-12-key1"/>
          <NameType type="Enumeration"
value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="OperationPending"/>
    <AsynchronousCorrelationValue type="ByteString"
```

```
value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
# [Client-B]
# [REPEAT] until Locate response is returned
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Poll"/>
    <RequestPayload>
      <AsynchronousCorrelationValue type="ByteString"
value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="cc9e3b20f5c4fc4d1298f68d0b7de65b"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <AsynchronousIndicator type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Object Group"/>
        <AttributeValue type="TextString" value="Group1"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="OperationPending"/>
    <AsynchronousCorrelationValue type="ByteString" value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
# [Client-B]
# [REPEAT] until Locate response is returned
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Poll"/>
    <RequestPayload>
      <AsynchronousCorrelationValue type="ByteString" value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
# [Client-B]
<RequestMessage>
```

```
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="cc9e3b20f5c4fc4d1298f68d0b7de65b"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <AsynchronousIndicator type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-32-12-key1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="OperationPending"/>
    <AsynchronousCorrelationValue type="ByteString" value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Cancel"/>
    <RequestPayload>
      <AsynchronousCorrelationValue type="ByteString" value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Cancel"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <AsynchronousCorrelationValue type="ByteString" value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
      <CancellationResult type="Enumeration" value="Canceled"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.7 TC-41-12 - Revoke Scenario

This test case tests the revocation aspect of the key life cycle support in KMIP. A key is created and a Get Attribute for the State-attribute reveals that the key is in Pre-active state. The

Activation Date is then set, which changes the state to Active. The key is then revoked with a revocation reason of Compromised and the state subsequently changed to Compromised, but this does not stop a client from being able to add, modify and delete attributes or even get the key. To clean up, the created key is finally destroyed.

```
# TIME 0
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-41-12-key1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="PreActive"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Activate"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Activate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Active"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-41-12-key1"/>
          <NameType type="Enumeration"
value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
```

```
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="9c7d7c4fd2076f1909a6ba4342cab1de"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
# [Client-B]
<RequestMessage>
```

```
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" value="KeyCompromise"/>
      </RevocationReason>
      <CompromiseOccurrenceDate type="DateTime" value="1970-01-01T00:00:06+00:00"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
```

```
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Compromised"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 8
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Unique Identifier"/>
      <AttributeName type="TextString" value="Object Type"/>
      <AttributeName type="TextString" value="Cryptographic Algorithm"/>
      <AttributeName type="TextString" value="Cryptographic Length"/>
      <AttributeName type="TextString" value="Activation Date"/>
      <AttributeName type="TextString" value="Compromise Date"/>
      <AttributeName type="TextString" value="Compromise Occurrence Date"/>
      <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
      <AttributeName type="TextString" value="Digest"/>
      <AttributeName type="TextString" value="Fresh"/>
      <AttributeName type="TextString" value="Initial Date"/>
      <AttributeName type="TextString" value="Last Change Date"/>
      <AttributeName type="TextString" value="Lease Time"/>
      <AttributeName type="TextString" value="Name"/>
      <AttributeName type="TextString" value="Original Creation Date"/>
      <AttributeName type="TextString" value="Revocation Reason"/>
      <AttributeName type="TextString" value="State"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
```

```
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Compromised"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="23a177faa569463c"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="Value1"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="9b898dc0577f8080"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="Value2"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Client-A]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="23a177faa569463c"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="Value1"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="9b898dc0577f8080"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="Value2"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 11
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="0752c951bb9926cc"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="ModifiedValue1"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="33f55c8d7e6cafbf"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="ModifiedValue2"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="0752c951bb9926cc"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="ModifiedValue1"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <UniqueBatchItemID type="ByteString" value="33f55c8d7e6cafbf"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="ModifiedValue2"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 12
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="a3eb249b495e8ad2"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="x-attribute1"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="c1fe7b3b4c977730"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="x-attribute2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="a3eb249b495e8ad2"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute1"/>
        <AttributeValue type="TextString" value="ModifiedValue1"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <UniqueBatchItemID type="ByteString" value="c1fe7b3b4c977730"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-attribute2"/>
        <AttributeValue type="TextString" value="ModifiedValue2"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 13
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="9c7d7c4fd2076f1909a6ba4342cab1de"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 14
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.8 TC-51-12 - Get Usage Allocation Scenario

This test case tests the usage management functionality of KMIP. A key is created and the Activation Date and Protect Stop Date attributes are set in such a way as to allow the Get Usage Allocation operation to be performed. The value of the Usage Limits attribute is set to 1000 bytes, and two subsequent requests for 500 bytes succeed (one of them also verifying the amount that can be received using the Check operation), while a third fails since the usage allocation has been used up. The key is finally revoked and destroyed. This test case shows the use of multiple clients (Client-A, Client-B and Client-C).

```
# TIME 0
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-51-12-key1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="369f6802ee57532b"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Activation Date"/>
        <AttributeValue type="DateTime" value="1970-01-01T00:00:02+00:00"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="b7ca806e52825bf4"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Protect Stop Date"/>
        <AttributeValue type="DateTime" value="$NOW+600"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="369f6802ee57532b"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Activation Date"/>
        <AttributeValue type="DateTime" value="1970-01-01T00:00:02+00:00"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="b7ca806e52825bf4"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Protect Stop Date"/>
        <AttributeValue type="DateTime" value="$NOW+600"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 2
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Usage Limits"/>
        <AttributeValue>
          <UsageLimitsTotal type="LongInteger" value="1000"/>
          <UsageLimitsUnit type="Enumeration" value="Byte"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Usage Limits"/>
        <AttributeValue>
          <UsageLimitsTotal type="LongInteger" value="1000"/>
          <UsageLimitsCount type="LongInteger" value="1000"/>
          <UsageLimitsUnit type="Enumeration" value="Byte"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
```

```
      <Operation type="Enumeration" value="Locate"/>
      <RequestPayload>
        <Attribute>
          <AttributeName type="TextString" value="Object Type"/>
          <AttributeValue type="Enumeration" value="SymmetricKey"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-51-12-key1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </RequestPayload>
    </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="50f31013c771af4448110f695efa9ec7"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Check"/>
    <UniqueBatchItemID type="ByteString" value="d35a294f9425f06e"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <UsageLimitsCount type="LongInteger" value="500"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="GetUsageAllocation"/>
    <UniqueBatchItemID type="ByteString" value="80454d8ce4f738fe"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <UsageLimitsCount type="LongInteger" value="500"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Check"/>
    <UniqueBatchItemID type="ByteString" value="d35a294f9425f06e"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="GetUsageAllocation"/>
    <UniqueBatchItemID type="ByteString" value="80454d8ce4f738fe"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetUsageAllocation"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <UsageLimitsCount type="LongInteger" value="500"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="GetUsageAllocation"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
# [Client-C]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-51-12-key1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
# [Client-C]
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="50f31013c771af4448110f695efa9ec7"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
# [Client-C]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="GetUsageAllocation"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <UsageLimitsCount type="LongInteger" value="500"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetUsageAllocation"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="PermissionDenied"/>
    <ResultMessage type="TextString" value="Unable to allocate requested amount"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="79b998c5f29465f4"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" value="CessationOfOperation"/>
      </RevocationReason>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="b0633f0e41187345"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="79b998c5f29465f4"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="b0633f0e41187345"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.9 TC-61-12 - Import of a Third-party Key

This test case tests the import of a foreign key using the Register operation. To validate that the registered key is treated the same as a locally created key, an attribute is added to the key and then modified. Finally, the key is destroyed.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt"/>
        </Attribute>
        <Attribute>
```

```
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-61-12"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="0123456789abcdef0123456789abcdef"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="unknown"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="unknown"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="third party"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="third party"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.10 TC-71-12 - Unrecognized Message Extension with Criticality Indicator False

A create request is issued and the request contains a Message Extension with the Criticality Indicator set to false. The server does not understand the extension, but since it is non-critical, the create request is processed normally. Subsequently, the created key is deleted.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-71-12"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
    <MessageExtension>
      <VendorIdentification type="TextString" value="Acme"/>
      <CriticalityIndicator type="Boolean" value="false"/>
      <VendorExtension>
        <TTLV tag="0x540001" type="TextString" value="na"/>
      </VendorExtension>
    </MessageExtension>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.11 TC-72-12 - Unrecognized Message Extension with Criticality Indicator True

A create request is issued and the request contains a Message Extension with the Criticality Indicator set to true. The server does not understand the extension, and since it is critical, the create request fails and an error is returned.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-72-12"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
    <MessageExtension>
      <VendorIdentification type="TextString" value="Acme"/>
      <CriticalityIndicator type="Boolean" value="true"/>
      <VendorExtension>
        <TTLV tag="0x540001" type="TextString" value="na"/>
      </VendorExtension>
    </MessageExtension>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="FeatureNotSupported"/>
    <ResultMessage type="TextString" value="Critical Message Extension not recognized"/>
  </BatchItem>
</ResponseMessage>
```

2.3.12 TC-81-12 - Create a Key Pair

Create a new private/public key pair. Make sure they are linked correctly by issuing Locate commands with the assigned Unique Identifiers. Finally delete both key halves.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="CreateKeyPair"/>
    <RequestPayload>
      <CommonTemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="RSA"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="1024"/>
        </Attribute>
      </CommonTemplateAttribute>
      <PrivateKeyTemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-81-12-privatekey1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
      </PrivateKeyTemplateAttribute>
      <PublicKeyTemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-81-12-publickey1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
```

```
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
      </PublicKeyTemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="CreateKeyPair"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <PrivateKeyUniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <PublicKeyUniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PublicKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PrivateKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
```

```
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
```

```
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.13 TC-82-12 - Register Both Halves of a Key Pair

Register a private key and a public key and set the Link attribute to point to each other. Verify the links were set correctly by locating the keys based on the link attributes, and then delete both objects.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-82-12-prikey"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_8"/>
          <KeyValue>
```

```
            <KeyMaterial type="ByteString"
value="30820276020100300d06092a864886f70d0101010500048202603082025c0
2010002818100930451c9ecd94f5bb9da17dd09381bd23be43eca8c7539f301fc8a8
cd5d5274c3e7699dbdc711c97a7aa91e2c50a82bd0b1034f0df493dec16362427e58
acce7f6ce0f9bcc617bbd8c90d0094a2703ba0d09eb19d1005f2fb265526aac75af3
2f8bc782cded2a57f811e03eaf67a944de5e78413dca8f232d074e6dcea4cec9f020
30100010281800b6a7d736199ea48a420e4537ca0c7c046784dcbeaa63baebc0bc13
2787449cde8d7cad0c0c863c0fefb06c3062befc50033ecf87b4e33a9be7bcbc8f15
11ae215e80deb5d8af2bd31319d7821196640935a0cd67c94599579f2100d65e0388
31fdafb0dbe2bbdac00a696e67e756350e1c99ace11a36dabac3ed3e730960059024
100ddf672fbcc5bda3d73affc4e791e0c03390224405d69ccaabc749faa0dcd4c258
3c71dde8941a7b9aa030f52ef1451466c074d4d338fe677892acd9e10fd35bd02410
0a98fbc3ed6b4c6f860f97165ac2f7bb6f2e2cb192a9abd49795be5bcf37d8ee69a6
e169c24e5c32e4e7fa33265461407f952ba49e204818a2f785f113f922b8b0240253
f9470390d39049303777ddbc9750e9d64849ce0903eae704dc9f589b7680deb9d609
fd5bcd4decd6f120542e5cff5d76f2a43c8615fb5b3a9213463797aa9024100a1ddf
023c0cd94c019bb26d09b9e3ca8fa971cb16aa58b9baf79d6081a1dbba452ba53653
e2804ba98ff69e8bb1b3a161ea225ea501463216a8dab9b88a75e5f02406178646e1
12cf79d921a8a843f17f6e7ff974f688122365bf6690cdfc996e1890952eb3820dd1
890ec1c8619e87a2bd38f9d03b37fac742efb748c7885942c39"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="1024"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PrivateKeyLink"/>
            <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-82-12-pubkey"/>
        </Attribute>
      </TemplateAttribute>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="X_509"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="30819f300d06092a864886f70d010101050003818d0030818902818100930451c9ecd94f5bb9da17dd09381bd23be43eca8c7539f301fc8a8cd5d5274c3e7699dbdc711c97a7aa91e2c50a82bd0b1034f0df493dec16362427e58acce7f6ce0f9bcc617bbd8c90d0094a2703ba0d09eb19d1005f2fb265526aac75af32f8bc782cded2a57f811e03eaf67a944de5e78413dca8f232d074e6dcea4cec9f0203010001"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="1024"/>
        </KeyBlock>
      </PublicKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
```

```
</ResponseMessage>
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PublicKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PrivateKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
```

```
      <Operation type="Enumeration" value="Destroy"/>
      <ResultStatus type="Enumeration" value="Success"/>
      <ResponsePayload>
        <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      </ResponsePayload>
    </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.14 TC-91-12 - Create a Key, Re-key

Create a symmetric key with a specific name, and then use Locate to find the key. After using Re-key to create a new key, verify that the name was removed from the existing key and copied to the new key. Also verify that the key material for the old key is still retrievable. To clean up, both keys are deleted.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-91-12-rekeyKey"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-91-12-rekeyKey"/>
          <NameType type="Enumeration"
value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
```

```
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-91-12-rekeyKey"/>
          <NameType type="Enumeration"
value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Name"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
```

```
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="9ca9840291a65889043c37707da997e8"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:26+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.15 TC-92-12 - Existing Key Expired, Re-key with Same Life-cycle

Create a new symmetric key. Then add the Activation Date and Deactivation Date attributes based on the timestamp in the response to the Create request. The Activation Date is set to the current time and the Deactivation Date to a time in the near future. Repeated Get Attribute calls are performed to verify that the state is first 'Active', then subsequently 'Deactivated'. Then issue a Re-key request, including an Offset value of zero leading to the Activation Date of the replacement key to be set to the same value as the Initial Date of the replacement key. Verify from the response that the Activation Date and Deactivation Date attributes were set correctly (if they are not returned, issue a Get Attribute request). Do a Get Attribute operation to verify that the state of the new key is 'Active'. To clean up, both keys are deleted.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-92-12-rekeyKey"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
```

```
      <ResultStatus type="Enumeration" value="Success"/>
      <ResponsePayload>
        <ObjectType type="Enumeration" value="SymmetricKey"/>
        <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      </ResponsePayload>
    </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="606051f958d79b0f"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Activation Date"/>
        <AttributeValue type="DateTime" value="$NOW"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="7cb12802f6a52cf1"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Deactivation Date"/>
        <AttributeValue type="DateTime" value="$NOW+120"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:27+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="606051f958d79b0f"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Activation Date"/>
        <AttributeValue type="DateTime" value="$NOW"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="7cb12802f6a52cf1"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Deactivation Date"/>
        <AttributeValue type="DateTime" value="$NOW+120"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Active"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
# [REPEAT] until GetAttributes response shows State changed to Deactivated
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Deactivated"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="ReKey"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Offset type="Interval" value="0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Activation Date"/>
      <AttributeName type="TextString" value="Deactivation Date"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Activation Date"/>
        <AttributeValue type="DateTime" value="$NOW"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Deactivation Date"/>
        <AttributeValue type="DateTime" value="$NOW+120"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Active"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="955dfbb9abbec308"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" value="CessationOfOperation"/>
      </RevocationReason>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="6ce5ea0c8334b076"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="955dfbb9abbec308"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="6ce5ea0c8334b076"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.16 TC-93-12 - Existing Key Compromised, Re-key with Same Life-cycle

Create a new symmetric key with the Activation Date in the past. Do a Get Attribute operation on the State attribute to verify the key is 'Active'. Then revoke the key as compromised, verify that the state has changed to 'Compromised'. Create a replacement key using Re-key with the offset set to '0' to indicate that the times are to be copied from the existing key. Do a Get Attribute operation to verify that the state of the new key is 'Active'. To clean up, both keys are deleted.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Activation Date"/>
          <AttributeValue type="DateTime" value="$NOW"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-93-12-rekeyKey"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 1
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Active"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" value="KeyCompromise"/>
      </RevocationReason>
      <CompromiseOccurrenceDate type="DateTime" value="$NOW"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
```

```
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Compromised"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="State"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Active"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="c95bbfd6ad466474"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration"
value="CessationOfOperation"/>
      </RevocationReason>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="4e6a3e943e1dda87"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="c95bbfd6ad466474"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="4e6a3e943e1dda87"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.17 TC-94-12 - Create Key, Re-key with New Life-cycle

Create a symmetric key with a specific name, then use Locate to find the key. After using Re-key to create a new key, verify that the name was removed from the existing key and copied to the new key. To clean up, both keys are deleted.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-94-12-rekeyKey"/>
            <NameType type="Enumeration"
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-94-12-rekeyKey"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Activation Date"/>
          <AttributeValue type="DateTime" value="$NOW-31536000"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Process Start Date"/>
          <AttributeValue type="DateTime" value="$NOW-31536000"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Protect Stop Date"/>
          <AttributeValue type="DateTime" value="$NOW+31536000"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Deactivation Date"/>
          <AttributeValue type="DateTime" value="$NOW+31536000"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
```

```
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Name"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:27+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Activation Date"/>
      <AttributeName type="TextString" value="Process Start Date"/>
      <AttributeName type="TextString" value="Protect Stop Date"/>
      <AttributeName type="TextString" value="Deactivation Date"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Activation Date"/>
        <AttributeValue type="DateTime" value="$NOW-31536000"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Process Start Date"/>
        <AttributeValue type="DateTime" value="$NOW-31536000"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Protect Stop Date"/>
        <AttributeValue type="DateTime" value="$NOW+31536000"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Deactivation Date"/>
        <AttributeValue type="DateTime" value="$NOW+31536000"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-94-12-rekeyKey"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="64bf984d81eee045"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" value="CessationOfOperation"/>
      </RevocationReason>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="6e140354775e324d"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="64bf984d81eee045"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="6e140354775e324d"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.18 TC-95-12 - Obtain Lease for Expired Key

Create a symmetric key with a specific name and obtain a lease. Revoke the key with state 'Compromised' and re-key the key. Try to obtain a lease on the old key which fails due to a server policy which does not allow giving out leases for compromised keys. Locate the new key with the original name. Get the new key and obtain a lease.

```
# TIME 0
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-95-12-rekeyKey"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Activation Date"/>
          <AttributeValue type="DateTime" value="$NOW"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
```

```
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="ef5a0e97a29b32034c66efbf26ad3e42"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ObtainLease"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ObtainLease"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <LeaseTime type="Interval" value="3600"/>
      <LastChangeDate type="DateTime" value="$NOW"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" 
value="KeyCompromise"/>
      </RevocationReason>
      <CompromiseOccurrenceDate type="DateTime" value="$NOW"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
# [Client-B]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKey"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ObtainLease"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ObtainLease"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="PermissionDenied"/>
    <ResultMessage type="TextString" value="CO is in state Compromised, no lease given"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-95-12-rekeyKey"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="525d4b0bbb66bcb538029d49a6f569a5"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ObtainLease"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="ObtainLease"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <LeaseTime type="Interval" value="3600"/>
      <LastChangeDate type="DateTime" value="$NOW"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
# [Client-A]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="e00004346ea64da4"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" value="CessationOfOperation"/>
      </RevocationReason>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="0376ca8cdcc8a2f1"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <UniqueBatchItemID type="ByteString" value="e00004346ea64da4"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="0376ca8cdcc8a2f1"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.19 TC-101-12 - Create a Key, Archive and Recover it

Create a symmetric key with a specified name, then use Locate to find the key and get the key. Archive the key (asynchronous operation, use Poll until it completes) and use Get and Locate on it, but both fail (Get returns an error and Locate returns no Unique Identifiers). Add the Storage Status Mask to the Locate-command, indicating to the server to search in both online and archived storage. The Locate then finds the archived key. Recover the key (asynchronous operation, use Poll until it completes) from the archive, then repeat the Get operation which will now succeed.

Since the client is unable to force the server to respond asynchronously, it is possible for a server to respond synchronously to the requests issued at times 3 and 9, in which case the expected responses are the ones shown at times 4 and 10 respectively.

Note: a server may perform Archive and Recover operations synchronously and not require the use of Poll for the client to wait for the operation to complete

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-101-12-archiveKey"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
```

```
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-101-12-archiveKey"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="0b4c9fb659c5ce09ec12c3233d526f45"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <AsynchronousIndicator type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Archive"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:28+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Archive"/>
    <ResultStatus type="Enumeration" value="OperationPending"/>
    <AsynchronousCorrelationValue type="ByteString" value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
# [REPEAT] until Archive response is returned
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Poll"/>
    <RequestPayload>
      <AsynchronousCorrelationValue type="ByteString" value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:30+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Archive"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:32+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="ObjectArchived"/>
    <ResultMessage type="TextString" value="Object is archived"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Archive Date"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:32+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Archive Date"/>
        <AttributeValue type="DateTime" value="2012-04-27T08:14:30+00:00"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-101-12-archiveKey"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:33+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <StorageStatusMask type="Integer" value="ArchivalStorage OnLineStorage"/>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-101-12-archiveKey"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:33+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <AsynchronousIndicator type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Recover"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:33+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Recover"/>
    <ResultStatus type="Enumeration" value="OperationPending"/>
    <AsynchronousCorrelationValue type="ByteString" value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
# [REPEAT] until Recover response is returned
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
```

```
      <Operation type="Enumeration" value="Poll"/>
      <RequestPayload>
        <AsynchronousCorrelationValue type="ByteString" value="$ASYNCHRONOUS_CORRELATION_VALUE"/>
      </RequestPayload>
    </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Recover"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 11
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="0b4c9fb659c5ce09ec12c3233d526f45"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 12
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.20 TC-111-12 - Credential, Operation Policy, Destroy Date

Pass a Credential object of type Username and Password in the message header in all requests for identification purposes. Create a symmetric key and set the Operation Policy Name attribute to 'default'. Using another Username and Password Credential, attempt to perform a Get operation batched with a Get Attribute List on the created symmetric key - according to the Default Operation Policy, both these request SHALL fail, and with the Batch Error Continuation Option set to 'Continue', the client SHALL also receive both response payloads. Using the first (correct) Credential, Destroy the object and then get the Destroy Date attribute.

The message exchanges shown in this test case assume that the first Credential (Fred) is valid and the second credential (Barney) is either invalid or does not have access to the newly created key (which should always be true under the 'default' Operation Policy).

