



Aug, 2015

Create and Manage APIs

Connectivity and Resource Management



Building Target Authentication

- Problem Statement

While attempting to make a request to a target through Apigee I am asked for basic authentication credentials.

- Basic Authentication
 - Base 64 Encrypted Username and Password (username:password)
- Where do I store the username in password?
 - Hard Coded in a policy
 - Build time properties replacement
 - Key Value Map

The Key Value Map Authentication Solution

- Step 1: Seed your map with credentials
- Step 2: Attach a keyvaluemap policy to retrieve said credentials
- Step 3: Attach a Basic Authentication Policy to put them in your Authentication header

Step 1: Seeding your map with Curl:

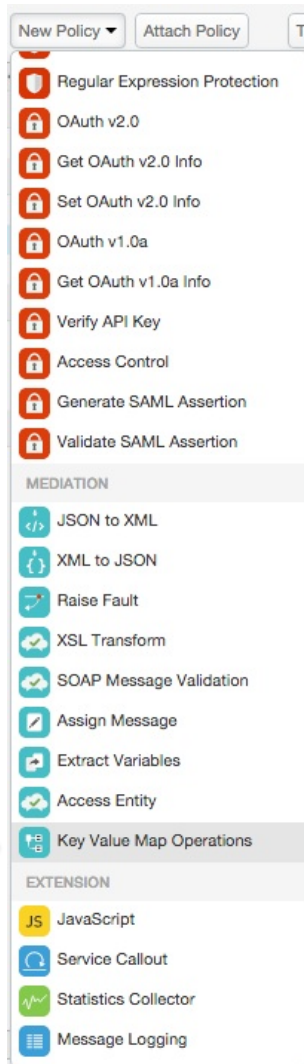
```
curl "https://api.enterprise.apigee.com/v1/o/{organization}/keyvaluemaps" -H "Content-Type:application/json" -u {username} -d @credsKVM.json -v
```

```
{
  "name": "credentials",
  "entry": [
    {
      "name": "username",
      "value": "usernameForTarget"
    }, {
      "name": "password",
      "value": "passwordForTarget"
    }
  ]
}
```

credsKVM.json

The KVM Auth Solution Part 2

Attach KVM Policy



Name and Select the Target Endpoint (Prewflow) from the flows, then press Add

New Policy: Key Value Map Operations

Policy Display Name:

Policy Name:

Attach Policy: ☒

Flow:

Segment: ☒ Request ☐ Response

Modify the content to retrieve the credentials

Code: kvm_get_credentials

```
1 <?xml version="1.0" encoding="UTF-8" standalone="yes"?>
2 <KeyValueMapOperations name="kvm_get_credentials" mapIdentifier="credentials">
3   <DisplayName>kvm_get_credentials</DisplayName>
4   <ExpiryTimeInSecs>-1</ExpiryTimeInSecs>
5   <Get assignTo="username" index="1">
6     <Key>
7       <Parameter>username</Parameter>
8     </Key>
9   </Get>
10  <Get assignTo="password" index="1">
11    <Key>
12      <Parameter>password</Parameter>
13    </Key>
14  </Get>
15  <Scope>organization</Scope>
16 </KeyValueMapOperations>
```

KVM Options

- **Attributes**


- mapIdentifier – References a defined kvm

- **Elements**

- Scope – Where and when you can access data contained within the Map
- ExpiryTimeInSecs – Specifies when the data will expire (note -1 = no expiration)
- Initial Entries – Allows you to pre-load data on the first run of the policy
- Put – Allows you to add data to the map dynamically (Warning: adding too much data can cause system degradation)
- Get – Allows you to get data from the map
- Delete – Allows you to remove data from the map
- For More Help: <http://apigee.com/docs/api-services/content/key-value-map-operations-policy>

Attach Basic Authentication Policy

Attach Basic Authentication Policy




TRAFFIC MANAGEMENT

- Quota
- Spike Arrest
- Concurrent Rate Limit
- Response Cache
- Lookup Cache
- Populate Cache
- Invalidate Cache
- Reset Quota

