

Strictly for internal use

SAP Gateway

One Technology, a World of Experiences

DAY – 2A



Day III Agenda

- ❖ Hands on CRUDQ operations (Code Based Technique)
- ❖ How to Redefine methods at MPC and DPC level
- ❖ Function Import
- ❖ How to display messages in HTTP responses & Header

Read Operation

GW-EO:GW-EO-03

Case 1: Fetch the list of purchase orders

Method to be implemented : PoHeaderSet_Get_EntitySet

Service URI: /sap/opu/odata/sap/ZGW_TRNG_DEMO2_SRV/PoHeaderSet

The screenshot displays the SAP NetWeaver Gateway Client interface. The top section shows the HTTP Method as GET and the Request URI as /sap/opu/odata/sap/ZGW_TRNG_DEMO2_SRV/PoHeaderSet. The HTTP Request section is empty. The HTTP Response section shows a 200 status code and a content-type of application/atom+xml;type=feed; charset=utf-8. The response body is an XML feed containing two entries. The first entry is for PoHeaderSet('4500000133') and the second is for PoHeaderSet('4500000458').

```
<?xml version='1.0' encoding='utf-8'>
<feed xmlns='http://schemas.microsoft.com/ado/2007/08/dataservices/feed' title='Nav_PoHeaderSet'>
  <entry>
    <id>PoHeaderSet('4500000133')</id>
    <title type='text'>PoHeaderSet('4500000133')</title>
    <updated>2015-05-11T13:12:04Z</updated>
    <category term='ZGW_TRNG_DEMO2_SRV.PoHeader' scheme='http://schemas.microsoft.com/ado/2007/08/dataservices/scheme' />
    <link href='PoHeaderSet('4500000133')' rel='edit' title='PoHeader' />
    <link href='PoHeaderSet('4500000133')/Nav_PoHeader_PoItem' rel='http://schemas.microsoft.com/ado/2007/08/dataservices/related/Nav_PoHeader_PoItem' type='application/atom+xml;type=feed' title='Nav_PoHeader_PoItem' />
    <content type='application/xml'>
      <properties>
        <id>PoNumbers>4500000133</id>
        <id>CoCode>0001</id>
        <id>DocCat>F</id>
        <id>DocType>98</id>
        <id>Status>9</id>
        <id>Vendor>000005</id>
        <id>PurchOrg>7777</id>
        <id>PurGroup>777</id>
        <id>Currency>H20</id>
        <id>TargetVal>8910.0000</id>
      </properties>
    </content>
  </entry>
  <entry>
    <id>PoHeaderSet('4500000458')</id>
    <title type='text'>PoHeaderSet('4500000458')</title>
    <updated>2015-05-11T13:12:04Z</updated>
    <category term='ZGW_TRNG_DEMO2_SRV.PoHeader' scheme='http://schemas.microsoft.com/ado/2007/08/dataservices/scheme' />
    <link href='PoHeaderSet('4500000458')' rel='edit' title='PoHeader' />
    <link href='PoHeaderSet('4500000458')/Nav_PoHeader_PoItem' rel='http://schemas.microsoft.com/ado/2007/08/dataservices/related/Nav_PoHeader_PoItem' type='application/atom+xml;type=feed' title='Nav_PoHeader_PoItem' />
    <content type='application/xml'>
      <properties>
        <id>PoNumbers>4500000458</id>
        <id>CoCode>0001</id>
        <id>DocCat>F</id>
        <id>DocType>98</id>
        <id>Status>9</id>
        <id>Vendor>000005</id>
        <id>PurchOrg>7777</id>
        <id>PurGroup>777</id>
        <id>Currency>H20</id>
        <id>TargetVal>8910.0000</id>
      </properties>
    </content>
  </entry>
</feed>
```

Read Operation (Cont..)

GW-EO:GW-EO-03

Case 2: Fetch the details of a specific purchase order

Method to be implemented : PoHeaderSet_Get_EntitySet

Service URI: /sap/opu/odata/sap/ZGW_TRNG_DEMO2_SRV/PoHeaderSet('4500000458')