Note: a server can elect to not return meta-data for destroyed objects and in those circumstances the Get Attributes operation may fail.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration"
value="UsernameAndPassword"/>
        <CredentialValue>
          <Username type="TextString" value="Fred"/>
          <Password type="TextString" value="password1"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
```

```
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-111-12-key1"/>
            <NameType type="Enumeration"
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Operation Policy
Name"/>
          <AttributeValue type="TextString" value="default"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Parameters"/>
          <AttributeValue>
            <BlockCipherMode type="Enumeration" value="CBC"/>
            <PaddingMethod type="Enumeration" value="PKCS5"/>
            <HashingAlgorithm type="Enumeration" value="SHA_1"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration"
```

```
value="UsernameAndPassword"/>
        <CredentialValue>
          <Username type="TextString" value="Fred"/>
          <Password type="TextString" value="password1"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <UniqueBatchItemID type="ByteString" value="55d88770e2556dab"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Operation Policy Name"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="eb864ee01f1f98cd"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <UniqueBatchItemID type="ByteString" value="55d88770e2556dab"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Operation Policy Name"/>
        <AttributeValue type="TextString" value="default"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="eb864ee01f1f98cd"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="30e55f4b230b34ce8afc476c66f8351b"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration" value="UsernameAndPassword"/>
        <CredentialValue>
          <Username type="TextString" value="Barney"/>
          <Password type="TextString" value="secret2"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchErrorContinuationOption type="Enumeration" value="Continue"/>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="4f0e6d3dba3d0495"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <UniqueBatchItemID type="ByteString" value="9b937e7cd50b233b"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="4f0e6d3dba3d0495"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="PermissionDenied"/>
    <ResultMessage type="TextString" value="Access denied"/>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <UniqueBatchItemID type="ByteString" value="9b937e7cd50b233b"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="PermissionDenied"/>
    <ResultMessage type="TextString" value="Access denied"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration" value="UsernameAndPassword"/>
        <CredentialValue>
          <Username type="TextString" value="Fred"/>
          <Password type="TextString" value="password1"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration" value="UsernameAndPassword"/>
        <CredentialValue>
          <Username type="TextString" value="Fred"/>
          <Password type="TextString" value="password1"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Destroy Date"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Destroy Date"/>
        <AttributeValue type="DateTime" value="2012-04-27T08:14:35+00:00"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.21 TC-112-12 - Device Credential, Operation Policy, Destroy Date

Pass a Credential object of type Device Credential in the message header in all requests for identification purposes. Create a symmetric key and set the Operation Policy Name attribute to 'default'. Using another Credential, attempt to perform a Get operation batched with a Get Attribute List on the created symmetric key. According to the Default Operation Policy, both these request SHALL fail, and with the Batch Error Continuation Option set to 'Continue', the client SHALL also receive both response payloads. Using the first Credential, Destroy the object and get the Destroy Date attribute. The message exchanges shown in this test case assume that the first Credential (devID2233) is valid and the second credential (devID4444) is either invalid or does not have access to the newly created key (which should always be true under the 'default' Operation Policy).

Note: a server can elect to not return meta-data for destroyed objects and in those circumstances the Get Attributes operation may fail.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration" value="Device"/>
        <CredentialValue>
          <DeviceSerialNumber type="TextString"
value="serNum123456"/>
          <Password type="TextString" value="secret"/>
          <DeviceIdentifier type="TextString" value="devID2233"/>
          <NetworkIdentifier type="TextString" value="netID9000"/>
          <MachineIdentifier type="TextString" value="machineID1"/>
          <MediaIdentifier type="TextString" value="mediaID313"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
```

```
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-112-12-key1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Operation Policy Name"/>
          <AttributeValue type="TextString" value="default"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Parameters"/>
          <AttributeValue>
            <BlockCipherMode type="Enumeration" value="CBC"/>
            <PaddingMethod type="Enumeration" value="PKCS5"/>
            <HashingAlgorithm type="Enumeration" value="SHA_1"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration" value="Device"/>
        <CredentialValue>
          <DeviceSerialNumber type="TextString"
value="serNum123456"/>
          <Password type="TextString" value="secret"/>
          <DeviceIdentifier type="TextString" value="devID2233"/>
          <NetworkIdentifier type="TextString" value="netID9000"/>
          <MachineIdentifier type="TextString" value="machineID1"/>
          <MediaIdentifier type="TextString" value="mediaID313"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <UniqueBatchItemID type="ByteString" value="e705e27dc0ba7789"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Operation Policy
Name"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="50a7f741a1119826"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <UniqueBatchItemID type="ByteString" value="e705e27dc0ba7789"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Operation Policy Name"/>
        <AttributeValue type="TextString" value="default"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="50a7f741a1119826"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="acfeaffdbdd17d0e63624a22083ee4b6"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration" value="Device"/>
        <CredentialValue>
          <DeviceSerialNumber type="TextString" value="serNum101010"/>
          <Password type="TextString" value="passwd"/>
          <DeviceIdentifier type="TextString" value="devID4444"/>
          <NetworkIdentifier type="TextString" value="netID9"/>
          <MachineIdentifier type="TextString" value="machineID1111"/>
          <MediaIdentifier type="TextString" value="mediaID0000"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchErrorContinuationOption type="Enumeration" value="Continue"/>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="1154049d742c498e"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <UniqueBatchItemID type="ByteString" value="8ae55c6e91d97b05"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="1154049d742c498e"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="PermissionDenied"/>
    <ResultMessage type="TextString" value="Access denied"/>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <UniqueBatchItemID type="ByteString" value="8ae55c6e91d97b05"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="PermissionDenied"/>
    <ResultMessage type="TextString" value="Access denied"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration" value="Device"/>
        <CredentialValue>
          <DeviceSerialNumber type="TextString" value="serNum123456"/>
          <Password type="TextString" value="secret"/>
          <DeviceIdentifier type="TextString" value="devID2233"/>
          <NetworkIdentifier type="TextString" value="netID9000"/>
          <MachineIdentifier type="TextString" value="machineID1"/>
          <MediaIdentifier type="TextString" value="mediaID313"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <Authentication>
      <Credential>
        <CredentialType type="Enumeration" value="Device"/>
        <CredentialValue>
          <DeviceSerialNumber type="TextString" value="serNum123456"/>
          <Password type="TextString" value="secret"/>
          <DeviceIdentifier type="TextString" value="devID2233"/>
          <NetworkIdentifier type="TextString" value="netID9000"/>
          <MachineIdentifier type="TextString" value="machineID1"/>
          <MediaIdentifier type="TextString" value="mediaID313"/>
        </CredentialValue>
      </Credential>
    </Authentication>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Destroy Date"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Destroy Date"/>
        <AttributeValue type="DateTime" value="2012-04-27T08:14:35+00:00"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.22 TC-121-12 - Query, Maximum Response Size

Perform a Query operation, querying the Operations and Objects supported by the server, with a restriction on the Maximum Response Size set in the request header. Since the resulting Query response is too large, an error is returned. Increase the Maximum Response Size, resubmit the Query request, and get a successful response.

Note: the list of object types supported and operations will vary depending on the server implementation. The server can report the Vendor Identification in whatever TextString form the vendor selects. The server may return vendor specific tags in the Server Information structure indicating additional vendor-specific information about the server.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <MaximumResponseSize type="Integer" value="256"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Query"/>
    <RequestPayload>
      <QueryFunction type="Enumeration" value="QueryOperations"/>
      <QueryFunction type="Enumeration" value="QueryObjects"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Query"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="ResponseTooLarge"/>
    <ResultMessage type="TextString" value="Response size: 648, Maximum Response Size indicated in request: 256"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <MaximumResponseSize type="Integer" value="2048"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Query"/>
    <RequestPayload>
      <QueryFunction type="Enumeration" value="QueryOperations"/>
      <QueryFunction type="Enumeration" value="QueryObjects"/>
      <QueryFunction type="Enumeration" value="QueryServerInformation"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Query"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <Operation type="Enumeration" value="Query"/>
      <Operation type="Enumeration" value="Locate"/>
      <Operation type="Enumeration" value="Destroy"/>
      <Operation type="Enumeration" value="Get"/>
      <Operation type="Enumeration" value="Create"/>
      <Operation type="Enumeration" value="Register"/>
      <Operation type="Enumeration" value="GetAttributes"/>
      <Operation type="Enumeration" value="GetAttributeList"/>
      <Operation type="Enumeration" value="AddAttribute"/>
      <Operation type="Enumeration" value="ModifyAttribute"/>
      <Operation type="Enumeration" value="DeleteAttribute"/>
      <Operation type="Enumeration" value="Activate"/>
      <Operation type="Enumeration" value="Revoke"/>
      <Operation type="Enumeration" value="Poll"/>
      <Operation type="Enumeration" value="Cancel"/>
      <Operation type="Enumeration" value="Check"/>
      <Operation type="Enumeration" value="GetUsageAllocation"/>
      <Operation type="Enumeration" value="CreateKeyPair"/>
      <Operation type="Enumeration" value="ReKey"/>
      <Operation type="Enumeration" value="Archive"/>
      <Operation type="Enumeration" value="Recover"/>
      <Operation type="Enumeration" value="ObtainLease"/>
      <Operation type="Enumeration" value="ReKeyKeyPair"/>
      <Operation type="Enumeration" value="Certify"/>
      <Operation type="Enumeration" value="ReCertify"/>
      <Operation type="Enumeration" value="DiscoverVersions"/>
      <Operation type="Enumeration" value="Notify"/>
      <Operation type="Enumeration" value="Put"/>
      <Operation type="Enumeration" value="RNGRetrieve"/>
      <Operation type="Enumeration" value="RNGSeed"/>
      <Operation type="Enumeration" value="Encrypt"/>
      <Operation type="Enumeration" value="Decrypt"/>
      <Operation type="Enumeration" value="Sign"/>
      <Operation type="Enumeration" value="SignatureVerify"/>
      <Operation type="Enumeration" value="MAC"/>
      <Operation type="Enumeration" value="MACVerify"/>
      <Operation type="Enumeration" value="Hash"/>
      <Operation type="Enumeration" value="CreateSplitKey"/>
      <Operation type="Enumeration" value="JoinSplitKey"/>
      <ObjectType type="Enumeration" value="Certificate"/>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <ObjectType type="Enumeration" value="SecretData"/>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <ObjectType type="Enumeration" value="Template"/>
      <ObjectType type="Enumeration" value="OpaqueObject"/>
      <ObjectType type="Enumeration" value="SplitKey"/>
      <ObjectType type="Enumeration" value="PGPKey"/>
      <VendorIdentification type="TextString" value="SOME-VENDOR-NAME"/>
      <ServerInformation>
      </ServerInformation>
    </ResponsePayload>
  </BatchItem>
```