SECURITY

- Basic Authentication**
- XML Threat Protection
- JSON Threat Protection
- Regular Expression Protection
- OAuth v2.0
- Get OAuth v2.0 Info
- Set OAuth v2.0 Info
- OAuth v1.0a
- Get OAuth v1.0a Info
- Verify API Key
- Access Control
- Generate SAML Assertion
- Validate SAML Assertion

Name and Select the Target Endpoint (Preflow) from the flows, then press Add

New Policy:  Basic Authentication ×

Policy Display Name

Policy Name

Attach Policy ☒

Flow

Segment ☒ Request ☐ Response

Cancel Add

Modify the content to build the Authentication Header

Code: basic_authentication

```
1 <?xml version="1.0" encoding="UTF-8" standalone="yes"?>
2 <BasicAuthentication name="basic_authentication">
3   <DisplayName>basic_authentication</DisplayName>
4   <Operation>Encode</Operation>
5   <IgnoreUnresolvedVariables>false</IgnoreUnresolvedVariables>
6   <User ref="username" />
7   <Password ref="password" />
8   <AssignTo createNew="false">request.header.Authorization</AssignTo>
9   <Source>request.header.Authorization</Source>
10 </BasicAuthentication>
```

Basic Authentication Options

- Outbound Configuration
 - Operation – Encode
 - User – Attr:ref = location of username in a variable
 - Password – Attr:ref= location of the password in a variable
 - AssignTo
 - Attr:createNew = true / false
 - Reference to the authentication location (commonly request.header.Authentication)
- Inbound Configuration
 - Operation – Decode
 - User – Attr:ref = location to put decoded username
 - Password – Attr:ref= location to put decoded password
 - Source – variable location where the policy will find the Base64 encoded variables (commonly request.header.Authentication)

Trace – Lets Validate With Trace

Steves-APIEatery

OVERVIEW DEVELOP TRACE

Deployment to Trace Environment test, Revision 1 [Start Trace Session](#) [Download Trace Session](#) [Node.js Logs](#) [ACCESS THE CLASSIC VERSION OF TRACE](#)

Filters

▼	Status	Method	URI	Elapsed
2	200	GET	/v1/apieatery/trucks	212 ms
1	200	GET	/v1/apieatery/trucks	111 ms

Send Requests

Method	URL	Status
GET	<input type="text" value="http://trainingmats-test.apigee.net/v1/apieatery/trucks"/>	200

[Send](#) [Or Send with the API Console](#)

Transaction Map

Phase Details

Phase	Details
Target Request Flow Started	GET /v1/apieatery/trucks
kvm_get_credentials	GET /v1/apieatery/trucks

Target Endpoint

Name	Value
default	

Variables

Variable	Value
password	= Test1234
username	= foundationUser

Request Headers

Header	Value
Accept	*/*
Connection	keep-alive
Host	trainingmats-test.apigee.net
User-Agent	NING/1.0
X-Apigee-Trace-Id	5a30d75a-9bd6-4df9-81e5-eecec9c5ddcb

View Options

Transaction Map

- ☒ Show Disabled Policies (none)
- ☒ Show Skipped Phases (1)
- ☐ Show All FlowInfos (4)

Phase Details

- ☒ Automatically Compare Selected Phase
- ☒ Show Variables
- ☒ Show Properties

Output from all Transactions

Day 1 – Lab 5 Basic KVM

- Build KVM to Store credentials for target server
 - Create Key-Value-Map at the environment level using **POSTMAN**
 - [POST https://api.enterprise.apigee.com/v1/o/orgName/keyvaluemaps/](https://api.enterprise.apigee.com/v1/o/orgName/keyvaluemaps/)
 - Post data:

```
<KeyValueMap name="credentials">  
  <Entry name="username">foundationUser</Entry>  
  <Entry name="password">Test1234</Entry>  
</KeyValueMap>
```
 - Create Key-value-map policy in preflow of default Target Endpoint to retrieve username and password
 - Create BasicAuthentication Policy to build Authorization header with base64 encryption of userid / password
 - Test using Postman and start the Trace in Apigee to check flow variables.

Thank you

A network diagram consisting of white circular nodes of varying sizes connected by thin white lines. The nodes are scattered across the red background, with some forming a central cluster and others positioned more peripherally. The lines connect the nodes in a non-uniform, web-like structure.

apigee

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