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Display Messages in ODATA Header Response while success and update and usage of ALL Query operations.

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Introduction

This article explains the gradual creation of OData services, mapping messages on the OData response header, and simple operations(\$filter, \$orderby, \$inline count, \$skip and \$top).

Overview:-

1) Creation of OData service

2) Registering the OData Service

3) Redefine methods to write the code

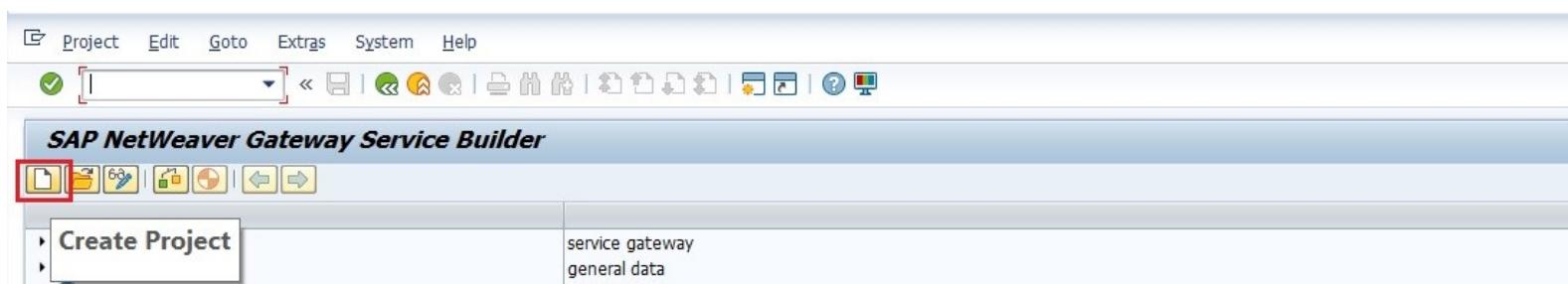
4) Simple operations of OData

5) Add Success/ Error Message

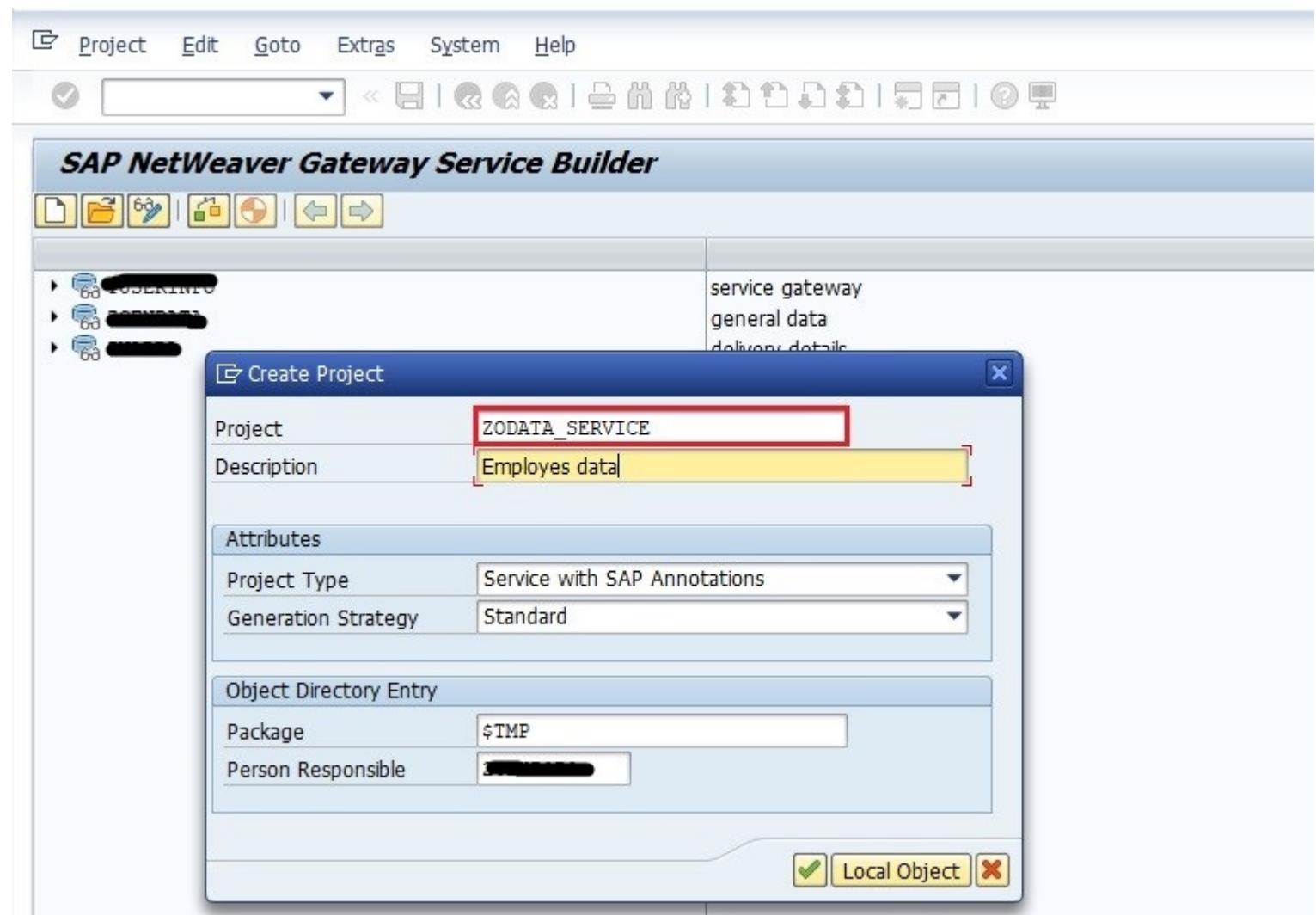
6) Configuration settings to resolve HTTP proxy error