```
</ResponseMessage>
```

2.3.23 TC-122-12 - Query Vendor Extensions

Query the server for a list and map of vendor extension tags it recognizes.

Note: Extension Type is an Integer as there is no corresponding enumerated type for the Item Type field.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Query"/>
    <RequestPayload>
      <QueryFunction type="Enumeration" value="QueryExtensionList"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Query"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ExtensionInformation>
        <ExtensionName type="TextString" value="ACME LOCATION"/>
      </ExtensionInformation>
      <ExtensionInformation>
        <ExtensionName type="TextString" value="ACME ZIP CODE"/>
      </ExtensionInformation>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Query"/>
    <RequestPayload>
      <QueryFunction type="Enumeration" value="QueryExtensionMap"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:35+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Query"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ExtensionInformation>
        <ExtensionName type="TextString" value="ACME LOCATION"/>
        <ExtensionTag type="Integer" value="5548545"/>
        <ExtensionType type="Integer" value="7"/>
      </ExtensionInformation>
      <ExtensionInformation>
        <ExtensionName type="TextString" value="ACME ZIP CODE"/>
        <ExtensionTag type="Integer" value="5548546"/>
        <ExtensionType type="Integer" value="2"/>
      </ExtensionInformation>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.24 TC-131-12 - Register an Asymmetric Key Pair in PKCS1 Format

Register a private key in the PKCS_1 key format, then register the corresponding public key, also in PKCS_1 format, with the Link attribute pointing to the previously registered private key. Thereafter add the Link attribute to the private key, and perform Locate operations to find the public and private keys using the Link attribute. Get both the private and public keys in PKCS_1 key format, then destroy both the private and the public key.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-131-12-
prikey1"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="308204a502010002820101000ab7f161c0042496ccd6c6d4dadb9199734353
57776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d746483
46d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa
2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b650
89f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c
795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f
91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c281
5c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050
203010001028201003b12455d53c1816516c518493f6398aafa72b17dfa894db888a
7d48c0a47f62579a4e644f86da711fec850cdd9dbbd17f69a443d2ec1dd60d3c618f
a74cde5fdafabd6baa26eb0a3adb4def6480fb1218cd3b083e252e885b6f0729f98b
2144d2b72293e1b11d73393bc41f75b15ee3d7569b4995ed1a14425da4319b7b26b0
e8fef17c37542ae5c6d5849f87209567f3925a47b016d564859717bc57fcb4522d0a
a49ce816e5be7b3088193236ec9efff140858045b73c5d79baf38f7c67f04c5dcf0e
3806ad982d1259058c3473e847179a878f2c6b3bd968fb99ea46e9185892f3676e78
965c2aed4877ba3917df07c5e927474f19e764ba61dc38d63bf2902818100d5c69c8
c3cdc2464744a793713dafb9f1dbc799ff96423fecd3cba794286bce920f4b5c183f
99ee9028db6212c6277c4c8297fcfbce7f7c24ca4c51fc7182fb8f4019fb1d565967
4c5cbe6d5fa992051341760cd00735729a070a9e54d342beba8ef47ee82d3a01b04c
ec4a00d4ddb41e35116fc221e854b43a696c0e6419b1b02818100cd5ea7702789064
b673540cbff09356ad80bc3d592812eba47610b9fac6aecefe22acae438459cda74e
59653d88c04189d34399bf5b14b920e34ef38a7d09fe69593396e8fe735e6f0a6ae4
990401041d8a406b6fd86a1161e45f95a3eaa5c1012e6662e44f15f335ac971e1766
b2bb9c985109974141b44d37e1e319820a55f02818100b2871237bf9fad38c3316ab
7877a6a868063e542a7186d431e8d27c19ac0414584033942e9ff6e2973bb7b2d8b0
e94ad1ee82158108fbc8664517a5a467fb963014bd5dcc2b4fb087c23039d11920db
e22fd9f16b4d89e23225cd455adbaf32ef43f185864a36d630309d6853f7714b39aa
e1ebee3938f87c2707e178c739f9f028181009690bed14b2afaa26d986d592231ee2
7d71d49065bd2ba1f78157e20229881fd9d23227d0f8479eaefa922fd75d5b16b1a5
61fa6680b040ca0bdce650b23b917a4b1bb7983a74fad70e1c305cbec2bff1a85a72
6a1d90260e4f1084f518234dcd3fe770b9520215bd543bb6a4117718754676a34171
666a79f26e79c149c5aa102818100a0c985a0a0a791a659f99731134c44f37b2e520
a2cea35800ad27241ed360dfde6e8ca614f12047fd08b76ac4d13c056a0699e2f98a
1cac91011294d71208f4abab33ba87aa0517f415baca88d6bac006088fa601d34941
7e1f0c9b23affa4d496618dbc024986ed690bbb7b025768ff9df8ac15416f489f812
9c32341a8b44f"/>
```

```
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PrivateKeyLink"/>
            <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-131-12-pubkey1"/>
        </Attribute>
      </TemplateAttribute>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3082010a0282010100ab7f161c0042496ccd6c6d4dadb919973435357776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f605020301
0001"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PublicKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
```

```
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PublicKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PrivateKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <KeyFormatType type="Enumeration" value="PKCS_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="308204a50201000282010100ab7f161c0042496ccd6c6d4dadb9199734353
57776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d746483
46d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa
2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b650
89f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c
```

```
795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f
91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c281
5c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050
203010001028201003b12455d53c1816516c518493f6398aafa72b17dfa894db888a
7d48c0a47f62579a4e644f86da711fec850cdd9dbbd17f69a443d2ec1dd60d3c618f
a74cde5fdafabd6baa26eb0a3adb4def6480fb1218cd3b083e252e885b6f0729f98b
2144d2b72293e1b11d73393bc41f75b15ee3d7569b4995ed1a14425da4319b7b26b0
e8fef17c37542ae5c6d5849f87209567f3925a47b016d564859717bc57fcb4522d0a
a49ce816e5be7b3088193236ec9efff140858045b73c5d79baf38f7c67f04c5dcf0e
3806ad982d1259058c3473e847179a878f2c6b3bd968fb99ea46e9185892f3676e78
965c2aed4877ba3917df07c5e927474f19e764ba61dc38d63bf2902818100d5c69c8
c3cdc2464744a793713dafb9f1dbc799ff96423fecd3cba794286bce920f4b5c183f
99ee9028db6212c6277c4c8297fcfbce7f7c24ca4c51fc7182fb8f4019fb1d565967
4c5cbe6d5fa992051341760cd00735729a070a9e54d342beba8ef47ee82d3a01b04c
ec4a00d4ddb41e35116fc221e854b43a696c0e6419b1b02818100cd5ea7702789064
b673540cbff09356ad80bc3d592812eba47610b9fac6aecefe22acae438459cda74e
59653d88c04189d34399bf5b14b920e34ef38a7d09fe69593396e8fe735e6f0a6ae4
990401041d8a406b6fd86a1161e45f95a3eaa5c1012e6662e44f15f335ac971e1766
b2bb9c985109974141b44d37e1e319820a55f02818100b2871237bf9fad38c3316ab
7877a6a868063e542a7186d431e8d27c19ac0414584033942e9ff6e2973bb7b2d8b0
e94ad1ee82158108fbc8664517a5a467fb963014bd5dcc2b4fb087c23039d11920db
e22fd9f16b4d89e23225cd455adbaf32ef43f185864a36d630309d6853f7714b39aa
e1ebee3938f87c2707e178c739f9f028181009690bed14b2afaa26d986d592231ee2
7d71d49065bd2ba1f78157e20229881fd9d23227d0f8479eaefa922fd75d5b16b1a5
61fa6680b040ca0bdce650b23b917a4b1bb7983a74fad70e1c305cbec2bff1a85a72
6a1d90260e4f1084f518234dcd3fe770b9520215bd543bb6a4117718754676a34171
666a79f26e79c149c5aa102818100a0c985a0a0a791a659f99731134c44f37b2e520
a2cea35800ad27241ed360dfde6e8ca614f12047fd08b76ac4d13c056a0699e2f98a
1cac91011294d71208f4abab33ba87aa0517f415baca88d6bac006088fa601d34941
7e1f0c9b23affa4d496618dbc024986ed690bbb7b025768ff9df8ac15416f489f812
9c32341a8b44f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PrivateKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <KeyFormatType type="Enumeration" value="PKCS_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3082010a0282010100ab7f161c0042496ccd6c6d4dadb919973435357776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010001"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PublicKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.25 TC-132-12 - Register an Asymmetric Key Pair and a Corresponding X509 Certificate

Register a public/private key pair in the PKCS_1 key format and a corresponding X509 certificate. Add the appropriate links between the registered objects. Make sure the certificate was registered and the attributes set correctly by listing and retrieving the attributes. Get the keys and certificate, and finally destroy all the registered objects.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-132-12-
pubkey1"/>
        </Attribute>
      </TemplateAttribute>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3082010a0282010100ab7f161c0042496ccd6c6d4dadb919973435357776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010001"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PublicKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PublicKeyLink"/>
            <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-132-12-prikey1"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="308204a50201000282010100ab7f161c0042496ccd6c6d4dadb9199734353
```

```
57776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d746483
46d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa
2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b650
89f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c
795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f
91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c281
5c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050
203010001028201003b12455d53c1816516c518493f6398aafa72b17dfa894db888a
7d48c0a47f62579a4e644f86da711fec850cdd9dbbd17f69a443d2ec1dd60d3c618f
a74cde5fdafabd6baa26eb0a3adb4def6480fb1218cd3b083e252e885b6f0729f98b
2144d2b72293e1b11d73393bc41f75b15ee3d7569b4995ed1a14425da4319b7b26b0
e8fef17c37542ae5c6d5849f87209567f3925a47b016d564859717bc57fcb4522d0a
a49ce816e5be7b3088193236ec9efff140858045b73c5d79baf38f7c67f04c5dcf0e
3806ad982d1259058c3473e847179a878f2c6b3bd968fb99ea46e9185892f3676e78
965c2aed4877ba3917df07c5e927474f19e764ba61dc38d63bf2902818100d5c69c8
c3cdc2464744a793713dafb9f1dbc799ff96423fecd3cba794286bce920f4b5c183f
99ee9028db6212c6277c4c8297fcfbce7f7c24ca4c51fc7182fb8f4019fb1d565967
4c5cbe6d5fa992051341760cd00735729a070a9e54d342beba8ef47ee82d3a01b04c
ec4a00d4ddb41e35116fc221e854b43a696c0e6419b1b02818100cd5ea7702789064
b673540cbff09356ad80bc3d592812eba47610b9fac6aecefe22acae438459cda74e
59653d88c04189d34399bf5b14b920e34ef38a7d09fe69593396e8fe735e6f0a6ae4
990401041d8a406b6fd86a1161e45f95a3eaa5c1012e6662e44f15f335ac971e1766
b2bb9c985109974141b44d37e1e319820a55f02818100b2871237bf9fad38c3316ab
7877a6a868063e542a7186d431e8d27c19ac0414584033942e9ff6e2973bb7b2d8b0
e94ad1ee82158108fbc8664517a5a467fb963014bd5dcc2b4fb087c23039d11920db
e22fd9f16b4d89e23225cd455adbaf32ef43f185864a36d630309d6853f7714b39aa
e1ebee3938f87c2707e178c739f9f028181009690bed14b2afaa26d986d592231ee2
7d71d49065bd2ba1f78157e20229881fd9d23227d0f8479eaefa922fd75d5b16b1a5
61fa6680b040ca0bdce650b23b917a4b1bb7983a74fad70e1c305cbec2bff1a85a72
6a1d90260e4f1084f518234dcd3fe770b9520215bd543bb6a4117718754676a34171
666a79f26e79c149c5aa102818100a0c985a0a0a791a659f99731134c44f37b2e520
a2cea35800ad27241ed360dfde6e8ca614f12047fd08b76ac4d13c056a0699e2f98a
1cac91011294d71208f4abab33ba87aa0517f415baca88d6bac006088fa601d34941
7e1f0c9b23affa4d496618dbc024986ed690bbb7b025768ff9df8ac15416f489f812
9c32341a8b44f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="Certificate"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Verify Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PublicKeyLink"/>
            <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-132-12-
cert1"/>
        </Attribute>
      </TemplateAttribute>
      <Certificate>
        <CertificateType type="Enumeration" value="X_509"/>
        <CertificateValue type="ByteString"
value="30820312308201faa003020102020101300d06092a864886f70d010105050
0303b310b300906035504061302555331 0d300b060355040a130454455354310e300
```

```
1e966319df72c0d41ba826a45112ff26089a2344f4d71cf7c921b4bdfaef1600d1ba
aa15336057e014b8b496d4fae9e8a6c1da9aeb6cbc960cbf2fae77f587ec4bb28204
5338845b88dd9aeea53e482a36e734e4f5f03b9d0dfc4cafc6bb34ea9053e52bd609
ee01e86d9b09fb51120c19834a997b09ce08d79e81311762f974bb1c8c09186c4d78
933e0db38e905084877e147c78af52fae07192ff166d19fa94a11cc11b27ed050f7a
27fae13b205a574c4ee00aa8bd65d0d7057c985c839ef336a441ed53a53c6b6b696f
1bdeb5f7ea811ebb25a7f86"/>
      </Certificate>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="31f81bfb0f0492bd"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="ba865701c7837be2"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="CertificateLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="31f81bfb0f0492bd"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="ba865701c7837be2"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="CertificateLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="Cryptographic Length"/>
      <AttributeName type="TextString" value="Certificate Length"/>
      <AttributeName type="TextString" value="X.509 Certificate Identifier"/>
      <AttributeName type="TextString" value="X.509 Certificate Issuer"/>
      <AttributeName type="TextString" value="X.509 Certificate Subject"/>
      <AttributeName type="TextString" value="Digital Signature Algorithm"/>
      <AttributeName type="TextString" value="Fresh"/>
      <AttributeName type="TextString" value="Certificate Issuer"/>
      <AttributeName type="TextString" value="Certificate Type"/>
      <AttributeName type="TextString" value="Certificate Subject"/>
      <AttributeName type="TextString" value="Certificate Identifier"/>
      <AttributeName type="TextString" value="State"/>
      <AttributeName type="TextString" value="Digest"/>
      <AttributeName type="TextString" value="Link"/>
      <AttributeName type="TextString" value="Lease Time"/>
      <AttributeName type="TextString" value="Initial Date"/>
      <AttributeName type="TextString" value="Unique Identifier"/>
      <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
      <AttributeName type="TextString" value="Object Type"/>
      <AttributeName type="TextString" value="Last Change Date"/>
      <AttributeName type="TextString" value="x-ID"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="Certificate Identifier"/>
      <AttributeName type="TextString" value="Certificate Issuer"/>
      <AttributeName type="TextString" value="Certificate Subject"/>
      <AttributeName type="TextString" value="Certificate Type"/>
      <AttributeName type="TextString" value="Digital Signature Algorithm"/>
      <AttributeName type="TextString" value="Cryptographic Length"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Identifier"/>
        <AttributeValue>
          <Issuer type="TextString" value="CN=KMIP,OU=OASIS,O=TEST,C=US"/>
          <SerialNumber type="TextString" value="01"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Issuer"/>
        <AttributeValue>
          <CertificateIssuerDistinguishedName type="TextString" value="CN=KMIP,OU=OASIS,O=TEST,C=US"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Subject"/>
        <AttributeValue>
          <CertificateSubjectDistinguishedName type="TextString" value="CN=KMIP,OU=OASIS,O=TEST,C=US"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Type"/>
        <AttributeValue type="Enumeration" value="X_509"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Digital Signature Algorithm"/>
        <AttributeValue type="Enumeration" value="SHA_1WithRSAEncryption"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Length"/>
        <AttributeValue type="Integer" value="2048"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <KeyFormatType type="Enumeration" value="PKCS_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="308204a502010002820101000ab7f161c0042496ccd6c6d4dadb9199734353
57776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d746483
46d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa
2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b650
89f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c
795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f
91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c281
5c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050
20301000102820100 3b12455d53c1816516c518493f6398aafa72b17dfa894db888a
7d48c0a47f62579a4e644f86da711fec850cdd9dbbd17f69a443d2ec1dd60d3c618f
a74cde5fdafabd6baa26eb0a3adb4def6480fb1218cd3b083e252e885b6f0729f98b
2144d2b72293e1b11d73393bc41f75b15ee3d7569b4995ed1a14425da4319b7b26b0
e8fef17c37542ae5c6d5849f87209567f3925a47b016d564859717bc57fcb4522d0a
a49ce816e5be7b3088193236ec9efff140858045b73c5d79baf38f7c67f04c5dcf0e
3806ad982d1259058c3473e847179a878f2c6b3bd968fb99ea46e9185892f3676e78
965c2aed4877ba3917df07c5e927474f19e764ba61dc38d63bf2902818100d5c69c8
c3cdc2464744a793713dafb9f1dbc799ff96423fecd3cba794286bce920f4b5c183f
99ee9028db6212c6277c4c8297fcfbce7f7c24ca4c51fc7182fb8f4019fb1d565967
4c5cbe6d5fa992051341760cd00735729a070a9e54d342beba8ef47ee82d3a01b04c
ec4a00d4ddb41e35116fc221e854b43a696c0e6419b1b02818100cd5ea7702789064
b673540cbff09356ad80bc3d592812eba47610b9fac6aecefe22acae438459cda74e
59653d88c04189d34399bf5b14b920e34ef38a7d09fe69593396e8fe735e6f0a6ae4
990401041d8a406b6fd86a1161e45f95a3eaa5c1012e6662e44f15f335ac971e1766
b2bb9c985109974141b44d37e1e319820a55f02818100b2871237bf9fad38c3316ab
7877a6a868063e542a7186d431e8d27c19ac0414584033942e9ff6e2973bb7b2d8b0
e94ad1ee82158108fbc8664517a5a467fb963014bd5dcc2b4fb087c23039d11920db
e22fd9f16b4d89e23225cd455adbaf32ef43f185864a36d630309d6853f7714b39aa
e1ebee3938f87c2707e178c739f9f028181009690bed14b2afaa26d986d592231ee2
7d71d49065bd2ba1f78157e20229881fd9d23227d0f8479eaefa922fd75d5b16b1a5
61fa6680b040ca0bdce650b23b917a4b1bb7983a74fad70e1c305cbec2bff1a85a72
6a1d90260e4f1084f518234dcd3fe770b9520215bd543bb6a4117718754676a34171
666a79f26e79c149c5aa102818100a0c985a0a0a791a659f99731134c44f37b2e520
a2cea35800ad27241ed360dfde6e8ca614f12047fd08b76ac4d13c056a0699e2f98a
1cac91011294d71208f4abab33ba87aa0517f415baca88d6bac006088fa601d34941
7e1f0c9b23affa4d496618dbc024986ed690bbb7b025768ff9df8ac15416f489f812
9c32341a8b44f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PrivateKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <KeyFormatType type="Enumeration" value="PKCS_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3082010a0282010100ab7f161c0042496ccd6c6d4dadb919973435357776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010001"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PublicKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="Certificate"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
      <Certificate>
        <CertificateType type="Enumeration" value="X_509"/>
        <CertificateValue type="ByteString"
value="308203123082001faa003020102020101300d06092a864886f70d010105050
0303b310b3009060355040613025553310d300b060355040a130454455354310e300
c060355040b13054f41534953310d300b060355040313044b4d4950301e170d31303
131303132333539353395a170d3230313130313233353939595a303b310b300906035
504061302555331 0d300b060355040a130454455354310e300c060355040b13054f4
1534953310d300b060355040313044b4d495030820122300d06092a864886f70d010
10105000382010f003082010a0282010100ab7f161c0042496ccd6c6d4dadb919973
435357776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74
648346d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc62
67fa2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8
b65089f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295
353c795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142c
b76f91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1
c2815c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f
605020301000 1a321301f301d0603551d0e0416041404e57bd2c431b2e816e180a19
823fac858273f6b300d06092a864886f70d01010505000382010100a876adbc6c8e0
ff017216e195fea76bff61a567c9a13dc50d13fec12a4273c441547cfabcb5d61d99
1e966319df72c0d41ba826a45112ff26089a2344f4d71cf7c921b4bdfaef1600d1ba
```

```
aa15336057e014b8b496d4fae9e8a6c1da9aeb6cbc960cbf2fae77f587ec4bb28204
5338845b88dd9aeea53e482a36e734e4f5f03b9d0dfc4cafc6bb34ea9053e52bd609
ee01e86d9b09fb51120c19834a997b09ce08d79e81311762f974bb1c8c09186c4d78
933e0db38e905084877e147c78af52fae07192ff166d19fa94a11cc11b27ed050f7a
27fae13b205a574c4ee00aa8bd65d0d7057c985c839ef336a441ed53a53c6b6b696f
1bdeb5f7ea811ebb25a7f86"/>
      </Certificate>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 10
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 11
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.26 TC-133-12 - Create, Re-key Key Pair

Create a public/private key pair on the server and retrieve the keys in PKCS_1 format. Re-key the key pair and retrieve the new public/private key pair in transparent format. To verify that the links are set correctly, the Link attributes are retrieved. Finally, all the keys are destroyed.

Note: a server is not required to support conversion between key formats so returning keys in Transparent form when registerd in PKCS_1 may not be supported.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="CreateKeyPair"/>
    <RequestPayload>
      <CommonTemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="RSA"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Length"/>
          <AttributeValue type="Integer" value="2048"/>
        </Attribute>
      </CommonTemplateAttribute>
      <PrivateKeyTemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-133-12-
privateKey1"/>
            <NameType type="Enumeration"
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
      </PrivateKeyTemplateAttribute>
      <PublicKeyTemplateAttribute>
```

```
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-133-12-publicKey1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
      </PublicKeyTemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:39+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="CreateKeyPair"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <PrivateKeyUniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <PublicKeyUniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <KeyFormatType type="Enumeration" value="PKCS_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:39+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="308204a30201000282010100b0612bccafdd11d41819a274526d68dbf3c3f
25667c402a0e0e8e4cce007ea6b6ea53699e8bd7ccab7d5ae66c00b28fd678b81ba1
d4e841c3a36caf13f852004633f80d840be7aad9bcdeabde11514b6ab3bce602e113
05cf5e9c34ebee32c3c468b9b146502738c0ae82e63ab8bd1fc4db0c6a09eb0c9f6e
01b9cc8d22317aedab328209a1dc5d2ce8529d81521c41730c1c8c76249d233e8909
6ca44dfeb469e3532bb90d6691c6932d0c63dbb7647c6e64337b719a1f100b1366cf
f3bbb213b17c716beb2c9ad88b3b76abacc378c4898636480fff1108e1fa1e7573c0
96606e21b18a05245ebd976701bb676dc2962a328d39385ef7571bc48ae134b37410
203010001028201003 7b71a3cd838bf0efe65ea9950085b9d4f4d5059d70165cb280
0a975c636f9e7e1d5b27fbfb34b9e459fec2d6cf0998c228f40f567988bc6d6e4c40
a9d04126f1062d8f276d134b36e8a0762df9ce72424c70993fc3955cba7aaa61553d
b32f7ff58ce2e0d124f29a7b05c2703e370fb80171d47539988d2c14c37a4802cb1a
7f5685bcc78865480ca4e5d367cafc8b533e610620f94f54a082effc4c4e50998410
dd32fa7dedae895200b56437fe177f47d1b373b5e8e0c62f64b3a19e5918be83e90a
1bbe195a4b516f3ceae6db35b0e4427858631dcbce6b1e49cf12345297df41e54d2c
bc2834c34e37bb92888e4659d232a4f3d22edeb9bff43b7881c7902818100eab3861
80dec393c70c8b00c5fae6a10e6b620ae82e5096ce11bf4c539a015165a7481227e9
1492748159d85317d1e81b780cca1cf19630a10987b940663a2496a4ead2ed4bfb70
17dc813e7a49017aa278b8ac1381ef27fde54ed4a1ee1e74812dcaee514cb9d48590
eb3972b26ba2f21de0aab64cfc1dbcba32561f5f31d6f02818100c062be5756e93eb
e005be752a5b7be2d35b342e483ff266cc9f595edbcffff603c8e03dcd9350a19fab
f434077f9543088132f0e843c2da6fe4f1cedee49a5eb9a8aea1219a41c1db392521
96137a041def9edcff43aa9280d90be137dbf48777e6055695f58fcc9cd6b07924fd
ab47a5553f5ad7b82d52553f6ec3f647ffe4f0281804221676d2baf1dc97bf5f034e
c58d6a6007bdce58f183df9a1cc20c1d9a4d38c42dc84ee553f569f6cde3a4e274d9
be4ecf1abb70405a1345accbc354f3f8fa0a4059b2290eb9c031d8fdc9bee70735a8
c5df330d241560ed574948fc7f7db1521cb70b43791cfb56cf28983d4b2cacf30f9c
183dd99f4839bf3523b31f3d89d0281806cbe63c0928bbcbf410cb1b071a36e87b77
6e034b2b7a24c93cb913794414f64625613b0ddc5b134061bde33ae9cec0d929ce55
85b3e78bf8fb7c02e6d268bf6a4a028b69a6fbcc4bd1fd3f02c9778aa43131a6d152
ba339d491201f7c5086f1a429679dec1b2ca814c88ebb11101a3b9bc79d72b601b9e
12398cae8fa31aed90281810099777cd45f0d1a862888eb2cf7ac14d22d75b88e99a
df66f15cccbd29979bf5eaa90bb8c29b29a8be1257425a9a2db2f493df4a740c7fbc
138e4b4d80f24e7ca11d63528d900ba2dd5c44da59e2d601544ec92681161f17b86c
838694a49a978f76ff05287bfce0704c6f3f9fa87551d0cf1a970b2cb130b5320783
a36ea8613"/>
```

```
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PrivateKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <KeyFormatType type="Enumeration" value="PKCS_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:39+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3082010a0282010100b0612bccafdd11d41819a274526d68dbf3c3f25667c
402a0e0e8e4cce007ea6b6ea53699e8bd7ccab7d5ae66c00b28fd678b81ba1d4e841
c3a36caf13f852004633f80d840be7aad9bcdeabde11514b6ab3bce602e11305cf5e
9c34ebee32c3c468b9b146502738c0ae82e63ab8bd1fc4db0c6a09eb0c9f6e01b9cc
8d22317aedab328209a1dc5d2ce8529d81521c41730c1c8c76249d233e89096ca44d
feb469e3532bb90d6691c6932d0c63dbb7647c6e64337b719a1f100b1366cff3bbb2
13b17c716beb2c9ad88b3b76abacc378c4898636480fff1108e1fa1e7573c096606e
21b18a05245ebd976701bb676dc2962a328d39385ef7571bc48ae134b37410203010
001"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PublicKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKeyKeyPair"/>
    <RequestPayload>
      <PrivateKeyUniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReKeyKeyPair"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <PrivateKeyUniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <PublicKeyUniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="f409f9adc43f836f"/>
    <RequestPayload>
      <MaximumItems type="Integer" value="1"/>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-133-12-privateKey1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PrivateKey"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="396c4d8b5bde0667"/>
    <RequestPayload>
      <KeyFormatType type="Enumeration" value="TransparentRSAPrivateKey"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="f409f9adc43f836f"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="396c4d8b5bde0667"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="TransparentRSAPrivateKey"/>
          <KeyValue>
            <KeyMaterial>
              <Modulus type="BigInteger"
value="0000000000000000eab4492bbb2364359408c57b8af47003572c81aaed719
ed92d9b13c741cc196b717d1c98f0c250580e37ac3ade11a7cd1aaede3a0424b53d3
3200510ce7eef71ded7e96e585d1d7ba3767a8dbfad4d2701b5831a34552a827fc2c
d398e659fd5063e1dfd28a994b0e6a7449bbad8dcf40e22943b841aa9e58519fa357
5b4409abfeb57f5723b45f7ce4e5277a2d0acccbcd49608d6ff8a7c933d4d70a9e8c
8df24829b58404a5af1b0d4c8668c35e3549e28204f2249bfc13b20c05ab0252c975
e53f604f68c6e498c7b14adb72debac91221a8eb1ad581080144eb8900b4bf9d9792
be37ec6191ad183e2b60b80174eecb66ca08c3ac07f51ba1c056130ec69"/>
              <PrivateExponent type="BigInteger"
value="42e22587e4c86d2227916855907f9ffc13b7872c228622725960bbfe286df
5407d12de376744b8889f64961c20747f911f6d7dbea2b7a33e51776a7a239e60b5d
e7f40f2451423f6bbda638a497925675c41519f0212d30e65422a21a0c6ad0993c1d
7e1f0d8829af6dfebd94521cfb56ce1c5c4401d2915531cd804ac0a35ee57d2a43ff
d7671aeaad0ab090f17f8419073445ac6fb218bd3c7c5beb9f3e7bf41e4e5f9632d8
492eb0cb2ada41083e040535ae409ad866d1998a0335f253cda2d21a95b2feebacee
64b969aaccab322fa0ecbc75c3f0c15c267dbf431abedecae191b72000b612e41e65
eb93c9f08eef67740b84ba32d9c5697ed91e1c8ccd1"/>
              <PublicExponent type="BigInteger"
value="0000000000010001"/>
              <P type="BigInteger"
value="0000000000000000f88c737435b8b3f5bdb2b2eb73dd5a665e2ee56c64e05
5169038f754ed3021d3e72ae82234dacd4a5fa12edeb4874b70c5915bba4571bef55
964389d8a4b8a79b628771bb4d634fbd18a27ab5fb6973309c4af9e27d269b1c4054
b62012d1c52847e3679f71f91cf7ff6b646c9edaafe5b46845fc1190fa0ef80b8a45
de63973"/>
              <Q type="BigInteger"
value="0000000000000000f1bd952150d189707c316486f20542968023050558 1b4
0ed503901bef82cec4e2a0a564c58365e8c82b7d34a0305d407194b1d15c273015d1
212969906267322827303b276d0c7585a21ee6758a74e95bfecc5b544686325754e5
d2602f0d5734c58f870aa2ca00e08122e940e4d6d0e11611d47966482df8845b8ff8
8d1fbb3"/>
              <PrimeExponentP type="BigInteger"
value="0000000000000000e9717156eac62a305b15a63ac33e5a13dfce0829c0ad7
afd904410f9b1350df0ab247f96f131b8b36c1245a562c5d833793cc77cb290dd1c2
ff393c1540d1368b1905c1ea7c0b14efb45d9707a9b5273db6ee2cb96f767d2511be
feb82d34dd0ab24a821f1dbb2e5c3788347058db696e43fdd40da6aa16534ce1f9e3
19b74c5"/>
              <PrimeExponentQ type="BigInteger"
value="0000000000000000eb6294819a364dc3afca507e6dcedd65ba635f1233166
6842d6734e204b989671adc71e768c5980eed819d4525e858ea88a07133ace15ae48
b227a6d8a658a1a823707d49088fe72736132c882b4767aae2518e64633f6c69490b
776b9ca53ad2f1c3add4976a66ac34521019d639adae5e5502352b7900fa49b6f65b
28df4ad"/>
              <CRTCoefficient type="BigInteger"
value="0000000000000000cc75a52cab58eb65878acf7c19070c0a495d5376f40b8
6531b98b1e3b44e28d39db55898db8aa317ce214814efdd00c1d234d4c27168710a1
a68cfdae310f1a56e17e1a51f43d069137beeb7a6aeef4da2b3dfde54d222e24c772
09dc5c8c831b8f09f816d3ee628e76e93bae2594229a59b36ea1f507be2db99ae358
896956e"/>
            </KeyMaterial>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
```

```
      </PrivateKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="5df01d7748d64a16"/>
    <RequestPayload>
      <MaximumItems type="Integer" value="1"/>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-133-12-publicKey1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PublicKey"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="7c7f588280a61c24"/>
    <RequestPayload>
      <KeyFormatType type="Enumeration" value="TransparentRSAPublicKey"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="5df01d7748d64a16"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
```

```
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_3"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="7c7f588280a61c24"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_3"/>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" 
value="TransparentRSAPublicKey"/>
          <KeyValue>
            <KeyMaterial>
              <Modulus type="BigInteger" 
value="0000000000000000eab4492bbb2364359408c57b8af47003572c81aaed719
ed92d9b13c741cc196b717d1c98f0c250580e37ac3ade11a7cd1aaede3a0424b53d3
3200510ce7eef71ded7e96e585d1d7ba3767a8dbfad4d2701b5831a34552a827fc2c
d398e659fd5063e1dfd28a994b0e6a7449bbad8dcf40e22943b841aa9e58519fa357
5b4409abfeb57f5723b45f7ce4e5277a2d0acccbcd49608d6ff8a7c933d4d70a9e8c
8df24829b58404a5af1b0d4c8668c35e3549e28204f2249bfc13b20c05ab0252c975
e53f604f68c6e498c7b14adb72debac91221a8eb1ad581080144eb8900b4bf9d9792
be37ec6191ad183e2b60b80174eecb66ca08c3ac07f51ba1c056130ec69"/>
              <PublicExponent type="BigInteger" 
value="0000000000010001"/>
            </KeyMaterial>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PublicKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="Link"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_2"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_3"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="ReplacedObjectLink"/>
          <LinkedObjectIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_3"/>
      <AttributeName type="TextString" value="Link"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="ReplacedObjectLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Link"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration"
value="ReplacementObjectLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Link"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="ReplacementObjectLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 11
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 12
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 13
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_3"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_3"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.27 TC-134-12 - Register Key Pair, Certify and Re-certify Public Key

Register a public/private key pair on the server. Request the server to have a certificate created using the Certify operation. Retrieve the certificate and its attributes, then execute the Re-certify operation to re-certify the public key. Finally, destroy all the objects.

The new KMIP 1.1 certificate DN attributes are retrieved as are the original (deprecated) KMIP 1.0 certificate DN attributes.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-134-12-
pubkey1"/>
        </Attribute>
      </TemplateAttribute>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3082010a0282010100ab7f161c0042496ccd6c6d4dadb919973435357776O
03acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b
8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89
b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f981
35b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328
abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013
da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612
a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010
001"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PublicKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PublicKeyLink"/>
            <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-134-12-
prikey1"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="308204a50201000282010100ab7f161c0042496ccd6c6d4dadb9199734353
```

```
57776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d746483
46d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa
2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b650
89f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c
795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f
91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c281
5c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050
203010001028201003b12455d53c1816516c518493f6398aafa72b17dfa894db888a
7d48c0a47f62579a4e644f86da711fec850cdd9dbbd17f69a443d2ec1dd60d3c618f
a74cde5fdafabd6baa26eb0a3adb4def6480fb1218cd3b083e252e885b6f0729f98b
2144d2b72293e1b11d73393bc41f75b15ee3d7569b4995ed1a14425da4319b7b26b0
e8fef17c37542ae5c6d5849f87209567f3925a47b016d564859717bc57fcb4522d0a
a49ce816e5be7b3088193236ec9efff140858045b73c5d79baf38f7c67f04c5dcf0e
3806ad982d1259058c3473e847179a878f2c6b3bd968fb99ea46e9185892f3676e78
965c2aed4877ba3917df07c5e927474f19e764ba61dc38d63bf2902818100d5c69c8
c3cdc2464744a793713dafb9f1dbc799ff96423fecd3cba794286bce920f4b5c183f
99ee9028db6212c6277c4c8297fcfbce7f7c24ca4c51fc7182fb8f4019fb1d565967
4c5cbe6d5fa992051341760cd00735729a070a9e54d342beba8ef47ee82d3a01b04c
ec4a00d4ddb41e35116fc221e854b43a696c0e6419b1b02818100cd5ea7702789064
b673540cbff09356ad80bc3d592812eba47610b9fac6aecefe22acae438459cda74e
59653d88c04189d34399bf5b14b920e34ef38a7d09fe69593396e8fe735e6f0a6ae4
990401041d8a406b6fd86a1161e45f95a3eaa5c1012e6662e44f15f335ac971e1766
b2bb9c985109974141b44d37e1e319820a55f02818100b2871237bf9fad38c3316ab
7877a6a868063e542a7186d431e8d27c19ac0414584033942e9ff6e2973bb7b2d8b0
e94ad1ee82158108fbc8664517a5a467fb963014bd5dcc2b4fb087c23039d11920db
e22fd9f16b4d89e23225cd455adbaf32ef43f185864a36d630309d6853f7714b39aa
e1ebee3938f87c2707e178c739f9f028181009690bed14b2afaa26d986d592231ee2
7d71d49065bd2ba1f78157e20229881fd9d23227d0f8479eaefa922fd75d5b16b1a5
61fa6680b040ca0bdce650b23b917a4b1bb7983a74fad70e1c305cbec2bff1a85a72
6a1d90260e4f1084f518234dcd3fe770b9520215bd543bb6a4117718754676a34171
666a79f26e79c149c5aa102818100a0c985a0a0a791a659f99731134c44f37b2e520
a2cea35800ad27241ed360dfde6e8ca614f12047fd08b76ac4d13c056a0699e2f98a
1cac91011294d71208f4abab33ba87aa0517f415baca88d6bac006088fa601d34941
7e1f0c9b23affa4d496618dbc024986ed690bbb7b025768ff9df8ac15416f489f812
9c32341a8b44f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Certify"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <CertificateRequestType type="Enumeration" value="PKCS_10"/>
      <CertificateRequest type="ByteString"
value="3082028130820169020100303c310b3009060355040613025553310d300b0
60355040a130441434d45310d300b060355040b13044b4d4950310f300d060355040
31306436c69656e7430820122300d06092a864886f70d01010105000382010f00308
2010a0282010100ab7f161c0042496ccd6c6d4dadb919973435357776003acf54b7a
f1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b8d71812b20
5387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89b9bee9e60a
1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f98135b1c67b70
1675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328abf70e1b42
e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013da809e9c1b
7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612a29a82d73a
1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010001a000300
d06092a864886f70d010105050003820101002d90f5492c3df1771df4e87e1087cb9
52197319a9696e2d588efda580d8d3304427b997cd921ad7c674aea413fba85fd61e
6a481de9ab2e8a4ff43c02655015d3437f783fe0c781519cd08ffd3c007c7fade963
2fe5659e2cac35bd6aaf3e13dc18097d996df01b66fc5e26ca109380863a209125cc
0fd79533f327fa1cad444d89d3ff81b92a91428c469c846090fd1324846e12d01671
962c332a7826152daaf486cc867185c2e27caf2f009898db07fe4b45c518192aa493
d8f8c0198db67f90672ab6de05a08032941377f473d80716d85adc6182003ab34942
302214eb3895f15403f2616adfd6bb5e6aa47fa38c9dfc73f4de80ddb91bdb04d21c
82ba6"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Verify Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-134-12-
certificate1"/>
            <NameType type="Enumeration"
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
```

```
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="2"/>
      </ProtocolVersion>
      <TimeStamp type="DateTime" value="2012-04-27T08:14:41+00:00"/>
      <BatchCount type="Integer" value="1"/>
    </ResponseHeader>
    <BatchItem>
      <Operation type="Enumeration" value="Certify"/>
      <ResultStatus type="Enumeration" value="Success"/>
      <ResponsePayload>
        <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
      </ResponsePayload>
    </BatchItem>
</ResponseMessage>
# TIME 4
<RequestMessage>
    <RequestHeader>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="2"/>
      </ProtocolVersion>
      <BatchCount type="Integer" value="1"/>
    </RequestHeader>
    <BatchItem>
      <Operation type="Enumeration" value="Get"/>
      <RequestPayload>
        <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
      </RequestPayload>
    </BatchItem>
</RequestMessage>
<ResponseMessage>
    <ResponseHeader>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="2"/>
      </ProtocolVersion>
      <TimeStamp type="DateTime" value="2013-06-18T08:55:57+00:00"/>
      <BatchCount type="Integer" value="1"/>
    </ResponseHeader>
    <BatchItem>
      <Operation type="Enumeration" value="Get"/>
      <ResultStatus type="Enumeration" value="Success"/>
      <ResponsePayload>
        <ObjectType type="Enumeration" value="Certificate"/>
        <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
        <Certificate>
          <CertificateType type="Enumeration" value="X_509"/>
          <CertificateValue type="ByteString"
value="30820277308201e0a0030201020209009bba23d1b6a48f97300d06092a864
886f70d01010b0500303b310b3009060355040613025553310d300b060355040a130
454455354310e300c060355040b13054f41534953310d300b060355040313044b4d4
950301e170d3133303631383038353535375a170d3134303631383038353535375a3
03c310b3009060355040613025553310d300b060355040a130441434d45310d300b0
60355040b13044b4d4950310f300d06035504031306436c69656e7430820122300d0
```

```
6092a864886f70d01010105000382010f003082010a0282010100ab7f161c0042496
ccd6c6d4dadb919973435357776003acf54b7af1e440afb80b64a8755f8002cfeba6
b184540a2d66086d74648346d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176
b7957c422e7d03fc6267fa2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a
41100f8aa214900df8b65089f98135b1c67b701675abdbc7d5721aac9d14a7f081fc
ec80b64e8a0ecc8295353c795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d2112
6eba8da7d0ca34142cb76f91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c
8d7cce8946a9ac99b1c2815c3612a29a82d73a1f99374fe30e54951662a6eda29c6f
c411335d5dc7426b0f6050203010001300d06092a864886f70d01010b05000381810
0c4fe08d5bd74239648c7faabaed0978527ac01a0fd17b8a65c0d92501c4eab3f487
511062eafedc1024e74dc6bfdaae7f66d1fdda7574f6db3f03c6de83586b52c593a4
671001a0531bc43eff4849880b07924b7a9a0236d5d64d82d4d8e42dcd3a72c80728
804f9ba7f0e80c3fe3eb09cb3ed7fbfbb2167c99be513ff9db0b6"/>
      </Certificate>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="Unique Identifier"/>
      <AttributeName type="TextString" value="Object Type"/>
      <AttributeName type="TextString" value="Certificate Type"/>
      <AttributeName type="TextString" value="Certificate
Identifier"/>
      <AttributeName type="TextString" value="Certificate Issuer"/>
      <AttributeName type="TextString" value="Certificate Length"/>
      <AttributeName type="TextString" value="Certificate Subject"/>
      <AttributeName type="TextString" value="Cryptographic Length"/>
      <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
      <AttributeName type="TextString" value="Digest"/>
      <AttributeName type="TextString" value="Digital Signature Algorithm"/>
      <AttributeName type="TextString" value="Fresh"/>
      <AttributeName type="TextString" value="Initial Date"/>
      <AttributeName type="TextString" value="Last Change Date"/>
      <AttributeName type="TextString" value="Lease Time"/>
      <AttributeName type="TextString" value="Link"/>
      <AttributeName type="TextString" value="Name"/>
      <AttributeName type="TextString" value="Original Creation Date"/>
      <AttributeName type="TextString" value="State"/>
      <AttributeName type="TextString" value="X.509 Certificate Identifier"/>
      <AttributeName type="TextString" value="X.509 Certificate Issuer"/>
      <AttributeName type="TextString" value="X.509 Certificate Subject"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="Certificate Identifier"/>
      <AttributeName type="TextString" value="Certificate Issuer"/>
      <AttributeName type="TextString" value="Certificate Subject"/>
      <AttributeName type="TextString" value="Certificate Type"/>
      <AttributeName type="TextString" value="Digital Signature Algorithm"/>
      <AttributeName type="TextString" value="Cryptographic Length"/>
      <AttributeName type="TextString" value="Certificate Length"/>
      <AttributeName type="TextString" value="X.509 Certificate Identifier"/>
      <AttributeName type="TextString" value="X.509 Certificate Issuer"/>
      <AttributeName type="TextString" value="X.509 Certificate Subject"/>
    </RequestPayload>
  </BatchItem>
```

```xml
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Identifier"/>
        <AttributeValue>
          <Issuer type="TextString" value="CN=KMIP,OU=OASIS,O=TEST,C=US"/>
          <SerialNumber type="TextString" value="9BBA23D1B6A48F97"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Issuer"/>
        <AttributeValue>
          <CertificateIssuerDistinguishedName type="TextString" value="CN=KMIP,OU=OASIS,O=TEST,C=US"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Subject"/>
        <AttributeValue>
          <CertificateSubjectDistinguishedName type="TextString" value="CN=Client,OU=KMIP,O=ACME,C=US"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Type"/>
        <AttributeValue type="Enumeration" value="X_509"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Digital Signature Algorithm"/>
        <AttributeValue type="Enumeration" value="SHA_256WithRSAEncryption"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Length"/>
        <AttributeValue type="Integer" value="2048"/>
      </Attribute>
      <Attribute>
```

```
        <AttributeName type="TextString" value="Certificate
Length"/>
        <AttributeValue type="Integer" value="635"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="X.509 Certificate
Identifier"/>
        <AttributeValue>
          <IssuerDistinguishedName type="ByteString"
value="303b310b3009060355040613025553310d300b060355040a130454455354
10e300c060355040b13054f41534953310d300b060355040313044b4d4950"/>
          <CertificateSerialNumber type="ByteString"
value="0209009bba23d1b6a48f97"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="X.509 Certificate
Issuer"/>
        <AttributeValue>
          <IssuerDistinguishedName type="ByteString"
value="303b310b3009060355040613025553310d300b060355040a130454455354
10e300c060355040b13054f41534953310d300b060355040313044b4d4950"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="X.509 Certificate
Subject"/>
        <AttributeValue>
          <SubjectDistinguishedName type="ByteString"
value="303c310b3009060355040613025553310d300b060355040a130441434d453
10d300b060355040b13044b4d4950310f300d06035504031306436c69656e74"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReCertify"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
      <CertificateRequestType type="Enumeration" value="PKCS_10"/>
      <CertificateRequest type="ByteString"
value="30820281308201690201003003c310b3009060355040613025553310d300b0
60355040a130441434d45310d300b060355040b13044b4d4950310f300d060355040
31306436c69656e7430820122300d06092a864886f70d01010105000382010f00308
2010a0282010100ab7f161c0042496ccd6c6d4dadb919973435357776003acf54b7a
f1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b8d71812b20
```

```
5387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89b9bee9e60a
1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f98135b1c67b70
1675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328abf70e1b42
e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013da809e9c1b
7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612a29a82d73a
1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010001a000300
d06092a864886f70d0101050500038201010002d90f5492c3df1771df4e87e1087cb9
52197319a9696e2d588efda580d8d3304427b997cd921ad7c674aea413fba85fd61e
6a481de9ab2e8a4ff43c02655015d3437f783fe0c781519cd08ffd3c007c7fade963
2fe5659e2cac35bd6aaf3e13dc18097d996df01b66fc5e26ca109380863a209125cc
0fd79533f327fa1cad444d89d3ff81b92a91428c469c846090fd1324846e12d01671
962c332a7826152daaf486cc867185c2e27caf2f009898db07fe4b45c518192aa493
d8f8c0198db67f90672ab6de05a08032941377f473d80716d85adc6182003ab34942
302214eb3895f15403f2616adfd6bb5e6aa47fa38c9dfc73f4de80ddb91bdb04d21c
82ba6"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Verify Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-134-12-
certificate2"/>
            <NameType type="Enumeration"
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ReCertify"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_3"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Link"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Link"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="CertificateLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="Link"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="ReplacementObjectLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 11
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
      <AttributeName type="TextString" value="Link"/>
      <AttributeName type="TextString" value="Certificate Identifier"/>
      <AttributeName type="TextString" value="Name"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-18T08:55:57+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="ReplacedObjectLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Certificate Identifier"/>
        <AttributeValue>
          <Issuer type="TextString" value="CN=KMIP,OU=OASIS,O=TEST,C=US"/>
          <SerialNumber type="TextString" value="CF77F7A23282BC12"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-134-12-certificate2"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-134-12-certificate1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 12
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 13
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 14
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 15
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_3"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_3"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.28 TC-141-12 - Key Wrapping using AES Key Wrap and No Encoding

Register a 128-bit AES key encryption key (KEK) with the Cryptographic Usage Mask attribute set to Wrap and the Cryptographic Parameters specifying NIST Key Wrap as the Block Cipher Mode. Subsequently, register another 128-bit AES data key (DEK). Retrieve the data key wrapped using the NIST Key Wrap algorithm and the KEK. The Encoding Option is set to No Encoding, which means that only the key material is wrapped as opposed to the whole TTLV-encoded Key Value structure being wrapped. Finally, destroy both keys to return the server to the initial state. The key material for both the KEK and the DEK are from the test vectors specified in Section 4.6 of [NISTKeyWrap].

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-141-12-key1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="WrapKey"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Parameters"/>
          <AttributeValue>
            <BlockCipherMode type="Enumeration" value="NISTKeyWrap"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Activation Date"/>
          <AttributeValue type="DateTime" value="$NOW-3600"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="000102030405060708090a0b0c0d0e0f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-141-12-key2"/>
            <NameType type="Enumeration"
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="00112233445566778899aabbccddeeff"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <KeyWrappingSpecification>
        <WrappingMethod type="Enumeration" value="Encrypt"/>
        <EncryptionKeyInformation>
          <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
          <CryptographicParameters>
            <BlockCipherMode type="Enumeration"
value="NISTKeyWrap"/>
          </CryptographicParameters>
        </EncryptionKeyInformation>
        <EncodingOption type="Enumeration" value="NoEncoding"/>
      </KeyWrappingSpecification>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue type="ByteString"
value="1fa68b0a8112b447aef34bd8fb5a7b829d3e862371d2cfe5"/>
```

```
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
          <KeyWrappingData>
            <WrappingMethod type="Enumeration" value="Encrypt"/>
            <EncryptionKeyInformation>
              <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
              <CryptographicParameters>
                <BlockCipherMode type="Enumeration" value="NISTKeyWrap"/>
              </CryptographicParameters>
            </EncryptionKeyInformation>
            <EncodingOption type="Enumeration" value="NoEncoding"/>
          </KeyWrappingData>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
```

```
value="00112233445566778899aabbccddeeff"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <RequestPayload>
```

```
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration" value="Unspecified"/>
      </RevocationReason>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.29 TC-142-12 - Key Wrapping using AES Key Wrap with Attributes

Register a 128-bit AES key encryption key (KEK) with the Cryptographic Usage Mask attribute set to Wrap and the Cryptographic Parameters specifying NIST Key Wrap as the Block Cipher Mode. Subsequently, register another 128-bit AES data key (DEK). Retrieve the DEK wrapped using the NIST Key Wrap algorithm and the KEK. The Cryptographic Usage Mask Attribute Name is specified, indicating to the server that this attribute is to be wrapped together with the key material. The Encoding Option field is omitted, which means that the default TTLV-encoding is used. Finally, destroy both keys to return the server to the initial state.

The key material for both the KEK and the DEK are from the test vectors specified in Section 4.6 of [NISTKeyWrap].

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-142-12-key1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="WrapKey"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Parameters"/>
          <AttributeValue>
            <BlockCipherMode type="Enumeration" value="NISTKeyWrap"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Activation Date"/>
          <AttributeValue type="DateTime" value="$NOW-3600"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="000102030405060708090a0b0c0d0e0f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:42+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-142-12-key2"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="00112233445566778899aabbccddeeff"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <KeyWrappingSpecification>
```

```
        <WrappingMethod type="Enumeration" value="Encrypt"/>
        <EncryptionKeyInformation>
          <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
          <CryptographicParameters>
            <BlockCipherMode type="Enumeration" value="NISTKeyWrap"/>
          </CryptographicParameters>
        </EncryptionKeyInformation>
        <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
      </KeyWrappingSpecification>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue type="ByteString" value="0dc0f8cb416e7b4422d85805d3dd80e49c6c75f763d1be99748de568e4eecdc05b94b1c1946fd3def14cfe184daada0daf07c93e038ceb9f501bdd8a82c7d6b33152dbf9d415924b9f13f6cb75ff880ab09dc862e473f74bdaf9398ec7695d41"/>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
          <KeyWrappingData>
            <WrappingMethod type="Enumeration" value="Encrypt"/>
            <EncryptionKeyInformation>
              <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
              <CryptographicParameters>
                <BlockCipherMode type="Enumeration" value="NISTKeyWrap"/>
              </CryptographicParameters>
            </EncryptionKeyInformation>
          </KeyWrappingData>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 3
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="00112233445566778899aabbccddeeff"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <RevocationReason>
        <RevocationReasonCode type="Enumeration"
value="Unspecified"/>
      </RevocationReason>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Revoke"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.30 TC-151-12 - Locate a Fresh Object from the Default Group

Locate a single fresh object from the default object group. Perform a Get Attribute to retrieve the value of the Fresh attribute to make sure that the key is fresh. Get the object (the kind of object returned depends on the server policy), and get the Fresh attribute again to verify that the object is no longer fresh. Finally, destroy the object. This test case illustrates only one possible behavior related to the default group. In this test case, it is assumed that the server has fresh objects available in the default group, or that it creates a new object on-the-fly as a consequence of the Locate request. It is also assumed that no other client retrieves the object after the Locate but before the batched Get Attributes request, thereby toggling the value of the Fresh attribute.