The screenshot displays the SAP NetWeaver Gateway Client interface. The top toolbar includes buttons for Execute, Select, Save, Maintain Service, and Service Implementation. The HTTP Method is set to GET, and the Request URI is /sap/opu/odata/sap/ZGW_TRNG_DEMO2_SRV/PoHeaderSet('4500000458'). The HTTP Response section shows a 200 status code and an application/atom+xml content type. The main pane displays the XML response, which is an Atom feed entry for the purchase order header set.

```
<?xml version='1.0' encoding='utf-8' ?>
- <entry xml:base='http://m-mum-
eccs.corp.capgemini.com:8080/sap/opu/odata/sap/ZGW_TRNG_DEMO2_SRV/'
xmlns='http://www.w3.org/2005/Atom'
xmlns:m='http://schemas.microsoft.com/ado/2007/08/dataservices/metadata'
xmlns:d='http://schemas.microsoft.com/ado/2007/08/dataservices'>
  <id>http://m-mum-eccs.corp.capgemini.com:8080/sap/opu/odata/sap/ZGW_TRNG_DEMO2_SRV/PoHeaderSet('4500000458')</id>
  <title type='text'>PoHeaderSet('4500000458')</title>
  <updated>2015-05-11T13:12:42Z</updated>
  <category terms='ZGW_TRNG_DEMO2_SRV.PoHeader'
  scheme='http://schemas.microsoft.com/ado/2007/08/dataservices/scheme' />
  <link href='PoHeaderSet('4500000458')' rel='edit' title='PoHeader' />
  <link href='PoHeaderSet('4500000458')/Nav_PoHeader_PoItem'
  type='application/atom+xml;type=feed' title='Nav_PoHeader_PoItem' />
  <content type='application/xml'>
    <m:properties>
      <d:PoNumber>4500000458</d:PoNumber>
      <d:ExtCode>ZCA1</d:ExtCode>
      <d:DocCat>F</d:DocCat>
      <d:DocType>NBCH</d:DocType>
      <d>Status>9</d>Status>
      <d:Vendor>ZUSCA1</d:Vendor>
      <d:PurchOrg>ZCA1</d:PurchOrg>
      <d:PurGroup>001</d:PurGroup>
      <d:Currency>USD</d:Currency>
      <d:TargetVal>0.0000</d:TargetVal>
    </m:properties>
  </content>
</entry>
```


Create

❖ Create Operation:

We can send the request payloads in both XML and JSON formats.

Sample Request URI and Payload

URI: /sap/opu/odata/sap/ZGW_TRAINING_NITIN1_SRV/MatSet

HTTP Method: POST

HTTP Request

Header Name	Value
Content-Type	application/atom+xml;type=entry; charset=utf-8

```
1  <?xml version="1.0" encoding="utf-8"?>
2  <entry xml:base="http://in-mum-eccs.corp.capgemini.com:8000/sap/opu/odata/sap/ZPROJ_MATERIAL_001_SRV."
3  xmlns="http://www.w3.org/2005/Atom"
4  xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata"
5  xmlns:d="http://schemas.microsoft.com/ado/2007/08/dataservices">
6    <content type="application/xml">
7      <m:properties>
8        <d:IBukrs>1000</d:IBukrs>
9        <d:IFlag>I</d:IFlag>
10       <d:IMatnr>TESTNEW3</d:IMatnr>
11       <d:IMtart>ZMAT</d:IMtart>
12     </m:properties>
13   </content>
14 </entry>
```

Update

❖ Update Operation:

We can send the request payloads in both XML and JSON formats. Sample Request URI and Payload

URI: /sap/opu/odata/sap/ZGW_TRAINING_NITIN1_SRV/MatSet(IFlag='U',IMatnr='TESTNEW1')

HTTP Method : PUT

HTTP Request

Header Name	Value
Content-Type	application/atom+xml;type=entry; charset=utf-8

```
1  <?xml version="1.0" encoding="utf-8"?>
2  <entry xml:base="http://in-mum-eccs.corp.capgemini.com:8000/sap/opu/odata/sap/ZPROJ_MATERIAL_001_SRV/"
3  xmlns="http://www.w3.org/2005/Atom"
4  xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata"
5  xmlns:d="http://schemas.microsoft.com/ado/2007/08/dataservices">
6  <content type="application/xml">
7    <m:properties>
8      <d:IBukrs>3000</d:IBukrs>
9      <d:IFlag>I</d:IFlag>
10     <d:IMatnr>TESTNEW1</d:IMatnr>
11     <d:IMtart>ZMAT</d:IMtart>
12   </m:properties>
13 </content>
14 </entry>
```

Function Import

❖ Function Import

OData supports further service operations (function imports) that can be invoked by the HTTP methods GET or POST for anything that cannot be mapped to the standard CRUD operations. You can implement such additional service operations in the Service Builder by creating function imports within your data model.

HTTP Method: GET/POST

Note: While it is simple to create new function imports to invoke custom operations, if the operation you want to use can be invoked using a standard CRUD operation, you should not create a function import.

Function Import

GW-EO:GW-EO-02

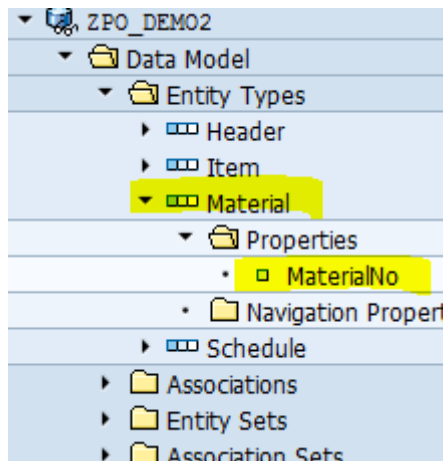
Function Import example:

https://help.sap.com/saphelp_nw74/helpdata/en/c5/dc22512c312314e100000000a44176d/content.htm

We will consider material validation example here.