1) Creation of OData service

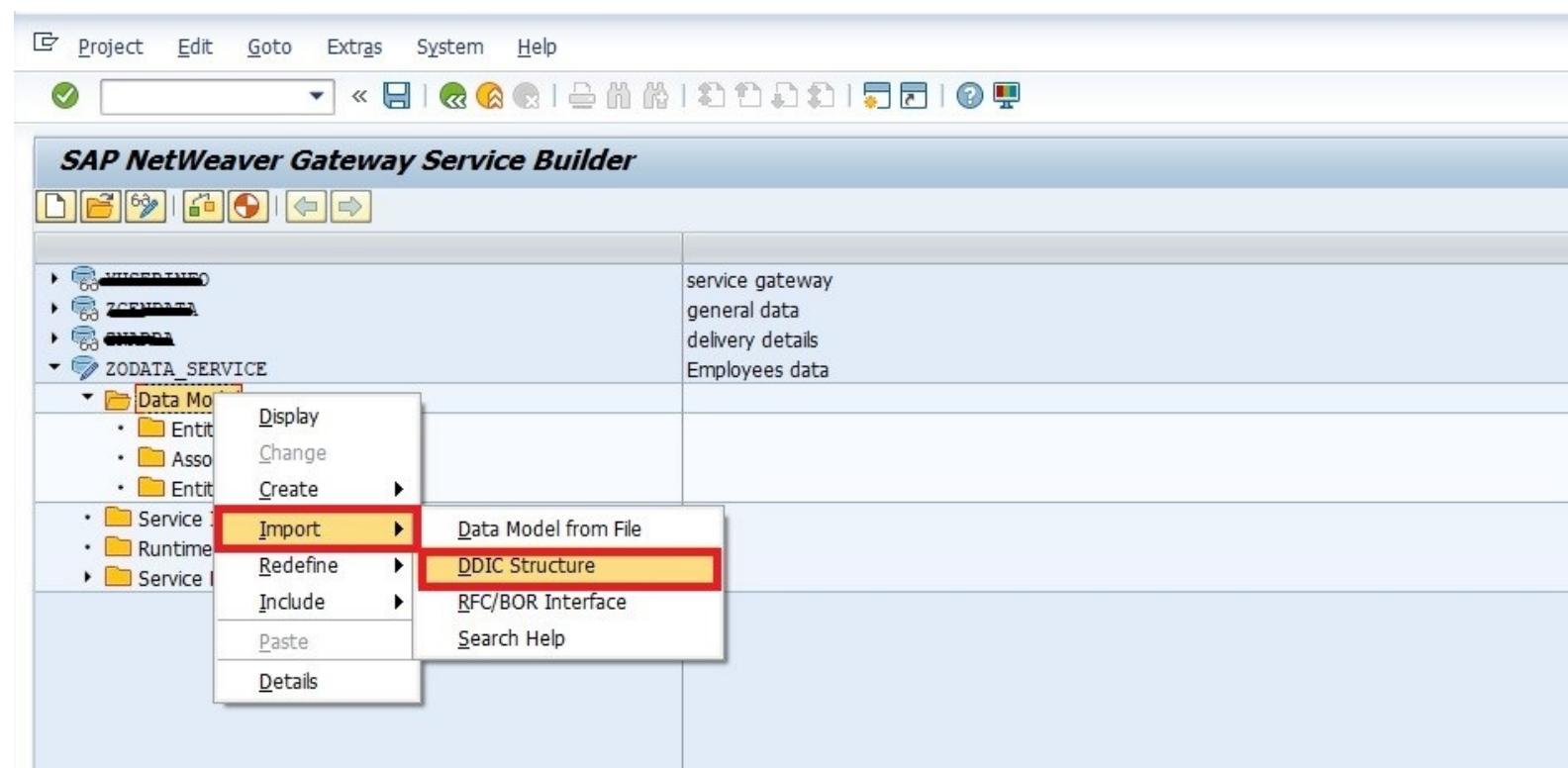
Go to transaction code – SEGW.