```
# TIME 0
<RequestMessage>  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="1e766d8a95d6e5d1"/>
    <RequestPayload>
      <MaximumItems type="Integer" value="1"/>
      <ObjectGroupMember type="Enumeration" value="GroupMemberFresh"/>
      <Attribute>
        <AttributeName type="TextString" value="Object Group"/>
        <AttributeValue type="TextString" value="default"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <UniqueBatchItemID type="ByteString" value="8650f83be5373722"/>
    <RequestPayload>
      <AttributeName type="TextString" value="Fresh"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="1e766d8a95d6e5d1"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <UniqueBatchItemID type="ByteString" value="8650f83be5373722"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
```

```
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Fresh"/>
        <AttributeValue type="Boolean" value="true"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="7fe09d434868ae14a0021ac19330f8d9226790d680e519f8ac25f42d72f60f0c"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Fresh"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Fresh"/>
        <AttributeValue type="Boolean" value="false"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.31 TC-152-12 - Client-side Group Management

Register two symmetric keys, both with the same (non-default) Object Group name specified and the Fresh attribute set to true. Get the Fresh attribute from both keys to make sure it was set. Perform three batched Locate and Get requests to get a fresh key from the group. The first two requests should return both the registered keys, whereas the third request should return no key. To clean up, destroy both keys. This test case assumes that the server supports and sets the Fresh attribute when requested to do so by the client.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Length"/>
          <AttributeValue type="Integer" value="256"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
```

```
Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Object Group"/>
          <AttributeValue type="TextString"
value="ClientFreshTest"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Fresh"/>
          <AttributeValue type="Boolean" value="true"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-152-12-key1"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="000102030405060708090a0b0c0d0e0f101112131415161718191a1b1c1d1
e1f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="256"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Object Group"/>
          <AttributeValue type="TextString" value="ClientFreshTest"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Fresh"/>
          <AttributeValue type="Boolean" value="true"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-152-12-key2"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="00112233445566778899aabbccddeeff000102030405060708090a0b0c0d0e0f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Fresh"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:43+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Fresh"/>
        <AttributeValue type="Boolean" value="true"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Fresh"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Fresh"/>
        <AttributeValue type="Boolean" value="true"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="294fb5e3e93f8ecc"/>
    <RequestPayload>
      <MaximumItems type="Integer" value="1"/>
      <ObjectGroupMember type="Enumeration" value="GroupMemberFresh"/>
      <Attribute>
        <AttributeName type="TextString" value="Object Group"/>
        <AttributeValue type="TextString" value="ClientFreshTest"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="9da79a935d4e4ae6"/>
    <RequestPayload>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="294fb5e3e93f8ecc"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="9da79a935d4e4ae6"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="000102030405060708090a0b0c0d0e0f101112131415161718191a1b1c1d1e1f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="85e3e21d14d6df1d"/>
    <RequestPayload>
      <MaximumItems type="Integer" value="1"/>
      <ObjectGroupMember type="Enumeration" value="GroupMemberFresh"/>
      <Attribute>
        <AttributeName type="TextString" value="Object Group"/>
        <AttributeValue type="TextString" value="ClientFreshTest"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="40feae5ec1bda875"/>
    <RequestPayload>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="85e3e21d14d6df1d"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="40feae5ec1bda875"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="00112233445566778899aabbccddeeff000102030405060708090a0b0c0d0e0f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="657339bdf375bfa2"/>
    <RequestPayload>
      <MaximumItems type="Integer" value="1"/>
      <ObjectGroupMember type="Enumeration" value="GroupMemberFresh"/>
      <Attribute>
        <AttributeName type="TextString" value="Object Group"/>
        <AttributeValue type="TextString" value="ClientFreshTest"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="5713c4911444b36e"/>
    <RequestPayload>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="657339bdf375bfa2"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="5713c4911444b36e"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="ItemNotFound"/>
    <ResultMessage type="TextString" value="NOT_FOUND"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.32 TC-153-12 - Default Object Group Member

This test case exercises the 'default' Object Group Member flag in the Locate request. Three keys are created on the server and put into the same group (the Object Group attribute is set to the same value for all keys). Thereafter, the client performs four batched Locate and Get requests, asking for the default object from the group. This test case assumes that the server policy is such that it serves objects from the group in a round-robin fashion. The pointer to the default object is advanced each time an object is retrieved using a Get request. The first three times Locate and Get is executed, the three keys are returned one after the other. When Locate and Get is executed for the fourth time, the first key is again returned. Finally, all keys are destroyed.