Create a project in SEGW

Create an entity type name material with the following properties



Function Import

GW-EO:GW-EO-02

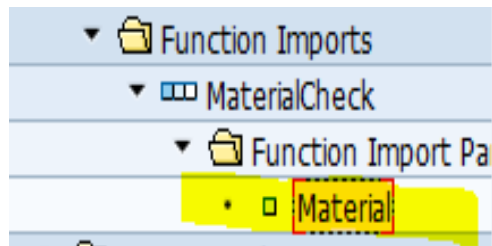
Function Import example:

We only need one property i.e. material number here as we will send back only material number if it is valid.

Right click on function imports->Create -> Enter the following properties

Create an import parameter for the function import:

Function Imports								
Name	Return Type Kind	Return Type	Return Cardinality	Return Entity Set	HTTP	Action for Entity...	Label	L...
MaterialCheck	Entity Type	Material	0..1		GET			T



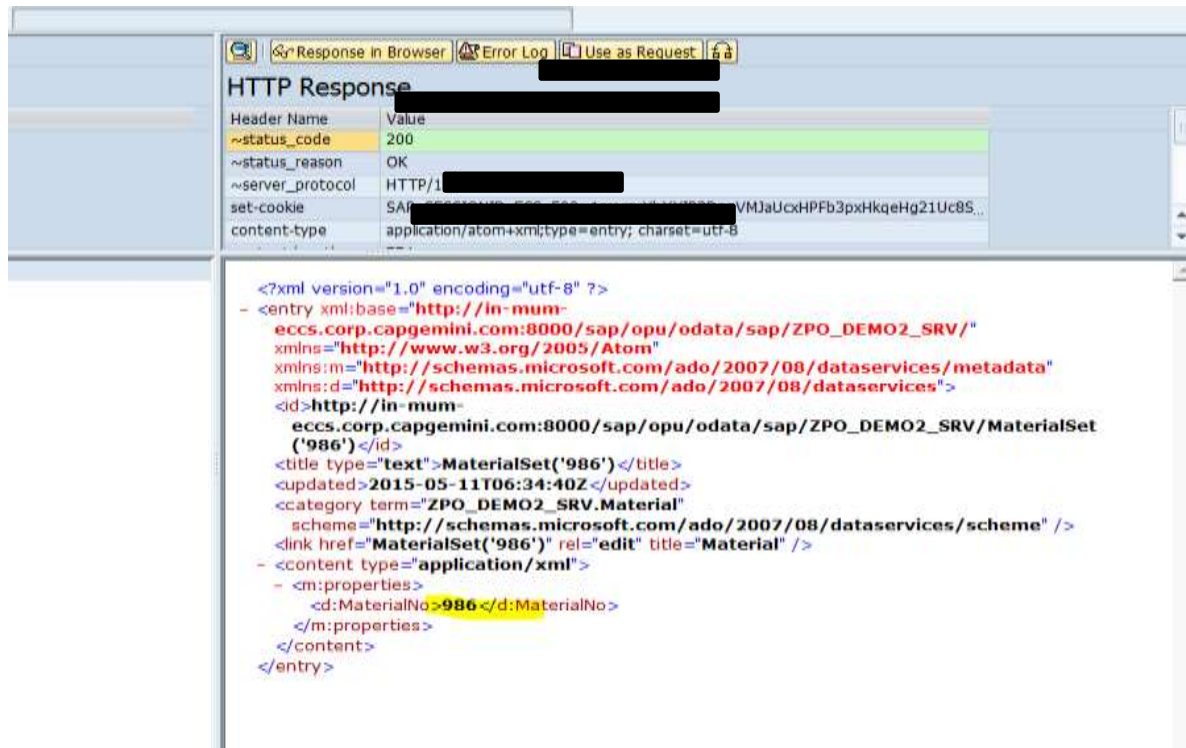
Function Import

GW-EO:GW-EO-02

Test from GW client with the URI:

URI:

/sap/opu/odata/sap/ZPO_DEMO2_SRV/MaterialCheck?Material='986'



The screenshot shows an HTTP Response in a browser tool. The status is 200 OK. The content type is application/atom+xml;type=entry; charset=utf-8. The XML content is as follows:

```
<?xml version="1.0" encoding="utf-8" ?>
- <entry xml:base="http://in-mum-
  eccs.corp.capgemini.com:8000/sap/opu/odata/sap/ZPO_DEMO2_SRV/"
  xmlns="http://www.w3.org/2005/Atom"
  xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata"
  xmlns:d="http://schemas.microsoft.com/ado/2007/08/dataservices">
  <id>http://in-mum-
    eccs.corp.capgemini.com:8000/sap/opu/odata/sap/ZPO_DEMO2_SRV/MaterialSet
    ('986')</id>
  <title type="text">MaterialSet('986')</title>
  <updated>2015-05-11T06:34:40Z</updated>
  <category term="ZPO_DEMO2_SRV.Material"
    scheme="http://schemas.microsoft.com/ado/2007/08/dataservices/scheme" />
  <link href="MaterialSet('986')" rel="edit" title="Material" />
  - <content type="application/xml">
    - <m:properties>
      <d:MaterialNo>986</d:MaterialNo>
      </m:properties>
    </content>
  </entry>
```