Click on Icon Create. A pop window will appear, Fill the details as per below mention in screen shot and click on check icon or enter.

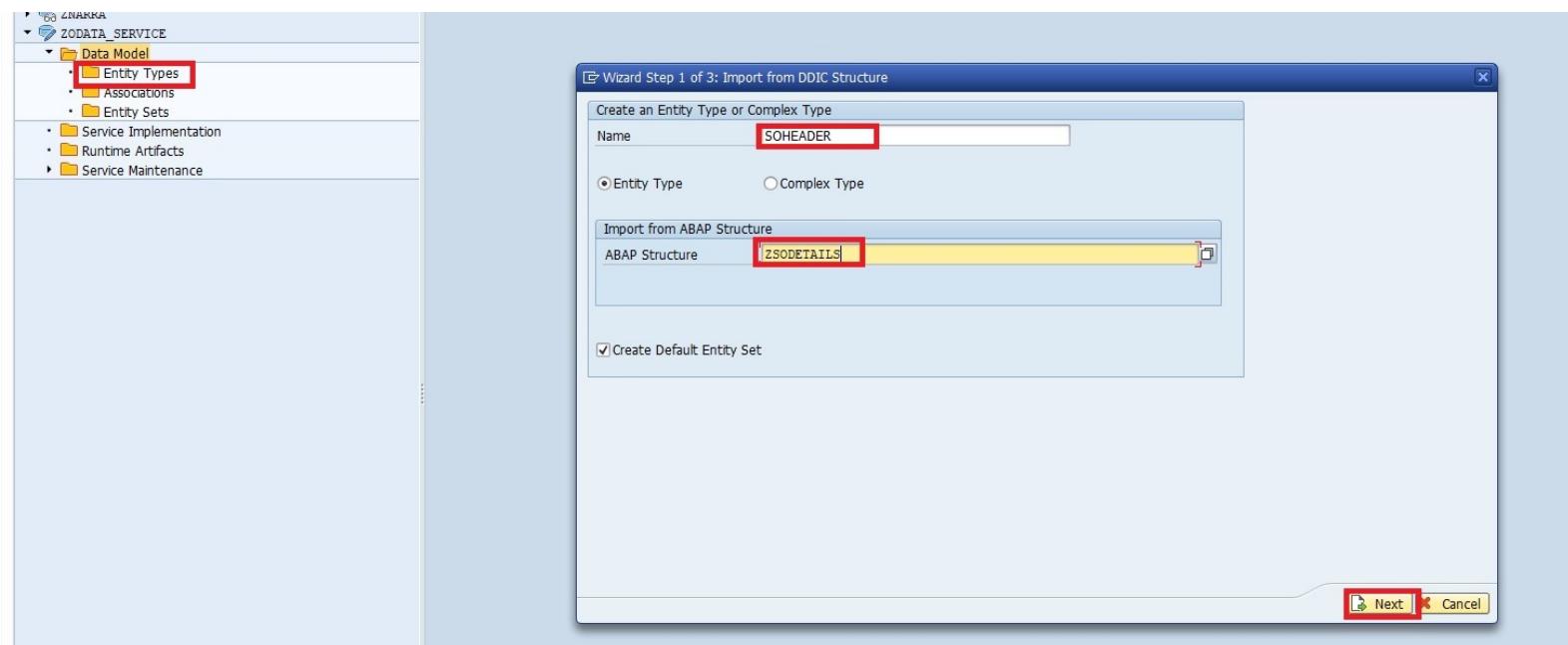


Below screen will appear where you can see below folder in project. In Folder data model, we can see three sub folders. Entity Type – it acts as work area, Entity Sets -It act as internal table and associations. Now we are going to define structure of work area and