Note: there is no requirement for a server to implement support for any round-robin based allocation; this test case illustrates a server which supports such a policy.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="3"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <UniqueBatchItemID type="ByteString" value="75e8bdb337aec40e"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="256"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Object Group"/>
          <AttributeValue type="TextString" value="RoundRobinTestGroup"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-153-12-key1"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <UniqueBatchItemID type="ByteString" value="ac0e6e56e8d99f66"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="256"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Object Group"/>
          <AttributeValue type="TextString" value="RoundRobinTestGroup"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-153-12-key2"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Create"/>
    <UniqueBatchItemID type="ByteString" value="77e87d356ba09da1"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="256"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Object Group"/>
          <AttributeValue type="TextString" value="RoundRobinTestGroup"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-153-12-key3"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="3"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <UniqueBatchItemID type="ByteString" value="75e8bdb337aec40e"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <UniqueBatchItemID type="ByteString" value="ac0e6e56e8d99f66"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
```

```
        <ObjectType type="Enumeration" value="SymmetricKey"/>
        <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      </ResponsePayload>
    </BatchItem>
    <BatchItem>
      <Operation type="Enumeration" value="Create"/>
      <UniqueBatchItemID type="ByteString" value="77e87d356ba09da1"/>
      <ResultStatus type="Enumeration" value="Success"/>
      <ResponsePayload>
        <ObjectType type="Enumeration" value="SymmetricKey"/>
        <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      </ResponsePayload>
    </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="99e7a6ea0125bb67"/>
    <RequestPayload>
      <MaximumItems type="Integer" value="1"/>
      <ObjectGroupMember type="Enumeration" value="GroupMemberDefault"/>
      <Attribute>
        <AttributeName type="TextString" value="Object Group"/>
        <AttributeValue type="TextString" value="RoundRobinTestGroup"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="0efd9c2e346ee1cb"/>
    <RequestPayload>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="99e7a6ea0125bb67"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="0efd9c2e346ee1cb"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="bd13da8bce07ea6b89c4d110827bf6a8478cf95edca9bbc278ab04f4cbeec
ff0"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="0303428f37f17b8d"/>
    <RequestPayload>
      <MaximumItems type="Integer" value="1"/>
      <ObjectGroupMember type="Enumeration"
value="GroupMemberDefault"/>
      <Attribute>
        <AttributeName type="TextString" value="Object Group"/>
        <AttributeValue type="TextString"
value="RoundRobinTestGroup"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="dae46b60d9b6459b"/>
    <RequestPayload>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="0303428f37f17b8d"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="dae46b60d9b6459b"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="430bfb0cbc273e15326e3a23965f7704a13af37a642c37026c9a59694c83b7a3"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="863c27d7a0d3da5e"/>
    <RequestPayload>
      <MaximumItems type="Integer" value="1"/>
      <ObjectGroupMember type="Enumeration" value="GroupMemberDefault"/>
      <Attribute>
        <AttributeName type="TextString" value="Object Group"/>
        <AttributeValue type="TextString" value="RoundRobinTestGroup"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="c4617b3205e96fb2"/>
    <RequestPayload>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="863c27d7a0d3da5e"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="c4617b3205e96fb2"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="a51b38e400168a25f2f122d7b8543a00daf022e61677a08a33a834f5f52c3097"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="f1ce9893ee5bde19"/>
    <RequestPayload>
      <MaximumItems type="Integer" value="1"/>
      <ObjectGroupMember type="Enumeration" value="GroupMemberDefault"/>
      <Attribute>
        <AttributeName type="TextString" value="Object Group"/>
        <AttributeValue type="TextString" value="RoundRobinTestGroup"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="9a18dd11cc6ce394"/>
    <RequestPayload>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <UniqueBatchItemID type="ByteString" value="f1ce9893ee5bde19"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <UniqueBatchItemID type="ByteString" value="9a18dd11cc6ce394"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="bd13da8bce07ea6b89c4d110827bf6a8478cf95edca9bbc278ab04f4cbeecff0"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchErrorContinuationOption type="Enumeration" value="Continue"/>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="3"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="f4cf0a5614786eb7"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="dd55da10ebe91928"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="18334af52fee87fa"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="3"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="f4cf0a5614786eb7"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="dd55da10ebe91928"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <UniqueBatchItemID type="ByteString" value="18334af52fee87fa"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.33 TC-161-12 - Discover Versions

Exercise the Discover Versions operation in different ways in order to find out which versions a server supports, as well as to get a list of versions supported by both client and server.

This test case shows the expected responses from a KMIP 1.2 server that supports versions 1.2, 1.1 and 1.0, with 1.2 being the preferred version.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="DiscoverVersions"/>
    <RequestPayload>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2011-12-01T08:46:15+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DiscoverVersions"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="2"/>
      </ProtocolVersion>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="1"/>
      </ProtocolVersion>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="0"/>
      </ProtocolVersion>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DiscoverVersions"/>
    <RequestPayload>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="0"/>
      </ProtocolVersion>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2011-06-24T12:52:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DiscoverVersions"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="0"/>
      </ProtocolVersion>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DiscoverVersions"/>
    <RequestPayload>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="1"/>
      </ProtocolVersion>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2011-12-01T08:46:15+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DiscoverVersions"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="1"/>
      </ProtocolVersion>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 3
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DiscoverVersions"/>
    <RequestPayload>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="2"/>
      </ProtocolVersion>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2011-12-01T08:46:15+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DiscoverVersions"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="2"/>
      </ProtocolVersion>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DiscoverVersions"/>
    <RequestPayload>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="9"/>
        <ProtocolVersionMinor type="Integer" value="31"/>
      </ProtocolVersion>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2011-12-01T08:46:15+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DiscoverVersions"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.34 TC-171-12 - Handling of Attributes and Attribute Index Values

This test case illustrates the changes in Attribute and Attribute Index handling introduced in KMIP-1.1. A symmetric key is created on the server, and two Name attributes and the Contact Information attribute is specified for the key. A Get Attributes request containing the Object Type attribute name twice is sent, but this operation fails since a single Attribute Name cannot be specified more than once in a Get Attributes request. The Object Type Attribute is then requested once, and this request succeeds. Thereafter, the Contact Information Attribute is modified, with the Attribute Index value of 0 specified. The Name attribute is deleted without specifying the Attribute Index which succeeds (which would have failed under KMIP-1.0). Finally, the created key is destroyed.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Length"/>
          <AttributeValue type="Integer" value="256"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-171-12-name1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-171-12-name2"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Contact Information"/>
          <AttributeValue type="TextString" value="admin@localhost"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Object Type"/>
      <AttributeName type="TextString" value="Object Type"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="InvalidMessage"/>
    <ResultMessage type="TextString" value="Attribute Name specified
more than once: Object Type"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Object Type"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Contact Information"/>
        <AttributeIndex type="Integer" value="0"/>
        <AttributeValue type="TextString" value="donald@localhost"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Contact Information"/>
        <AttributeValue type="TextString" value="donald@localhost"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Name"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="DeleteAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Name"/>
        <AttributeValue>
          <NameValue type="TextString" value="TC-171-12-name1"/>
          <NameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:44+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.35 TC-181-12 - Digests of Symmetric Keys

Exercise the Digest attribute by registering two symmetric keys with the same key material but using different Key Format Type. The Digest Value for the key with the Key Format Type set to Transparent Symmetric Key is calculated on the TTLV-encoded Key Material structure, whereas the Digest Value for the key registered in the Raw Key Format Type is calculated on the raw Key Material Byte String. The server calculates the value of the mandatory Digest attribute instance using the Key Format Type used by the client when registering the keys. Thereafter, the client asks the server to create a symmetric key using the Create operation. In this situation, it is up to the server to choose what Key Format Type of the created key it uses to calculate the Digest Value.

Note: This test case assumes a server that does not compute any additional Digest attributes using another Hashing Algorithm and/or Key Format Type. A server is permitted to provide multiple Digest attributes.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="256"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-181-12-key1"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="0000111122223333444455556666777788889999aaaabbbbccccddddeeeeffff"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Digest"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Digest"/>
        <AttributeValue>
          <HashingAlgorithm type="Enumeration" value="SHA_256"/>
          <DigestValue type="ByteString" value="6c064fe051add11edc07727b594eb48711df843e08445bba2cd786bc16bc58e8"/>
          <KeyFormatType type="Enumeration" value="Raw"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="256"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-181-12-key2"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="TransparentSymmetricKey"/>
          <KeyValue>
            <KeyMaterial>
              <Key type="ByteString" value="000011112222333344445555666677778888999aaaabbbbccccddddeeeeffff"/>
            </KeyMaterial>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
```

```
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Digest"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Digest"/>
        <AttributeValue>
          <HashingAlgorithm type="Enumeration" value="SHA_256"/>
          <DigestValue type="ByteString" value="499ce96ff6f5e19fe9fe7a2fe4c3e92b88db0001a4e8df28d9966856b6c4b87c"/>
          <KeyFormatType type="Enumeration" value="TransparentSymmetricKey"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="256"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-181-12-key3"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="Digest"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <Attribute>
        <AttributeName type="TextString" value="Digest"/>
        <AttributeValue>
          <HashingAlgorithm type="Enumeration" value="SHA_256"/>
          <DigestValue type="ByteString" value="314b223505091db03325c638a6016cf7080d3b116eb3f4896b6d24d4ec2215f8"/>
          <KeyFormatType type="Enumeration" value="Raw"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <KeyFormatType type="Enumeration" value="Raw"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="c1a99ac4716d4ea787d40b449d7b816f0ce82772b463cbf3a042b3f8e81e7bb7"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.36 TC-182-12 - Digests of RSA Private Keys

Exercise the Digest attribute by registering two RSA private keys with the same key material but using different Key Format Type. The Digest Value for the key with the Key Format Type set to Transparent RSA Private Key is calculated on the TTLV-encoded Key Material structure, whereas the Digest Value for the key registered in the PKCS_1 Key Format Type is calculated on the Key Material Byte String. The server calculates the value of the mandatory Digest attribute instance using the Key Format Type used by the client when registering the keys.

Note: This test case assumes a server that does not compute any additional Digest attributes using another Hashing Algorithm and/or Key Format Type. A server is permitted to provide multiple Digest attributes.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
          <AttributeValue type="Enumeration" value="RSA"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Length"/>
          <AttributeValue type="Integer" value="2048"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-182-12-
prikey1"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="308204a50201000282010100ab7f161c0042496ccd6c6d4dadb9199734353
57776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d746483
46d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa
2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b650
89f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c
795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f
91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c281
5c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050
203010001028201003b12455d53c1816516c518493f6398aafa72b17dfa894db888a
7d48c0a47f62579a4e644f86da711fec850cdd9dbbd17f69a443d2ec1dd60d3c618f
a74cde5fdafabd6baa26eb0a3adb4def6480fb1218cd3b083e252e885b6f0729f98b
2144d2b72293e1b11d73393bc41f75b15ee3d7569b4995ed1a14425da4319b7b26b0
e8fef17c37542ae5c6d5849f87209567f3925a47b016d564859717bc57fcb4522d0a
a49ce816e5be7b3088193236ec9efff140858045b73c5d79baf38f7c67f04c5dcf0e
3806ad982d1259058c3473e847179a878f2c6b3bd968fb99ea46e9185892f3676e78
965c2aed4877ba3917df07c5e927474f19e764ba61dc38d63bf2902818100d5c69c8
c3cdc2464744a793713dafb9f1dbc799ff96423fecd3cba794286bce920f4b5c183f
99ee9028db6212c6277c4c8297fcfbce7f7c24ca4c51fc7182fb8f4019fb1d565967
4c5cbe6d5fa992051341760cd00735729a070a9e54d342beba8ef47ee82d3a01b04c
ec4a00d4ddb41e35116fc221e854b43a696c0e6419b1b02818100cd5ea7702789064
b673540cbff09356ad80bc3d592812eba47610b9fac6aecefe22acae438459cda74e
59653d88c04189d34399bf5b14b920e34ef38a7d09fe69593396e8fe735e6f0a6ae4
990401041d8a406b6fd86a1161e45f95a3eaa5c1012e6662e44f15f335ac971e1766
b2bb9c985109974141b44d37e1e319820a55f02818100b2871237bf9fad38c3316ab
7877a6a868063e542a7186d431e8d27c19ac0414584033942e9ff6e2973bb7b2d8b0
e94ad1ee82158108fbc8664517a5a467fb963014bd5dcc2b4fb087c23039d11920db
e22fd9f16b4d89e23225cd455adbaf32ef43f185864a36d630309d6853f7714b39aa
e1ebee3938f87c2707e178c739f9f028181009690bed14b2afaa26d986d592231ee2
7d71d49065bd2ba1f78157e20229881fd9d23227d0f8479eaefa922fd75d5b16b1a5
61fa6680b040ca0bdce650b23b917a4b1bb7983a74fad70e1c305cbec2bff1a85a72
```

```
6a1d90260e4f1084f518234dcd3fe770b9520215bd543bb6a4117718754676a34171
666a79f26e79c149c5aa102818100a0c985a0a0a791a659f99731134c44f37b2e520
a2cea35800ad27241ed360dfde6e8ca614f12047fd08b76ac4d13c056a0699e2f98a
1cac91011294d71208f4abab33ba87aa0517f415baca88d6bac006088fa601d34941
7e1f0c9b23affa4d496618dbc024986ed690bbb7b025768ff9df8ac15416f489f812
9c32341a8b44f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Digest"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Digest"/>
        <AttributeValue>
          <HashingAlgorithm type="Enumeration" value="SHA_256"/>
          <DigestValue type="ByteString" value="11110a01ed4589d9987c9ad60368e2b762f2b20c00946e1932c1605a18172f55"/>
          <KeyFormatType type="Enumeration" value="PKCS_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="RSA"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="2048"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-182-12-prikey2"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration"
value="TransparentRSAPrivateKey"/>
          <KeyValue>
            <KeyMaterial>
              <Modulus type="BigInteger"
value="0000000000000000ab7f161c0042496ccd6c6d4dadb919973435357776003
acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b8d
71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89b9
bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f98135
b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328ab
f70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013da
809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612a2
9a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f605"/>
              <PrivateExponent type="BigInteger"
value="3b12455d53c1816516c518493f6398aafa72b17dfa894db888a7d48c0a47f
62579a4e644f86da711fec850cdd9dbbd17f69a443d2ec1dd60d3c618fa74cde5fda
fabd6baa26eb0a3adb4def6480fb1218cd3b083e252e885b6f0729f98b2144d2b722
93e1b11d73393bc41f75b15ee3d7569b4995ed1a14425da4319b7b26b0e8fef17c37
542ae5c6d5849f87209567f3925a47b016d564859717bc57fcb4522d0aa49ce816e5
be7b3088193236ec9efff140858045b73c5d79baf38f7c67f04c5dcf0e3806ad982d
1259058c3473e847179a878f2c6b3bd968fb99ea46e9185892f3676e78965c2aed48
77ba3917df07c5e927474f19e764ba61dc38d63bf29"/>
              <PublicExponent type="BigInteger"
value="0000000000010001"/>
              <P type="BigInteger"
value="0000000000000000d5c69c8c3cdc2464744a793713dafb9f1dbc799ff9642
3fecd3cba794286bce920f4b5c183f99ee9028db6212c6277c4c8297fcfbce7f7c24
ca4c51fc7182fb8f4019fb1d5659674c5cbe6d5fa992051341760cd00735729a070a
9e54d342beba8ef47ee82d3a01b04cec4a00d4ddb41e35116fc221e854b43a696c0e
6419b1b"/>
              <Q type="BigInteger"
value="0000000000000000cd5ea7702789064b673540cbff09356ad80bc3d592812
eba47610b9fac6aecefe22acae438459cda74e59653d88c04189d34399bf5b14b920
e34ef38a7d09fe69593396e8fe735e6f0a6ae4990401041d8a406b6fd86a1161e45f
95a3eaa5c1012e6662e44f15f335ac971e1766b2bb9c985109974141b44d37e1e319
820a55f"/>
              <PrimeExponentP type="BigInteger"
value="0000000000000000b2871237bf9fad38c3316ab7877a6a868063e542a7186
d431e8d27c19ac0414584033942e9ff6e2973bb7b2d8b0e94ad1ee82158108fbc866
4517a5a467fb963014bd5dcc2b4fb087c23039d11920dbe22fd9f16b4d89e23225cd
455adbaf32ef43f185864a36d630309d6853f7714b39aae1ebee3938f87c2707e178
c739f9f"/>
              <PrimeExponentQ type="BigInteger"
value="00000000000000009690bed14b2afaa26d986d592231ee27d71d49065bd2b
a1f78157e20229881fd9d23227d0f8479eaefa922fd75d5b16b1a561fa6680b040ca
0bdce650b23b917a4b1bb7983a74fad70e1c305cbec2bff1a85a726a1d90260e4f10
84f518234dcd3fe770b9520215bd543bb6a4117718754676a34171666a79f26e79c1
49c5aa1"/>
              <CRTCoefficient type="BigInteger"
value="0000000000000000a0c985a0a0a791a659f99731134c44f37b2e520a2cea3
5800ad27241ed360dfde6e8ca614f12047fd08b76ac4d13c056a0699e2f98a1cac91
011294d71208f4abab33ba87aa0517f415baca88d6bac006088fa601d349417e1f0c
9b23affa4d496618dbc024986ed690bbb7b025768ff9df8ac15416f489f8129c3234
1a8b44f"/>
            </KeyMaterial>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Digest"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:45+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Digest"/>
        <AttributeValue>
          <HashingAlgorithm type="Enumeration" value="SHA_256"/>
          <DigestValue type="ByteString" value="d73bbc51e83332935f912dbfc35c5efc3b7bf8021835ba86b8da4181f74244ac"/>
          <KeyFormatType type="Enumeration" value="TransparentRSAPrivateKey"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:46+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:46+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.37 TC-NP-1-12 - Put

In this test case the client issues a Create request, whereby the server creates a new symmetric key and returns the Unique Identifier. To clean up, the client then performs a Destroy operation to destroy the key.

The server sends Put messages to the client via a separate channel.

```
# TIME 0
# [Client-to-Server]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
```

```
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-NP-1-12"/>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Client-to-Server]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:13:47+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
# [Server-to-Client]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Put"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <PutFunction type="Enumeration" value="New"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="7546ef6cd37c49806824984477987d1e"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
      <Attribute>
        <AttributeName type="TextString" value="x-ID"/>
        <AttributeValue type="TextString" value="TC-NP-1-12"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Unique Identifier"/>
        <AttributeValue type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Algorithm"/>
        <AttributeValue type="Enumeration" value="AES"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Length"/>
        <AttributeValue type="Integer" value="128"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
        <AttributeValue type="Integer" value="Decrypt Encrypt"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Digest"/>
        <AttributeValue>
          <HashingAlgorithm type="Enumeration" value="SHA_256"/>
          <DigestValue type="ByteString" value="7549ecda2cd1569974c3748f223fbc947ce9cabce581497522e4b75e9d6ede81"/>
          <KeyFormatType type="Enumeration" value="Raw"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Fresh"/>
        <AttributeValue type="Boolean" value="true"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Initial Date"/>
        <AttributeValue type="DateTime" value="2013-06-26T05:13:48+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Last Change Date"/>
        <AttributeValue type="DateTime" value="2013-06-26T05:13:48+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Lease Time"/>
        <AttributeValue type="Interval" value="3600"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Original Creation Date"/>
        <AttributeValue type="DateTime" value="2013-06-26T05:13:48+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="PreActive"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Server-to-Client]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:13:48+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Put"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
# [Client-to-Server]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
```

```
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Client-to-Server]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:13:48+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.38 TC-NP-2-12 - Notify & Put

This test case tests the import of key using the Register operation. To validate that the registered key is treated the same as a locally created key, an attribute is added to the key and then modified. Finally, the key is destroyed.

The server sends Notify and Put messages to the client via a separate channel.

```
# TIME 0
# [Client-to-Server]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-NP-2-12"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="1122456789abcdef0123456789abcdef"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Client-to-Server]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
# [Server-to-Client]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Put"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <PutFunction type="Enumeration" value="New"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
```

```
value="1122456789abcdef0123456789abcdef"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
      <Attribute>
        <AttributeName type="TextString" value="x-ID"/>
        <AttributeValue type="TextString" value="TC-NP-2-12"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Unique Identifier"/>
        <AttributeValue type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="SymmetricKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Algorithm"/>
        <AttributeValue type="Enumeration" value="AES"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Length"/>
        <AttributeValue type="Integer" value="128"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
        <AttributeValue type="Integer" value="Encrypt"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Digest"/>
        <AttributeValue>
          <HashingAlgorithm type="Enumeration" value="SHA_256"/>
          <DigestValue type="ByteString" value="47c01d3851ce2f254d18928526b6126de30cef9a34a4cfbd4648ec3ed21a9e86"/>
          <KeyFormatType type="Enumeration" value="Raw"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Fresh"/>
        <AttributeValue type="Boolean" value="true"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Initial Date"/>
        <AttributeValue type="DateTime" value="2013-06-26T05:54:18+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Last Change Date"/>
        <AttributeValue type="DateTime" value="2013-06-26T05:54:18+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Lease Time"/>
        <AttributeValue type="Interval" value="3600"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="PreActive"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Server-to-Client]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Put"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
# [Client-to-Server]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="unknown"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Client-to-Server]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="unknown"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
# [Server-to-Client]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Notify"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="unknown"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Last Change Date"/>
        <AttributeValue type="DateTime" value="2013-06-26T05:54:18+00:00"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Server-to-Client]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Notify"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
# [Client-to-Server]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="third party"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Client-to-Server]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="ModifyAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="third party"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
# [Server-to-Client]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Notify"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="x-provider"/>
        <AttributeValue type="TextString" value="third party"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Last Change Date"/>
        <AttributeValue type="DateTime" value="2013-06-26T05:54:18+00:00"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Server-to-Client]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Notify"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
# [Client-to-Server]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Client-to-Server]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
# [Server-to-Client]
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Notify"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Last Change Date"/>
        <AttributeValue type="DateTime" value="2013-06-26T05:54:18+00:00"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="State"/>
        <AttributeValue type="Enumeration" value="Destroyed"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# [Server-to-Client]
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="0"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-26T05:54:18+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Notify"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.39 TC-ECC-1-12 - Register an ECC Key Pair

EC recommended curve is secp256k1

- Private Key format ECPrivateKey - http://tools.ietf.org/html/rfc5915

- Public Key format SubjectPublicKeyInfo - http://tools.ietf.org/html/rfc5480

Register a EC private key in the ECPrivateKey key format, then register the corresponding public key, in X.509 (SubjectPublicKeyInfo) format, with the Link attribute pointing to the previously registered private key. Then add the Link attribute to the private key, and perform Locate operations to find the public and private keys using the Link attribute. Get both the private and public keys in default format, then destroy both the private and the public key.

```
-----BEGIN EC PRIVATE KEY-----
MHQCAQEEINtNEowwyjCeYsQBl1jAC6JE3WTZv1KjEHiGa4oAwZxooAcGBSuBBAAK
oUQDQgAE2rXTwlMRPbQUq/wcDr9aAlWeZWqhyLCqjYcKoDJM2kiZkl6h5tvCWabH
glz0ZZKsdZTMQL1gS3KNiLY28xfTZg==
-----END EC PRIVATE KEY-----

-----BEGIN PUBLIC KEY-----
MFYwEAYHKoZIzj0CAQYFK4EEAAoDQgAE2rXTwlMRPbQUq/wcDr9aAlWeZWqhyLCq
jYcKoDJM2kiZkl6h5tvCWabHglz0ZZKsdZTMQL1gS3KNiLY28xfTZg==
-----END PUBLIC KEY-----
```

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-ECC-1-12-prikey1"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="ECPrivateKey"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="30740201010420db4d128c30ca309e62c4019758c00ba244dd64d9bf52a31078866b8a00c19c68a00706052b8104000aa14403420004dab5d3c253113db414abfc1c0ebf5a02559e656aa1c8b0aa8d870aa0324cda4899925ea1e6dbc259a6c7825cf46592ac7594cc40bd604b728d88b636f317d366"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="EC"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <TemplateAttribute>
        <Attribute>
```

```
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PrivateKeyLink"/>
            <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-ECC-1-12-pubkey1"/>
        </Attribute>
      </TemplateAttribute>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="X_509"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="3056301006072a8648ce3d020106052b8104000a03420004dab5d3c253113db414abfc1c0ebf5a02559e656aa1c8b0aa8d870aa0324cda4899925ea1e6dbc259a6c7825cf46592ac7594cc40bd604b728d88b636f317d366"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="EC"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PublicKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PublicKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PrivateKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <PrivateKey>
```

```
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="ECPrivateKey"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="30740201010420db4d128c30ca309e62c4019758c00ba244dd64d9bf52a31
078866b8a00c19c68a00706052b8104000aa14403420004dab5d3c253113db414abf
c1c0ebf5a02559e656aa1c8b0aa8d870aa0324cda4899925ea1e6dbc259a6c7825cf
46592ac7594cc40bd604b728d88b636f317d366"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="EC"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PrivateKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
       <PublicKey>
      <KeyBlock>
        <KeyFormatType type="Enumeration" value="X_509"/>
        <KeyValue>
          <KeyMaterial type="ByteString"
value="3056301006072a8648ce3d020106052b8104000a03420004dab5d3c253113
db414abfc1c0ebf5a02559e656aa1c8b0aa8d870aa0324cda4899925ea1e6dbc259a
6c7825cf46592ac7594cc40bd604b728d88b636f317d366"/>
```

```
        </KeyValue>
        <CryptographicAlgorithm type="Enumeration" value="EC"/>
        <CryptographicLength type="Integer" value="256"/>
      </KeyBlock>
      </PublicKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.40 TC-ECC-2-12 - Register an ECC Key Pair in PKCS8 Format

EC recommended curve is secp256k1

- Public Key format SubjectPublicKeyInfo - http://tools.ietf.org/html/rfc5480

Register a EC private key in PKCS8 key format (with passphrase 'secret' using pbeWithSHAAnd3-KeyTripleDES-CBC), then register the corresponding public key, in X.509 (SubjectPublicKeyInfo) format, with the Link attribute pointing to the previously registered private key. Then add the Link attribute to the private key, and perform Locate operations to find the public and private keys using the Link attribute. Get both the private and public keys in default format, then destroy both the private and the public key.

```
-----BEGIN ENCRYPTED PRIVATE KEY-----
MIGpMBwGCiqGSIb3DQEMAQMwDgQIrlU0TS8GObcCAggABIGIA7njjI0W9Cmq6ORn
eFHqc9yko1oSsvg8aETKc4sZxLOAHG2u5RcHqOIWvXLTQmzU8m3yZhlZDz1OIJfg
w2X8XZ2gPAo8CAkbuZRO21wzey2ZZnigF2u3z6PtX+fyyxn6jOou17SeaYp0OUx0
ovFD2eJEWlcOa9TkBeVhK4ziaHHuv0jH5Wxt4A==
-----END ENCRYPTED PRIVATE KEY-----

-----BEGIN PUBLIC KEY-----
MFYwEAYHKoZIzj0CAQYFK4EEAAoDQgAE2rXTwlMRPbQUq/wcDr9aAlWeZWqhyLCq
jYcKoDJM2kiZkl6h5tvCWabHglz0ZZKsdZTMQL1gS3KNiLY28xfTZg==
-----END PUBLIC KEY-----
```

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-ECC-2-12-
prikey1"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_8"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="3081a9301c060a2a864886f70d010c0103300e0408dc4dc656aa7bcc04020
20800048188824b0a6786064a1d5686b852d8ff3073cb3379397dee978c60031353e
1835a1a3c6289f16ff617b2d8b2d32829c265b997b406a69b96894caa39cee1c556c
da380e7174271606a4dfde4bc6182943de6e827573ce3d877b72f1cdd3a59a3721b3
4740466fa43390ab29fb8ac01df172f9af6bb222aeee0f9be744b425e9620902ebc7
6ab8ceaa555"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="EC"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
```

```
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PrivateKeyLink"/>
            <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-ECC-2-12-pubkey1"/>
        </Attribute>
      </TemplateAttribute>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="X_509"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="3056301006072a8648ce3d020106052b8104000a03420004dab5d3c253113db414abfc1c0ebf5a02559e656aa1c8b0aa8d870aa0324cda4899925ea1e6dbc259a6c7825cf46592ac7594cc40bd604b728d88b636f317d366"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="EC"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PublicKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_1"/>
```

```
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PublicKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PrivateKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="PKCS_8"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="307402010104 20db4d128c30ca309e62c4019758c00ba244dd64d9bf52a31078866b8a00c19c68a00706052b8104000aa14403420004dab5d3c253113db414abfc1c0ebf5a02559e656aa1c8b0aa8d870aa0324cda4899925ea1e6dbc259a6c7825cf46592ac7594cc40bd604b728d88b636f317d366"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="EC"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PrivateKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
       <PublicKey>
      <KeyBlock>
        <KeyFormatType type="Enumeration" value="X_509"/>
        <KeyValue>
          <KeyMaterial type="ByteString"
value="3056301006072a8648ce3d020106052b8104000a03420004dab5d3c253113
db414abfc1c0ebf5a02559e656aa1c8b0aa8d870aa0324cda4899925ea1e6dbc259a
6c7825cf46592ac7594cc40bd604b728d88b636f317d366"/>
        </KeyValue>
        <CryptographicAlgorithm type="Enumeration" value="EC"/>
        <CryptographicLength type="Integer" value="256"/>
      </KeyBlock>
      </PublicKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
```

```
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.41 TC-ECC-3-12 - Register an ECC Key Pair and ECDSA Certificate

EC recommended curve is secp256k1

- Private Key format ECPrivateKey - http://tools.ietf.org/html/rfc5915

- Public Key format SubjectPublicKeyInfo - http://tools.ietf.org/html/rfc5480

Register a EC private key in the ECPrivateKey key format, then register the corresponding public key, in X.509 (SubjectPublicKeyInfo) format, and a corresponding ECDSA certificate, with the Link attribute pointing to the previously registered private key. Return the attribute values for the ECDSA certificate showing the correct server parsing of the certificate. Then add the Link attribute to the private key, and perform Locate operations to find the public and private keys using the Link attribute. Get both the private and public keys in default format, then destroy both the private and the public key.

```
-----BEGIN EC PRIVATE KEY-----
MHQCAQEEINtNEowwyjCeYsQBl1jAC6JE3WTZv1KjEHiGa4oAwZxooAcGBSuBBAAK
oUQDQgAE2rXTwlMRPbQUq/wcDr9aAlWeZWqhyLCqjYcKoDJM2kiZkl6h5tvCWabH
glz0ZZKsdZTMQL1gS3KNiLY28xfTZg==
-----END EC PRIVATE KEY-----

-----BEGIN PUBLIC KEY-----
MFYwEAYHKoZIzj0CAQYFK4EEAAoDQgAE2rXTwlMRPbQUq/wcDr9aAlWeZWqhyLCq
jYcKoDJM2kiZkl6h5tvCWabHglz0ZZKsdZTMQL1gS3KNiLY28xfTZg==
-----END PUBLIC KEY-----

-----BEGIN CERTIFICATE-----
MIIB1TCCAXqgAwIBAgIJAOwLdAIZbVKVMAoGCCqGSM49BAMCMEgxCzAJBgNVBAYT
AlVTMQ0wCwYDVQQKDARURVNUMQ4wDAYDVQQLDAVPQVNJUzEaMBgGA1UEAwwRS01J
UC1FQy1zZWNwMjU2azEwHhcNMTMwNjI1MTAzMzExWhcNMjMwNjIzMTAzMzExWjBI
MQswCQYDVQQGEwJVUzENMAsGA1UECgwEVEVTVDEOMAwGA1UECwwFT0FTSVMxGjAY
BgNVBAMMEUtNSVAtRUMtc2VjcDI1NmsxMFYwEAYHKoZIzj0CAQYFK4EEAAoDQgAE
2rXTwlMRPbQUq/wcDr9aAlWeZWqhyLCqjYcKoDJM2kiZkl6h5tvCWabHglz0ZZKs
dZTMQL1gS3KNiLY28xfTZqNQME4wHQYDVR0OBBYEFKCY1LuogX9+lQaMh1++yFCz
4XegMB8GA1UdIwQYMBaAFKCY1LuogX9+lQaMh1++yFCz4XegMAwGA1UdEwQFMAMB
Af8wCgYIKoZIzj0EAwIDSQAwRgIhAOnNFLY+PlfdJt37p3o+0dBbNyFFT2F1Cd/z
ua8C1PWuAiEAya/vk0S4+LEsUltGGNw2Ibzn+LOQrAH/vmhsx2Qcdrs=
-----END CERTIFICATE-----
```

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-ECC-3-12-prikey1"/>
        </Attribute>
      </TemplateAttribute>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="ECPrivateKey"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="30740201010420db4d128c30ca309e62c4019758c00ba244dd64d9bf52a31078866b8a00c19c68a00706052b8104000aa14403420004dab5d3c253113db414abfc1c0ebf5a02559e656aa1c8b0aa8d870aa0324cda4899925ea1e6dbc259a6c7825cf46592ac7594cc40bd604b728d88b636f317d366"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="EC"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PrivateKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Verify"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
```

```
            <LinkType type="Enumeration" value="PrivateKeyLink"/>
            <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-ECC-3-12-pubkey1"/>
        </Attribute>
      </TemplateAttribute>
      <PublicKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="X_509"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="3056301006072a8648ce3d020106052b8104000a03420004dab5d3c253113db414abfc1c0ebf5a02559e656aa1c8b0aa8d870aa0324cda4899925ea1e6dbc259a6c7825cf46592ac7594cc40bd604b728d88b636f317d366"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="EC"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PublicKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
```

```
      <ObjectType type="Enumeration" value="Certificate"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Verify Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PublicKeyLink"/>
            <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-ECC-3-12-cert1"/>
        </Attribute>
      </TemplateAttribute>
      <Certificate>
        <CertificateType type="Enumeration" value="X_509"/>
        <CertificateValue type="ByteString"
value="308201d53082017aa003020102020900ec0b7402196d5295300a06082a864
8ce3d040302304831 0b3009060355040613025553310d300b060355040a0c0454455
354310e300c060355040b0c054f41534953311a301806035504030c114b4d49502d4
5432d736563703235366b31301e170d3133303632353130333331315a170d3233303
6323331303333331315a3048310b3009060355040613025553310d300b060355040a0
c0454455354310e300c060355040b0c054f41534953311a301806035504030c114b4
d49502d45432d736563703235366b3130563010 06072a8648ce3d020106052b81040
00a03420004dab5d3c253113db414abfc1c0ebf5a02559e656aa1c8b0aa8d870aa03
24cda4899925ea1e6dbc259a6c7825cf46592ac7594cc40bd604b728d88b636f317d
366a350304e301d0603551d0e04160414a098d4bba8817f7e95068c875fbec850b3e
177a0301f0603551d23041830168014a098d4bba8817f7e95068c875fbec850b3e17
7a0300c0603551d13040530030101ff300a06082a8648ce3d040302034900304602 2
100e9cd14b63e3e57dd26ddfba77a3ed1d05b3721454f617509dff3b9af02d4f5ae0
22100c9afef9344b8f8b12c525b4618dc3621bce7f8b390ac01ffbe686cc7641c76b
b"/>
      </Certificate>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="2"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="01"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="02"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="CertificateLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="2"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="01"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="02"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="CertificateLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="x-ID"/>
      <AttributeName type="TextString" value="Unique Identifier"/>
      <AttributeName type="TextString" value="Object Type"/>
      <AttributeName type="TextString" value="Certificate Type"/>
      <AttributeName type="TextString" value="Certificate Identifier"/>
      <AttributeName type="TextString" value="Certificate Issuer"/>
      <AttributeName type="TextString" value="Certificate Length"/>
      <AttributeName type="TextString" value="Certificate Subject"/>
      <AttributeName type="TextString" value="Cryptographic Length"/>
      <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
      <AttributeName type="TextString" value="Digest"/>
      <AttributeName type="TextString" value="Digital Signature Algorithm"/>
      <AttributeName type="TextString" value="Fresh"/>
      <AttributeName type="TextString" value="Initial Date"/>
      <AttributeName type="TextString" value="Last Change Date"/>
      <AttributeName type="TextString" value="Lease Time"/>
      <AttributeName type="TextString" value="Link"/>
      <AttributeName type="TextString" value="State"/>
      <AttributeName type="TextString" value="X.509 Certificate Identifier"/>
      <AttributeName type="TextString" value="X.509 Certificate Issuer"/>
      <AttributeName type="TextString" value="X.509 Certificate Subject"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <AttributeName type="TextString" value="Digital Signature Algorithm"/>
      <AttributeName type="TextString" value="X.509 Certificate
```

```
Identifier"/>
      <AttributeName type="TextString" value="X.509 Certificate
Issuer"/>
      <AttributeName type="TextString" value="X.509 Certificate
Subject"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
      <Attribute>
        <AttributeName type="TextString" value="Digital Signature
Algorithm"/>
        <AttributeValue type="Enumeration" value="ECDSAWithSHA256"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="X.509 Certificate
Identifier"/>
        <AttributeValue>
          <IssuerDistinguishedName type="ByteString"
value="3048310b3009060355040613025553310d300b060355040a0c04544553543
10e300c060355040b0c054f41534953311a301806035504030c114b4d49502d45432
d736563703235366b31"/>
          <CertificateSerialNumber type="ByteString"
value="020900ec0b7402196d5295"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="X.509 Certificate
Issuer"/>
        <AttributeValue>
          <IssuerDistinguishedName type="ByteString"
value="3048310b3009060355040613025553310d300b060355040a0c04544553543
10e300c060355040b0c054f41534953311a301806035504030c114b4d49502d45432
d736563703235366b31"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="X.509 Certificate
Subject"/>
        <AttributeValue>
          <SubjectDistinguishedName type="ByteString"
value="3048310b3009060355040613025553310d300b060355040a0c04544553543
10e300c060355040b0c054f41534953311a301806035504030c114b4d49502d45432
```

```
d736563703235366b31"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PublicKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Object Type"/>
        <AttributeValue type="Enumeration" value="PrivateKey"/>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PublicKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PrivateKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <PrivateKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="ECPrivateKey"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="30740201010420db4d128c30ca309e62c4019758c00ba244dd64d9bf52a31
078866b8a00c19c68a00706052b8104000aa14403420004dab5d3c253113db414abf
c1c0ebf5a02559e656aa1c8b0aa8d870aa0324cda4899925ea1e6dbc259a6c7825cf
46592ac7594cc40bd604b728d88b636f317d366"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="EC"/>
          <CryptographicLength type="Integer" value="256"/>
        </KeyBlock>
      </PrivateKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PublicKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
       <PublicKey>
      <KeyBlock>
        <KeyFormatType type="Enumeration" value="X_509"/>
        <KeyValue>
          <KeyMaterial type="ByteString"
value="3056301006072a8648ce3d020106052b8104000a03420004dab5d3c253113
db414abfc1c0ebf5a02559e656aa1c8b0aa8d870aa0324cda4899925ea1e6dbc259a
6c7825cf46592ac7594cc40bd604b728d88b636f317d366"/>
        </KeyValue>
        <CryptographicAlgorithm type="Enumeration" value="EC"/>
        <CryptographicLength type="Integer" value="256"/>
      </KeyBlock>
      </PublicKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
```

```
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 11
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 12
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.42 TC-PGP-1-12 - Register PGP Key - RSA

Register a PGP public and private key block. Add the appropriate links between the registered objects. Make sure everything was registered and the attributes set correctly by listing and retrieving the attributes. Get the keys, and finally destroy all the registered objects.

Note: the ascii armored keys are:

```
-----BEGIN PGP PUBLIC KEY BLOCK-----

mQENBFHA/dQBCADged9e6tib8klFhPpwSni1JseckqjSL5wT1QKKmJMMRyI1Ru5R
rJSBcRwjOoaaRdavnZEJ1xujU32Zj+2H2sqs6sSnizCNnkF5HCWO2J3b5M5vPkdG
PYqrlcv7lvP8P0wjcTOueDxnSgx6Ijn4QDjd+tLnTxTK8U0YhzsGZCwu+3S6kwhg
xlWSz+39oP0kT58+Jvnlx8vowtvqZ+7npqrMOojIVedFSfk+z2Co1UObj6l+xzTt
1kqQZfXC/yyMAFwTKcPEy/KCw6u2bzvouZMM3dkgfU/AuqqpKSBABH0Z/blnC2Ty
QdSuOKxzgcyIBcW5wRnKtjstWW9YCf/jI6EtABEBAAG0T0tNSVAgVVNFUiBSU0Eg
KE9BU0lTIEtleSBNYW5hZ2VtZW50IEludGVyb3BlcmFiaWxpdHkgUHJvdG9jb2wp
IDxrbWlwM0BrbWlwLmNvbT6JATYEEwECACAFAlHA/dQCGy8GCwkIBwMCBBUCCAME
FgIDAQIeAQIXgAAKCRAkDBezbMoNJkd1B/9PLphGbxPO27yeyX9CnZ/ZsRPbGVHW
XmMR2riXoBXB1FR4dlV/Xngrevk4SZBXFIKx2w0hppSQVgrBKYCms/hFCKScVaVb
cNQy8L0Q5TNjFPzxyUAP8MLUFu+Rr5OIiPIYuGFM26QnTBfDFOhDh7Mvjj2wWUuZ
b2oV6i6gj97mfyNJ1mJHfr+MbO6hBebAPvns6kYivSDyrGr06cpUatoeh0+2YN25
XdEmDk0bqy9kpJMwHjjULkwnsFjbv+KhXxl2jG6mlEqNiAiUVPftXY4yKmTfiBZa
4J0j04omkU8Jj4fvlkOo2o6kbs+htqD+J5WHxmX1TosgrfzuV8z5Mt7U
=nVOy
-----END PGP PUBLIC KEY BLOCK-----

-----BEGIN PGP PRIVATE KEY BLOCK-----

lQO+BFHA/dQBCADged9e6tib8klFhPpwSni1JseckqjSL5wT1QKKmJMMRyI1Ru5R
rJSBcRwjOoaaRdavnZEJ1xujU32Zj+2H2sqs6sSnizCNnkF5HCWO2J3b5M5vPkdG
PYqrlcv7lvP8P0wjcTOueDxnSgx6Ijn4QDjd+tLnTxTK8U0YhzsGZCwu+3S6kwhg
xlWSz+39oP0kT58+Jvnlx8vowtvqZ+7npqrMOojIVedFSfk+z2Co1UObj6l+xzTt
1kqQZfXC/yyMAFwTKcPEy/KCw6u2bzvouZMM3dkgfU/AuqqpKSBABH0Z/blnC2Ty
QdSuOKxzgcyIBcW5wRnKtjstWW9YCf/jI6EtABEBAAH+AwMCKJbXYz63HjZgp520
```

```
SnT31jWMxLnE+A4SNw6COTS/6brgHJVCkPYnORZQDpoakJg+F8HWqx+movO6l0UN
dj0gqyR4NF/2tMvgKTT0FMdr7LriSLQsCCh5EwqXm2vnfv9p4qfL0BtjtACv+5XZ
DZXydaFtbSgE8bbLe/AFQLqPOdWOtoLCH/ED0R54Q+VciaZmogiAVbwIjYkNWxMV
1gSETpwL74Fzgu0DigFJpE7SyhqRSdDskMXlyAmZwg0uoLDCtN8aYrSEjrBsy7Rt
337AsWSSMznFtyzYbV1PhtHh0GhHBdUro/4Ad5o76Mset3BclM6UAg6UMSbjC/vv
U6yPyje8yepvCfov/G7tSQbiIEwSOXUxamm2etvno3YBMxm5l7x9ZP7Zfz8+zcVJ
mAVxS5/QQGv9EMFOGGYWQ5ZcTckQ+eGnzZMQmB6jVWahqU8iXM3/g5Y8IP5i87OY
zLHhybp24RXyOoTiB2rxulzmMVUYKlgd6gNlHdysQM4K1deHw8R37e/NKJrmGX+3
psHINp5EJqnB3JfQ3p7A7CMhcJ5Phx3m9UmCrKlyGMJdFCl+tN2P5QSA8dAchgvB
C0L4oZ83CCZUmmM4ljI+BoscLOgyKSPmsplzrz4L7TrHM8K5zFoXHkZzPPWZTM25
ilTywogsUhqXe9wyyaw6PHTHBy+c1hvXcHQffFwfqeyKeO5nGuKBZcpqsXJg/Zg1
rqKmrU2azd2mGtYikQmxlkR+IO9dD58B7gOAkyzAHe5NauT90CtL67qjAX2+aJRb
uu2FLD1yUBMjpfUq3a5sQl6qo9/rC8iknDA/hFBpID3LRqDJGtYafPv8o6FjZH1U
rUCx80Y0rmNelV65XPtE8+so2Hl/hgwHERdNspiTsGESfSE1RxuuNS+iFW/gSy3C
ErRPS01JUCBVU0VSIFJTQSAoT0FTSVMgS2V5IE1hbmFnZW1lbnQgSW50ZXJvcGVy
YWJpbGl0eSBQcm90b2NvbCkgPGttaXAzQGttaXAuY29tPokBNgQTAQIAIAUCUcD9
1AIbLwYLCQgHAwIEFQIIAwQWAgMBAh4BAheAAAoJECQMF7Nsyg0mR3UH/08umEZv
E87bvJ7Jf0Kdn9mxE9sZUdZeYxHauJegFcHUVHh2VX9eeCt6+ThJkFcUgrHbDSGm
lJBWCsEpgKaz+EUIpJxVpVtw1DLwvRDlM2MU/PHJQA/wwtQW75Gvk4iI8hi4YUzb
pCdMF8MU6EOHsy+OPbBZS5lvahXqLqCP3uZ/I0nWYkd+v4xs7qEF5sA++ezqRiK9
IPKsavTpylRq2h6HT7Zg3bld0SYOTRurL2SkkzAeONQuTCewWNu/4qFfGXaMbqaU
So2ICJRU9+1djjIqZN+IFlrgnSPTiiaRTwmPh++WQ6jajqRuz6G2oP4nlYfGZfVO
iyCt/O5XzPky3tQ=
=vd7s
-----END PGP PRIVATE KEY BLOCK-----
```

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PGPKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-PGP-1-12-
pubkey1"/>
        </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Alternative Name"/>
        <AttributeValue>
          <AlternativeNameValue type="TextString"
value="kmip3@kmip.com"/>
          <AlternativeNameType type="Enumeration"
value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Alternative Name"/>
        <AttributeValue>
          <AlternativeNameValue type="TextString" value="KMIP USER
```

```
RSA (OASIS Key Management Interoperability Protocol)
&lt;kmip3@kmip.com&gt;"/>
          <AlternativeNameType type="Enumeration"
value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Alternative Name"/>
        <AttributeValue>
          <AlternativeNameValue type="TextString" value="6CCA0D26"/>
          <AlternativeNameType type="Enumeration"
value="ObjectSerialNumber"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Alternative Name"/>
        <AttributeValue>
          <AlternativeNameValue type="TextString"
value="240C17B36CCA0D26"/>
          <AlternativeNameType type="Enumeration"
value="ObjectSerialNumber"/>
        </AttributeValue>
      </Attribute>
      </TemplateAttribute>
      <PGPKey>
      <PGPKeyVersion type="Integer" value="4"/>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="2d2d2d2d2d424547494e20504750205055424c4943204b455920424c4f434
b2d2d2d2d2d0a0a6d51454e424648412f6451424341446765643965367469623866b6
c4668507077536e69314a7365636b716a534c35775431514b4b6d4a4d4d527949315
27535520a724a53426352776a4f6f6161526461766e5a454a3178756a5533325a6a2
b32483273717336735 36e697a434e6e6b46354843574f324a3362354d3576506b644
70a505971726c6376376c7650385030776a63544f756544786e53677836496a6e345
1446a642b744c6e5478544b38553059687a73475a4377752b3353366b7768670a786
c57537a2b33396f50306b5435382b4a766e6c7838766f777476715a2b376e7071724
d4f6f6a4956656446 53666b2b7a32436f31554f626a366c2b787a54740a316b71515
a6658432f79794d414677544b635045792f4b4377367532627a766f755a4d4d33646
b6766552f41757171704b5342414248305a2f626c6e433254790a516453754f4b787
a6763794942635735 77526e4b746a737457573959 43662f6a4936457441424542414
147305430744e5356416756564e4655694253553045670a4b45394255306c5449457
46c6553424e595735685a3256745a57353049456c7564475679623342 6c636d46696
157787064486b6755484a766447396a623277700a4944787262576c774d304272625
76c774c6d4e766254364a415459454577454341434146416c48412f6451434779384
743776b4942774d43424255434 3414d450a46674944415149654151495867 41414b4
352416b4442657a624d6f4e4a6b6431422f39504c7068476278504f3237796579583
9436e5a2f5a735250624756485 70a586d4d52327269586f4258423146523464 6c562
f586e677265766b34535a425846494b7832773068707053515667724 24b59436d732
f6846434b53635661 56620a634e5179384c305135544e6a46507a787955 4150384d4
c5546752b5272354f496950495975474 64d3236516e5442664464f684468374d766
a6a32775755755a0a62326f56366936676a39376d66794e4a316d4a4866722b4d624
f366842656241507 66e73366b596976534479724772303663705561746f6568302b3
2594e32350a5864456d446b30627179396b704a4d77486a6a554c6b776e73466a627
62b4b6858786c326a47366d6c45714e69416955565066745859347 94b6d546669425
a610a344a306a30346f6d6b55384a6a3466766c6b4f6f326f366b62732b687471442
```

```
b4a355748786d5831546f736772667a7556387a354d7437550a3d6e564f790a2d2d2
d2d2d454e44205047502050555424c4943204b455920424c4f434b2d2d2d2d2d0a"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PGPKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="PGPKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-PGP-1-12-
prikey1"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Link"/>
          <AttributeValue>
            <LinkType type="Enumeration" value="PublicKeyLink"/>
            <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
      <PGPKey>
      <PGPKeyVersion type="Integer" value="4"/>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="2d2d2d2d2d424547494e20504750205055424c4943204b455920424c4f4
34b2d2d2d2d2d0a0a6c514f2b424648412f645142434144676564396536746962386
b6c4668507077536e69314a7365636b716a534c35775431514b4b6d4a4d4d5279493
1527535520a724a53426352776a4f6f6161526461766e5a454a3178756a5533325a6
a2b3248327371733673536e697a434e6e6b46354843574f324a3362354d3576506b6
4470a505971726c6376376c7650385030776a63544f756544786e53677836496a6e3
451446a642b744c6e5478544b38553059687a73475a4377752b3353366b7768670a7
86c57537a2b33396f50306b5435382b4a766e6c7838766f777476715a2b376e70717
24d4f6f6a495665644653666b2b7a32436f31554f626a366c2b787a54740a316b715
15a6658432f79794d414677544b635045792f4b4377367532627a766f755a4d4d336
46b6766552f41757171704b5342414248305a2f626c6e433254790a516453754f4b7
87a676379494263573577526e4b746a73745757395943662f6a49364574414245424
141482b41774d434b4a6258597a3633486a5a67703532300a536e5433316a574d784
c6e452b4134534e7736434f54532f36627267484a56436b50596e4f525a5144706f6
16b4a672b4638485771782b6d6f764f366c30554e0a646a3067717952344e462f327
44d76674b545430464d6472374c7269534c517343436835457771586d32766e66763
9703471664c3042746a744143762b35585a0a445a587964614674625367453862624
c652f4146514c71504f64574f746f4c43482f454430523534512b566369615a6d6f6
76941566277496a596b4e57784d560a316753455470774c3734467a6775304469674
64a7045375379687152536444736b4d586c79416d5a776730756f4c4443744e38615
97253456a724273793752740a333337417357534d7a6e4674797a5962563150687
4486830476848426455726f2f344164356f37364d7365743342636c4d36554167365
54d53626a432f76760a55367950796a65387965707643666f762f473774535162694
94577534f585578616d6d326574766e6f3359424d786d356c3778395a50375a667a3
82b7a63564a0a6d41567853352f5151477639454d464f4747595751355a6354636b5
12b65476e7a5a4d516d42366a5657616871553869584d332f6735593849503569383
74f590a7a4c486879627032345258794f6f546942327278756c7a6d4d5655594b6c6
76436674e6c48647973514d344b316465487738523337652f4e4b4a726d47582b330
a707348494e7035454a716e42334a66513370374137434d68634a35506878336d395
56d43724b6c79474d4a6446436c2b744e325035551534138644163686776420a43304
c346f5a383343435a556d6d4d346c6a492b426f73634c4f67794b53506d73706c7a7
27a344c375472484d384b357a466f58486b5a7a5050575a544d32350a696c5479776
f67735568715865397779796177365048544842792b6331687658634851666646776
67165794b654f356e47754b425a63707173584a672f5a67310a72714b6d725532617
a64326d477459696b516d786c6b522b494f396444435384237674f416b797a4148653
54e617554393043744c3637716a4158322b614a52620a757532464c44317955424d6
a7066557133613573516c36716f392f724338696b6e44412f684642704944334c527
1444a47745961665076386f36466a5a4831550a7255437838305930726d4e656c563
63558507445382b736f32486c2f6867774845526444e7370695473474553665345315
27875754e532b6946572f67537933430a457252505330314a5543425655305653494
64a545153416f5430465453564d675332563549453168626d466e5a57316c626e516
7535735305a584a76634756790a59574a7062476c3065534251636d393062324e766
2436b67504774746158417a514774746158417559323974506f6b424e67515441514
94149415543556344390a314149624c77594c4351674841774945465149494177515
741674d42416834424168654141416f4a4543514d46374e737967306d523355482f3
038756d455a760a45383762764a374a66304b646e396d784539735a55645a6559784
861754a6567466348555648683256583965654374362b54684a6b466355677248624
453476d0a6c4a425743734570674b617a2b455549704a78567056747731444c77765
2446c4d324d552f50484a51412f777745157373547766b3469493868693459557a6
20a7043644d46384d5536454f4873792b4f5062425a53356c76616858714c7143503
3755a2f49306e57596b642b76347873377145463573412b2b657a7152694b390a495
04b7361765470796c52713268364854375a6733626c643053594f545275724c32536
```

```
b6b7a41654f4e517554436577574e752f347146664758614d627161550a536f32494
34a5255392b31646a6a49715a4e2b49466c72676e5350546969615254776d50682b2
b5751366a616a7152757a3647326f50346e6c5966475a66564f0a697943742f4f355
87a506b793374513d0a3d766437730a2d2d2d2d2d454e442050475020505249564154
45204b455920424c4f434b2d2d2d2d2d0a"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PGPKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="31f81bfb0f0492bd"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </RequestPayload>
  </BatchItem>
 </RequestMessage><ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="AddAttribute"/>
    <UniqueBatchItemID type="ByteString" value="31f81bfb0f0492bd"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Link"/>
        <AttributeValue>
          <LinkType type="Enumeration" value="PrivateKeyLink"/>
          <LinkedObjectIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# TIME 3
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:36+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributeList"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="x-ID"/>
      <AttributeName type="TextString" value="Unique Identifier"/>
      <AttributeName type="TextString" value="Object Type"/>
      <AttributeName type="TextString" value="Cryptographic Algorithm"/>
      <AttributeName type="TextString" value="Cryptographic Length"/>
      <AttributeName type="TextString" value="Digest"/>
      <AttributeName type="TextString" value="Initial Date"/>
      <AttributeName type="TextString" value="Last Change Date"/>
      <AttributeName type="TextString" value="Lease Time"/>
      <AttributeName type="TextString" value="Link"/>
      <AttributeName type="TextString" value="State"/>
      <AttributeName type="TextString" value="Alternative Name"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Alternative Name"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# TIME 4
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Alternative Name"/>
        <AttributeValue>
          <AlternativeNameValue type="TextString" value="kmip3@kmip.com"/>
          <AlternativeNameType type="Enumeration"
```

```
value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Alternative Name"/>
        <AttributeIndex type="Integer" value="1"/>
        <AttributeValue>
          <AlternativeNameValue type="TextString" value="KMIP USER RSA (OASIS Key Management Interoperability Protocol) &lt;kmip3@kmip.com&gt;"/>
          <AlternativeNameType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Alternative Name"/>
        <AttributeIndex type="Integer" value="2"/>
        <AttributeValue>
          <AlternativeNameValue type="TextString" value="6CCA0D26"/>
          <AlternativeNameType type="Enumeration" value="ObjectSerialNumber"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Alternative Name"/>
        <AttributeIndex type="Integer" value="3"/>
        <AttributeValue>
          <AlternativeNameValue type="TextString" value="240C17B36CCA0D26"/>
          <AlternativeNameType type="Enumeration" value="ObjectSerialNumber"/>
        </AttributeValue>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# TIME 5
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="PGPKey"/>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_1"/>
      <PGPKey>
      <PGPKeyVersion type="Integer" value="4"/>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" 
value="2d2d2d2d2d424547494e20504750205055424c4943204b455920424c4f4
34b2d2d2d2d2d0a0a6c514f2b424648412f645142434144676564396536746962386
b6c466850707753 6e69314a7365636b716a534c35775431514b4b6d4a4d4d5279493
1527535520a724a53426352776a4f6f6161526461766e5a454a3178756a5533325a6
a2b32483273717336735 36e697a434e6e6b46354843574f324a3362354d3576506b6
4470a505971726c6376376c7650385030776a63544f756544786e53677836496a6e3
451446a642b744c6e5478544b38553059687a73475a4377752b3353366b7768670a7
86c57537a2b33396f50306b5435382b4a766e6c7838766f777476715a2b376e70717
24d4f6f6a495665644653666b2b7a32436f31554f626a366c2b787a54740a316b715
15a6658432f79794d414677544b635045792f4b4377367532627a766f755a4d4d336
46b6766552f41757171704b5342414248305a2f626c6e433254790a516453754f4b7
87a676379494263573577526e4b746a73745757395943662f6a4936457441424542 4
141482b41774d434b4a6258597a3633486a5a67703532300a536e5433316a574d784
c6e452b4134534e7736434f54532f36627267484a56436b50596e4f525a5144706f6
16b4a672b4638485771782b6d6f764f366c30554e0a646a3067717952344e462f327
44d76674b545430464d6472374c7269534c5173434368354577771586d32766e66763
9703471664c3042746a744143762b35585a0a445a58796461467462536745386262 4
c652f4146514c71504f64574f746f4c43482f4544305235345 12b566369615a6d6f6
769415662774 96a596b4e57784d560a316753455470774c3734467a6775304469674
64a7045375379687152536444736b4d586c79416d5a776730756f4c4443744e38615
97253456a724273793752740a3333374173575 3534d7a6e4674797a5962563150687
4486830476848426455726f2f344164356f37364d7365743342636c4d36554167365
54d53626a432f76760a55367950796a6538796570764 3666f762f473774535162694
94577534f5855786 16d6d326574766e6f3359424d786d356c3778395a50375a667a3
82b7a63564a0a6d41567853352f5151477639454d464f474759575 1355a6354636b5
12b65476e7a5a4d516d42366a565761687155386958 4d332f67355938495035 69383
74f590a7a4c486879627032345258794f6f546942327278756c7a6d4d5655594b6c6
76436674e6c486479735 14d344b31646548773852333765 2f4e4b4a726d47582b330
a707348494e7035454a716e42334a665133703741 37434d68634a355068783 36d395
56d43724b6c79474d4a6446436c2b744e325035 5153413864416368677642 0a43304
c346f5a383343435a556d6d4d346c6a492b426f73634c4f67794b53506d73706c7a7
27a344c375472484d384b357a466f58486b5a7a5050575a544d32350a696c5479776
f67735568715865397779796177365048544484 2792b6331687658634851666646776
67165794b654f356e47754b425a6370717358 4a672f5a67310a72714b6d725532617
a64326d477459696b516d786c6b522b494f3964443538423767 4f416b797a4148653
54e617554393043744c3637716a4158322b614a52620a757532464c44317955424d6
a706655713361357351 6c36716f392f724338696b6e44412f684642704944334c527
1444a4774596166507 6386f36466a5a4831550a72554378383059 30726d4e656c563
6355850744538 2b736f32486c2f6867774845 52644e7370695473474 553665345315
```

```
27875754e532b6946572f67537933430a457252505330314a5543425655305653494
64a545153416f5430465453564d67533256354945316862 6d466e5a57316c626e516
7535735305a584a76634756790a59574a7062476c30655342516 36d393062324e766
2436b675047747461584 17a514774746158417559323974506f6b424e67515441514
94149415543556344390a314149624c77594c435167484177494546514949417751 5
741674d424168344241686541414 16f4a4543514d46374e737967306d523355482f3
038756d455a760a45383762764a374a66304b646e396d784539735a55645a6559784
861754a6567466348555648683256583965654374362b54684a6b466355677248624
453476d0a6c4a425743734570674b617a2b455549704a7856705674773 1444c77765
2446c4d324d552f50484a51412f77777451573735 47766b346949386869 3459557a6
20a7043644d46384d5536454f4873792b4f5062425a53356c7661685871 4c7143503
3755a2f49306e57596b642b763478733771454635734 12b2b657a7152694b390a495
04b7361765470796c527132683648543 75a6733626c643053594f545275724c32536
b6b7a41654f4e517554436577574e752f347146664758614d627161550a536f32494
34a5255392b31646a6a49715a4e2b49466c72676e535054696961525477 6d50682b2
b5751366a616a7152757a3647326f50346e6c5966475a66564f0a697943742f4f355
87a506b793374513d0a3d766437730a2d2d2d2d2d454e442050475020505249564 15
445204b455920424c4f434b2d2d2d2d2d0a"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PGPKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <KeyFormatType type="Enumeration" value="Raw"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# TIME 6
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
```

```
      <ObjectType type="Enumeration" value="PGPKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <PGPKey>
      <PGPKeyVersion type="Integer" value="4"/>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="2d2d2d2d2d424547494e20504750205055424c4943204b455920424c4f434
b2d2d2d2d2d0a0a6d51454e424648412f645142434144676564396536746962386b6
c4668507077536e69314a7365636b716a534c35775431514b4b6d4a4d4d527949315
27535520a724a53426352776a4f6f6161526461766e5a454a3178756a5533325a6a2
b3248327371733673536e697a434e6e6b46354843574f324a3362354d3576506b644
70a505971726c6376376c7650385030776a63544f756544786e53677836496a6e345
1446a642b744c6e5478544b38553059687a73475a4377752b3353366b7768670a786
c57537a2b33396f50306b5435382b4a766e6c7838766f777476715a2b376e7071724
d4f6f6a495665644653666b2b7a32436f31554f626a366c2b787a54740a316b71515
a6658432f79794d414677544b635045792f4b4377367532627a766f755a4d4d33646
b6766552f41757171704b534241424830 5a2f626c6e433254790a516453754f4b787
a676379494263573577526e4b746a73745757395943662f6a4936457441424542414
147305430744e5356416756564e4655694253553045670a4b45394255306c5449457
46c6553424e595735685a3256745a57353049456c7564475679623342c636d46696
157787064486b6755484a766447396a623277700a4944787262576c774d304272625
76c774c6d4e766254364a41545945457745434143414146416c48412f645143477938 4
743776b4942774d434242554343414d450a466749444151496541514958674141 4b4
352416b4442657a624d6f4e4a6b6431422f39504c7068476278504f3237796579583
9436e5a2f5a73525062475648570a586d4d52327269586f425842314652346 46c562
f586e677265766b34535a425846494b7832773068707053515667724 24b59436d732
f6846434b5363566156620a634e5179384c305135544e6a46507a7879554150384d4
c5546752b5272354f496950495975 47464d3236516e54426644464f684468374d766
a6a32775755755a0a62326f56366936676a39376d66794e4a316d4a4866722b4d624
f36684265624150766e73366b596976534479724772303663705561 746f6568302b3
2594e32350a5864456d446b30627179396b704a4d77486a6a554c6b776e73466a627
62b4b6858786c326a47366d6c45714e69416955565066674585934794b6d546669425
a610a344a306a30346f6d6b55384a6a3466766c6b4f6f326f366b62732b687471442
b4a355748786d5831546f736772667a7556387a354d7437550a3d6e564f790a2d2d2
d2d2d454e4420504750205055424c4943204b455920424c4f434b2d2d2d2d2d0a"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="RSA"/>
          <CryptographicLength type="Integer" value="2048"/>
        </KeyBlock>
      </PGPKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
```

```
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# TIME 7
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
# TIME 8
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:14:37+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.43 TC-MDO-1-12 - Register MDO Key

Client registers a metadata-only object with the key management server and then locates and gets the value and the associated attributes. Finally the managed object is destroyed.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt Verify Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Key Value Location"/>
          <AttributeValue>
            <KeyValueLocationValue type="TextString" value="HSM-12345"/>
            <KeyValueLocationType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="MDO-M-1-12"/>
            <NameType type="Enumeration"
```

```
value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-11-27T23:21:22+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-11-28T00:15:10+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Key Value Location"/>
      <AttributeName type="TextString" value="Key Value Present"/>
      <AttributeName type="TextString" value="Original Creation Date"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-11-28T00:48:54+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Key Value Location"/>
        <AttributeValue>
          <KeyValueLocationValue type="TextString" value="HSM-12345"/>
          <KeyValueLocationType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Key Value Present"/>
        <AttributeValue type="Boolean" value="false"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-14T07:00:22+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.44 TC-MDO-2-12 - Locate MDO keys by Key Value Present

Client registers both a metadata-only object and a normal object with key management server and then locates just the metadata-only object, and gets the value and the associated attributes. Finally the managed object is destroyed.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt Verify Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Key Value Location"/>
          <AttributeValue>
            <KeyValueLocationValue type="TextString" value="HSM-12345"/>
            <KeyValueLocationType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="MDO-M-2-12-mdokey"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-11-27T23:21:22+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt Verify
```

```
Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="MDO-M-2-12-non-mdokey"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Original Creation Date"/>
          <AttributeValue type="DateTime" value="1970-01-01T10:42:00+00:00"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="0123456789abcdef0123456789abcdef"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-11-27T23:21:22+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <RequestPayload>
      <Attribute>
        <AttributeName type="TextString" value="Key Value Present"/>
        <AttributeValue type="Boolean" value="false"/>
      </Attribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-14T08:35:02+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Locate"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Key Value Location"/>
      <AttributeName type="TextString" value="Key Value Present"/>
      <AttributeName type="TextString" value="Original Creation Date"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-11-28T00:48:54+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Key Value Location"/>
        <AttributeValue>
          <KeyValueLocationValue type="TextString" value="HSM-12345"/>
          <KeyValueLocationType type="Enumeration" value="UninterpretedTextString"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Key Value Present"/>
        <AttributeValue type="Boolean" value="false"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <AttributeName type="TextString" value="Key Value Location"/>
      <AttributeName type="TextString" value="Key Value Present"/>
      <AttributeName type="TextString" value="Original Creation Date"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-11-28T00:48:54+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <Attribute>
        <AttributeName type="TextString" value="Original Creation Date"/>
        <AttributeValue type="DateTime" value="1970-01-01T10:42:00+00:00"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-14T07:00:22+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
<RequestMessage>
```

```
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-14T07:00:22+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.45 TC-MDO-3-12 - Register MDO Key using PKCS11 URI

Client registers a metadata-only object with the key management server using the URI form of the Key Value Location and then locates and gets the value and the associated attributes. Finally the managed object is destroyed.

See http://tools.ietf.org/html/draft-pechanec-pkcs11uri-10 for more details on the PKCS11 URI format.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt Verify Sign"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Key Value Location"/>
          <AttributeValue>
            <KeyValueLocationValue type="TextString" value="pkcs11:token=My%20Token;object=MDO-M-3;objecttype=secretkey;id=%69%95%3e%5c%f4%bd%ec%91"/>
            <KeyValueLocationType type="Enumeration" value="URI"/>
          </AttributeValue>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="MDO-M-3-12"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-11-27T23:21:22+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-11-28T00:15:10+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 2
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <AttributeName type="TextString" value="Key Value Location"/>
      <AttributeName type="TextString" value="Key Value Present"/>
      <AttributeName type="TextString" value="Original Creation Date"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-11-28T00:48:54+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="GetAttributes"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <Attribute>
        <AttributeName type="TextString" value="Key Value Location"/>
        <AttributeValue>
          <KeyValueLocationValue type="TextString" value="pkcs11:token=My%20Token;object=MDO-M-3;objecttype=secretkey;id=%69%95%3e%5c%f4%bd%ec%91"/>
          <KeyValueLocationType type="Enumeration" value="URI"/>
        </AttributeValue>
      </Attribute>
      <Attribute>
        <AttributeName type="TextString" value="Key Value Present"/>
        <AttributeValue type="Boolean" value="false"/>
      </Attribute>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchOrderOption type="Boolean" value="true"/>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-14T07:00:22+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.46 TC-SJ-1-12 - Create and Split/Join

Create a symmetric key and perform split and join in various combinations.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-SJ-1-12"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Create"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="CreateSplitKey"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SplitKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SplitKeyParts type="Integer" value="5"/>
      <SplitKeyThreshold type="Integer" value="3"/>
      <SplitKeyMethod type="Enumeration"
value="PolynomialSharingGF2_8"/>
      <TemplateAttribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="CreateSplitKey"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_3"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_4"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_5"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
# Successful Join with 3 of the required 3-of-5 keys
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="JoinSplitKey"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_3"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_5"/>
      <TemplateAttribute>
        <Attribute>
```

```
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-SJ-1-12-join1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="JoinSplitKey"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_6"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
# Non-successful Join with only 2 of the required 3-of-5 keys
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="JoinSplitKey"/>
    <RequestPayload>
```

```
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_4"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-SJ-1-12-join2"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="JoinSplitKey"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="CryptographicFailure"/>
    <ResultMessage type="TextString" value="FAILURE"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
  <ResponseMessage>
    <ResponseHeader>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="2"/>
      </ProtocolVersion>
      <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
      <BatchCount type="Integer" value="1"/>
    </ResponseHeader>
    <BatchItem>
      <Operation type="Enumeration" value="Destroy"/>
      <ResultStatus type="Enumeration" value="Success"/>
      <ResponsePayload>
        <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      </ResponsePayload>
    </BatchItem>
  </ResponseMessage>
```

```
  # TIME 5
  <RequestMessage>
    <RequestHeader>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="2"/>
      </ProtocolVersion>
      <BatchCount type="Integer" value="1"/>
    </RequestHeader>
    <BatchItem>
      <Operation type="Enumeration" value="Destroy"/>
      <RequestPayload>
        <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      </RequestPayload>
    </BatchItem>
  </RequestMessage>
```

```
  <ResponseMessage>
    <ResponseHeader>
      <ProtocolVersion>
        <ProtocolVersionMajor type="Integer" value="1"/>
        <ProtocolVersionMinor type="Integer" value="2"/>
      </ProtocolVersion>
      <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
      <BatchCount type="Integer" value="1"/>
    </ResponseHeader>
    <BatchItem>
      <Operation type="Enumeration" value="Destroy"/>
      <ResultStatus type="Enumeration" value="Success"/>
      <ResponsePayload>
        <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      </ResponsePayload>
    </BatchItem>
  </ResponseMessage>
```

```
# TIME 6
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_4"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_4"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_5"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_5"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_6"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_6"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.47 TC-SJ-2-12 - Register and Split / Join

Register a symmetric key and perform split and join in various combinations.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt Decrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-SJ-2-12"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="0102030405060708090A0B0C0D0E0F10"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
```

```
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="CreateSplitKey"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SplitKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SplitKeyParts type="Integer" value="4"/>
      <SplitKeyThreshold type="Integer" value="2"/>
      <SplitKeyMethod type="Enumeration" value="PolynomialSharingGF2_8"/>
      <TemplateAttribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="CreateSplitKey"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
```

```
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_3"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_4"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SplitKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <SplitKey>
      <SplitKeyParts type="Integer" value="4"/>
      <KeyPartIdentifier type="Integer" value="1"/>
      <SplitKeyThreshold type="Integer" value="2"/>
      <SplitKeyMethod type="Enumeration"
value="PolynomialSharingGF2_8"/>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="66C46A7754F94DE420C7B1A7FFF5EC56"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SplitKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SplitKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <SplitKey>
      <SplitKeyParts type="Integer" value="4"/>
      <KeyPartIdentifier type="Integer" value="2"/>
      <SplitKeyThreshold type="Integer" value="2"/>
      <SplitKeyMethod type="Enumeration" value="PolynomialSharingGF2_8"/>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="CF93D1E2A7E593CD5B8D6247F4E5D49C"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SplitKey>
    </ResponsePayload>
  </BatchItem>
```

```
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_3"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SplitKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_3"/>
      <SplitKey>
      <SplitKeyParts type="Integer" value="4"/>
      <KeyPartIdentifier type="Integer" value="3"/>
      <SplitKeyThreshold type="Integer" value="2"/>
      <SplitKeyMethod type="Enumeration"
value="PolynomialSharingGF2_8"/>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="A855B891F61AD9217240D8EC061E37DA"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SplitKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_4"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SplitKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
      <SplitKey>
      <SplitKeyParts type="Integer" value="4"/>
      <KeyPartIdentifier type="Integer" value="4"/>
      <SplitKeyThreshold type="Integer" value="2"/>
      <SplitKeyMethod type="Enumeration"
value="PolynomialSharingGF2_8"/>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="803DBAD55CDD329FAD19D99AE2C5A415"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SplitKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
# Successful Join with 2 of the required 2-of-4 keys
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="JoinSplitKey"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-SJ-2-12-join1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="JoinSplitKey"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_5"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 7
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_5"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_5"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="0102030405060708090A0B0C0D0E0F10"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
# Non-successful Join with only 1 of the required 2-of-4 keys
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="JoinSplitKey"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="JoinSplitKey"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="CryptographicFailure"/>
    <ResultMessage type="TextString" value="FAILURE"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
```

```
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 11
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 12
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 13
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_4"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_4"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 14
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_5"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_5"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.48 TC-SJ-3-12 - Join Split Keys

Register split keys and join in various combinations.

```
# TIME 0
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SplitKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-SJ-3-12-
split1"/>
        </Attribute>
      </TemplateAttribute>
      <SplitKey>
      <SplitKeyParts type="Integer" value="4"/>
      <KeyPartIdentifier type="Integer" value="1"/>
      <SplitKeyThreshold type="Integer" value="2"/>
      <SplitKeyMethod type="Enumeration"
value="PolynomialSharingGF2_8"/>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="66C46A7754F94DE420C7B1A7FFF5EC56"/>
          </KeyValue>
        </KeyBlock>
      </SplitKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SplitKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-SJ-3-12-
split2"/>
        </Attribute>
      </TemplateAttribute>
      <SplitKey>
      <SplitKeyParts type="Integer" value="4"/>
      <KeyPartIdentifier type="Integer" value="2"/>
      <SplitKeyThreshold type="Integer" value="2"/>
      <SplitKeyMethod type="Enumeration"
value="PolynomialSharingGF2_8"/>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="CF93D1E2A7E593CD5B8D6247F4E5D49C"/>
          </KeyValue>
        </KeyBlock>
      </SplitKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SplitKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-SJ-3-12-split3"/>
        </Attribute>
      </TemplateAttribute>
      <SplitKey>
      <SplitKeyParts type="Integer" value="4"/>
      <KeyPartIdentifier type="Integer" value="3"/>
      <SplitKeyThreshold type="Integer" value="2"/>
      <SplitKeyMethod type="Enumeration" value="PolynomialSharingGF2_8"/>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="A855B891F61AD9217240D8EC061E37DA"/>
          </KeyValue>
        </KeyBlock>
      </SplitKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SplitKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-SJ-3-12-
split4"/>
        </Attribute>
      </TemplateAttribute>
      <SplitKey>
      <SplitKeyParts type="Integer" value="4"/>
      <KeyPartIdentifier type="Integer" value="4"/>
      <SplitKeyThreshold type="Integer" value="2"/>
      <SplitKeyMethod type="Enumeration"
value="PolynomialSharingGF2_8"/>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString"
value="803DBAD55CDD329FAD19D99AE2C5A415"/>
          </KeyValue>
        </KeyBlock>
      </SplitKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2012-04-27T08:12:25+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
# Successful Join with 2 of the required 2-of-4 keys
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="JoinSplitKey"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-SJ-3-12-join1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="JoinSplitKey"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_4"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_4"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_4"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="0102030405060708090a0b0c0d0e0f10"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
# Non-successful Join with only 1 of the required 2-of-4 keys
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="JoinSplitKey"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="JoinSplitKey"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="CryptographicFailure"/>
    <ResultMessage type="TextString" value="FAILURE"/>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 9
```

```
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" 
value="$UNIQUE_IDENTIFIER_3"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_3"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 11
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_4"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_4"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

2.3.49 TC-SJ-4-12 - Register and Split / Join with XOR

Register a symmetric key and perform split and join in various combinations.

```
# TIME 0
<RequestMessage>
```

```
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Encrypt Decrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="x-ID"/>
          <AttributeValue type="TextString" value="TC-SJ-4-12"/>
        </Attribute>
      </TemplateAttribute>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="0102030405060708090a0b0c0d0e0f10"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Register"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 1
<RequestMessage>
  <RequestHeader>
```

```
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="CreateSplitKey"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SplitKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_0"/>
      <SplitKeyParts type="Integer" value="4"/>
      <SplitKeyThreshold type="Integer" value="4"/>
      <SplitKeyMethod type="Enumeration" value="XOR"/>
      <TemplateAttribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="CreateSplitKey"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_4"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 2
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
```

```
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SplitKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <SplitKey>
      <SplitKeyParts type="Integer" value="4"/>
      <KeyPartIdentifier type="Integer" value="1"/>
      <SplitKeyThreshold type="Integer" value="4"/>
      <SplitKeyMethod type="Enumeration" value="XOR"/>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="d4b92c299199298e30dee13b967e6dda"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SplitKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 3
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
```

```
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SplitKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <SplitKey>
      <SplitKeyParts type="Integer" value="4"/>
      <KeyPartIdentifier type="Integer" value="2"/>
      <SplitKeyThreshold type="Integer" value="4"/>
      <SplitKeyMethod type="Enumeration" value="XOR"/>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="35ea4f615686230c7b11538693674e89"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SplitKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 4
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
```

```
      <BatchCount type="Integer" value="1"/>
    </ResponseHeader>
    <BatchItem>
      <Operation type="Enumeration" value="Get"/>
      <ResultStatus type="Enumeration" value="Success"/>
      <ResponsePayload>
        <ObjectType type="Enumeration" value="SplitKey"/>
        <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
        <SplitKey>
        <SplitKeyParts type="Integer" value="4"/>
        <KeyPartIdentifier type="Integer" value="3"/>
        <SplitKeyThreshold type="Integer" value="4"/>
        <SplitKeyMethod type="Enumeration" value="XOR"/>
          <KeyBlock>
            <KeyFormatType type="Enumeration" value="Raw"/>
            <KeyValue>
              <KeyMaterial type="ByteString" value="3478ddd2e1f89f2005011d26d9fff37c"/>
            </KeyValue>
            <CryptographicAlgorithm type="Enumeration" value="AES"/>
            <CryptographicLength type="Integer" value="128"/>
          </KeyBlock>
        </SplitKey>
      </ResponsePayload>
    </BatchItem>
</ResponseMessage>
```

```
# TIME 5
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_4"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
```

```
      <ObjectType type="Enumeration" value="SplitKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <SplitKey>
      <SplitKeyParts type="Integer" value="4"/>
      <KeyPartIdentifier type="Integer" value="4"/>
      <SplitKeyThreshold type="Integer" value="4"/>
      <SplitKeyMethod type="Enumeration" value="XOR"/>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="d429bd9e23e192aa47c4a497d1e8df3f"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SplitKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 6
# Successful Join with 4 of the required 4-of-4 keys
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="JoinSplitKey"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_4"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_1"/>
      <TemplateAttribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Algorithm"/>
          <AttributeValue type="Enumeration" value="AES"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Length"/>
          <AttributeValue type="Integer" value="128"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Cryptographic Usage Mask"/>
          <AttributeValue type="Integer" value="Decrypt Encrypt"/>
        </Attribute>
        <Attribute>
          <AttributeName type="TextString" value="Name"/>
          <AttributeValue>
            <NameValue type="TextString" value="TC-SJ-4-12-join1"/>
            <NameType type="Enumeration" value="UninterpretedTextString"/>
          </AttributeValue>
        </Attribute>
      </TemplateAttribute>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="JoinSplitKey"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_5"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 7
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_5"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Get"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_5"/>
      <SymmetricKey>
        <KeyBlock>
          <KeyFormatType type="Enumeration" value="Raw"/>
          <KeyValue>
            <KeyMaterial type="ByteString" value="0102030405060708090a0b0c0d0e0f10"/>
          </KeyValue>
          <CryptographicAlgorithm type="Enumeration" value="AES"/>
          <CryptographicLength type="Integer" value="128"/>
        </KeyBlock>
      </SymmetricKey>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 8
# Non-successful Join with only 1 of the required 4-of-4 keys
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="JoinSplitKey"/>
    <RequestPayload>
      <ObjectType type="Enumeration" value="SymmetricKey"/>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="JoinSplitKey"/>
    <ResultStatus type="Enumeration" value="OperationFailed"/>
    <ResultReason type="Enumeration" value="CryptographicFailure"/>
    <ResultMessage type="TextString" value="FAILURE"/>
  </BatchItem>
```

```
</ResponseMessage>
```

```
# TIME 9
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 10
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
```

```
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 11
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_2"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
# TIME 12
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_3"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 13
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString" value="$UNIQUE_IDENTIFIER_4"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
```

```
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_4"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

```
# TIME 14
<RequestMessage>
  <RequestHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <BatchCount type="Integer" value="1"/>
  </RequestHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <RequestPayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_5"/>
    </RequestPayload>
  </BatchItem>
</RequestMessage>
```

```
<ResponseMessage>
  <ResponseHeader>
    <ProtocolVersion>
      <ProtocolVersionMajor type="Integer" value="1"/>
      <ProtocolVersionMinor type="Integer" value="2"/>
    </ProtocolVersion>
    <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
    <BatchCount type="Integer" value="1"/>
  </ResponseHeader>
  <BatchItem>
    <Operation type="Enumeration" value="Destroy"/>
    <ResultStatus type="Enumeration" value="Success"/>
    <ResponsePayload>
      <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_5"/>
    </ResponsePayload>
  </BatchItem>
</ResponseMessage>
```

Appendix A. Acknowledgments

The following individuals have participated in the creation of this specification and are gratefully acknowledged:

Editors of the previous versions of this document:

Mathias Björkqvist, IBM (v1.0 and v1.1)
Tim Hudson, Cryptsoft (v1.1)
René Pawlitzek, IBM (v1.0)

Technical Committee Participants:

Hal Aldridge, Sypris Electronics
Mike Allen, Symantec
Gordon Arnold, IBM
Todd Arnold, IBM
Richard Austin, Hewlett-Packard
Lars Bagnert, PrimeKey
Elaine Barker, NIST
Peter Bartok, Venafi, Inc.
Tom Benjamin, IBM
Anthony Berglas, Cryptsoft
Mathias Björkqvist, IBM
Kevin Bocket, Venafi
Anne Bolgert, IBM
Alan Brown, Thales e-Security
Tim Bruce, CA Technologies
Chris Burchett, Credant Technologies, Inc.
Kelley Burgin, National Security Agency
Robert Burns, Thales e-Security
Chuck Castleton, Venafi
Kenli Chong, QuintessenceLabs
John Clark, Hewlett-Packard
Tom Clifford, Symantec Corp.
Doron Cohen, SafeNet, Inc
Tony Cox, Cryptsoft
Russell Dietz, SafeNet, Inc
Graydon Dodson, Lexmark International Inc.
Vinod Duggirala, EMC Corporation
Chris Dunn, SafeNet, Inc.
Michael Duren, Sypris Electronics
James Dzierzanowski, American Express CCoE
Faisal Faruqui, Thales e-Security
Stan Feather, Hewlett-Packard
David Finkelstein, Symantec Corp.
James Fitzgerald, SafeNet, Inc.
Indra Fitzgerald, Hewlett-Packard
Judith Furlong, EMC Corporation
Susan Gleeson, Oracle
Robert Griffin, EMC Corporation
Paul Grojean, Individual
Robert Haas, IBM

Thomas Hardjono, M.I.T.
ChengDong He, Huawei Technologies Co., Ltd.
Steve He, Vormetric
Kurt Heberlein, Hewlett-Packard
Larry Hofer, Emulex Corporation
Maryann Hondo, IBM
Walt Hubis, NetApp
Tim Hudson, Cryptsoft
Jonas Iggbom, Venafi, Inc.
Sitaram Inguva, American Express CCoE
Jay Jacobs, Target Corporation
Glen Jaquette, IBM
Mahadev Karadiguddi, NetApp
Greg Kazmierczak, Wave Systems Corp.
Marc Kenig, SafeNet, Inc.
Mark Knight, Thales e-Security
Kathy Kriese, Symantec Corporation
Mark Lambiase, SecureAuth
John Leiseboer, Quintenssence Labs
Hal Lockhart, Oracle Corporation
Robert Lockhart, Thales e-Security
Anne Luk, Cryptsoft
Sairam Manidi, Freescale
Luther Martin, Voltage Security
Neil McEvoy, iFOSSF
Marina Milshtein, Individual
Dale Moberg, Axway Software
Jishnu Mukeri, Hewlett-Packard
Bryan Olson, Hewlett-Packard
John Peck, IBM
Rob Philpott, EMC Corporation
Denis Pochuev, SafeNet, Inc.
Reid Poole, Venafi, Inc.
Ajai Puri, SafeNet, Inc.
Saravanan Ramalingam, Thales e-Security
Peter Reed, SafeNet, Inc.
Bruce Rich, IBM
Christina Richards, American Express CCoE
Warren Robbins, Dell
Peter Robinson, EMC Corporation
Scott Rotondo, Oracle
Saikat Saha, SafeNet, Inc.
Anil Saldhana, Red Hat
Subhash Sankuratripati, NetApp
Boris Schumperli, Cryptomathic
Greg Singh, QuintessenceLabs
David Smith, Venafi, Inc
Brian Spector, Certivox
Terence Spies, Voltage Security
Deborah Steckroth, RouteOne LLC
Michael Stevens, QuintessenceLabs
Marcus Streets, Thales e-Security
Satish Sundar, IBM
Kiran Thota, VMware
Somanchi Trinath, Freescale Semiconductor, Inc.
Nathan Turajski, Thales e-Security

Sean Turner, IECA, Inc.
Paul Turner, Venafi, Inc.
Rod Wideman, Quantum Corporation
Steven Wierenga, Hewlett-Packard
Jin Wong, QuintessenceLabs
Sameer Yami, Thales e-Security
Peter Yee, EMC Corporation
Krishna Yellepeddy, IBM
Catherine Ying, SafeNet, Inc.
Tatu Ylonen, SSH Communications Security (Tectia Corp)
Michael Yoder, Vormetric. Inc.
Magda Zdunkiewicz, Cryptsoft
Peter Zelechoski, Election Systems & Software

Appendix B. Revision History

Revision	Date	Editor	Changes Made
wd01	26-June-2013	Tim Hudson / Faisal Faruqui	Initial draft with updated conformance wording style. Updated test case style. Included test cases for 1.0, 1.1 and 1.2. Applied new OASIS template.
wd02	6-August-2013	Tim Hudson / Faisal Faruqui	Updated Test Cases based on July 2013 Interop
wd02a	24-October-2013	Tim Hudson	Editorial corrections to two typographical errors in the test cases in TC-71-{10,11,12}, TC-MDO-{1,2}.
pr01update	11-June-2014	Tim Hudson	Updated following Public Review