internal table, Right click on Data model select import and select DDIC structure .

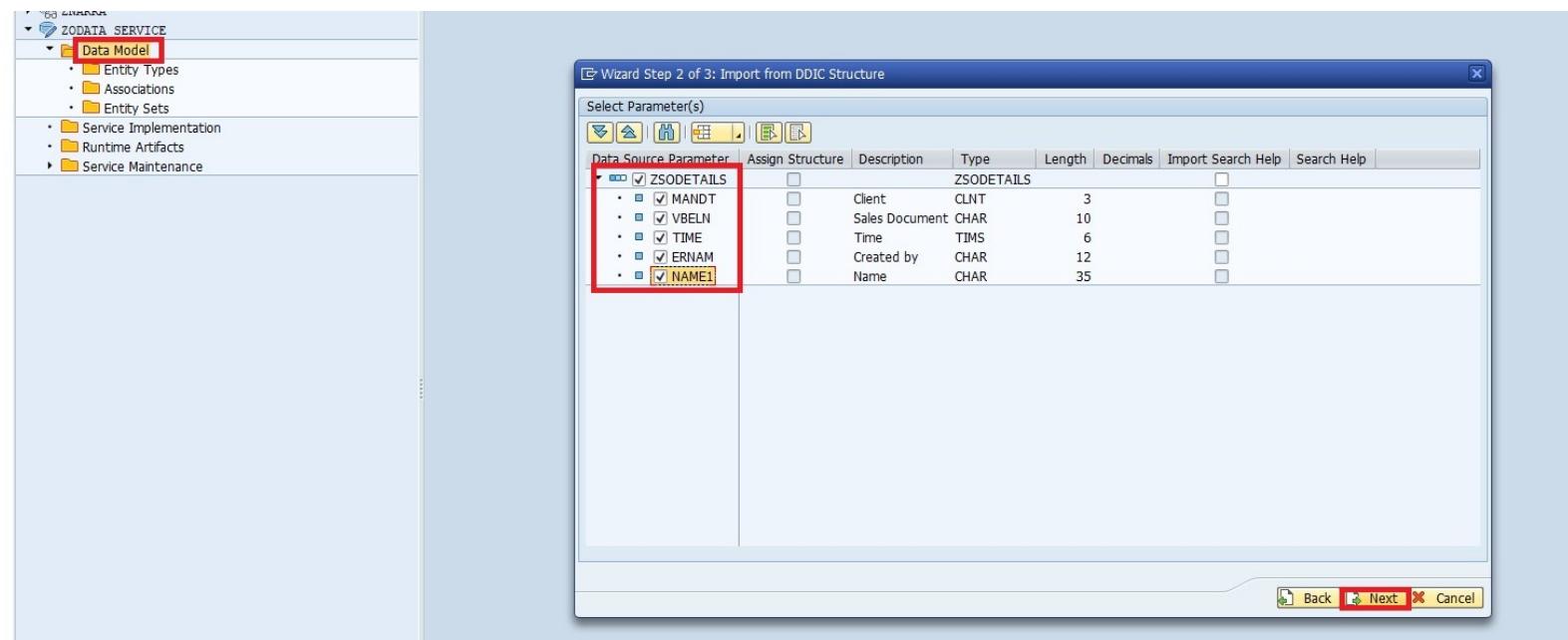


Here give the details of structure and structure name as per below screen below.

Select radio button Entity type and click on check box entity set. fill ABAP structure as required and click on next.



Now you will get the popup screen with provided table fields name. Select fields for your structure and click on next.

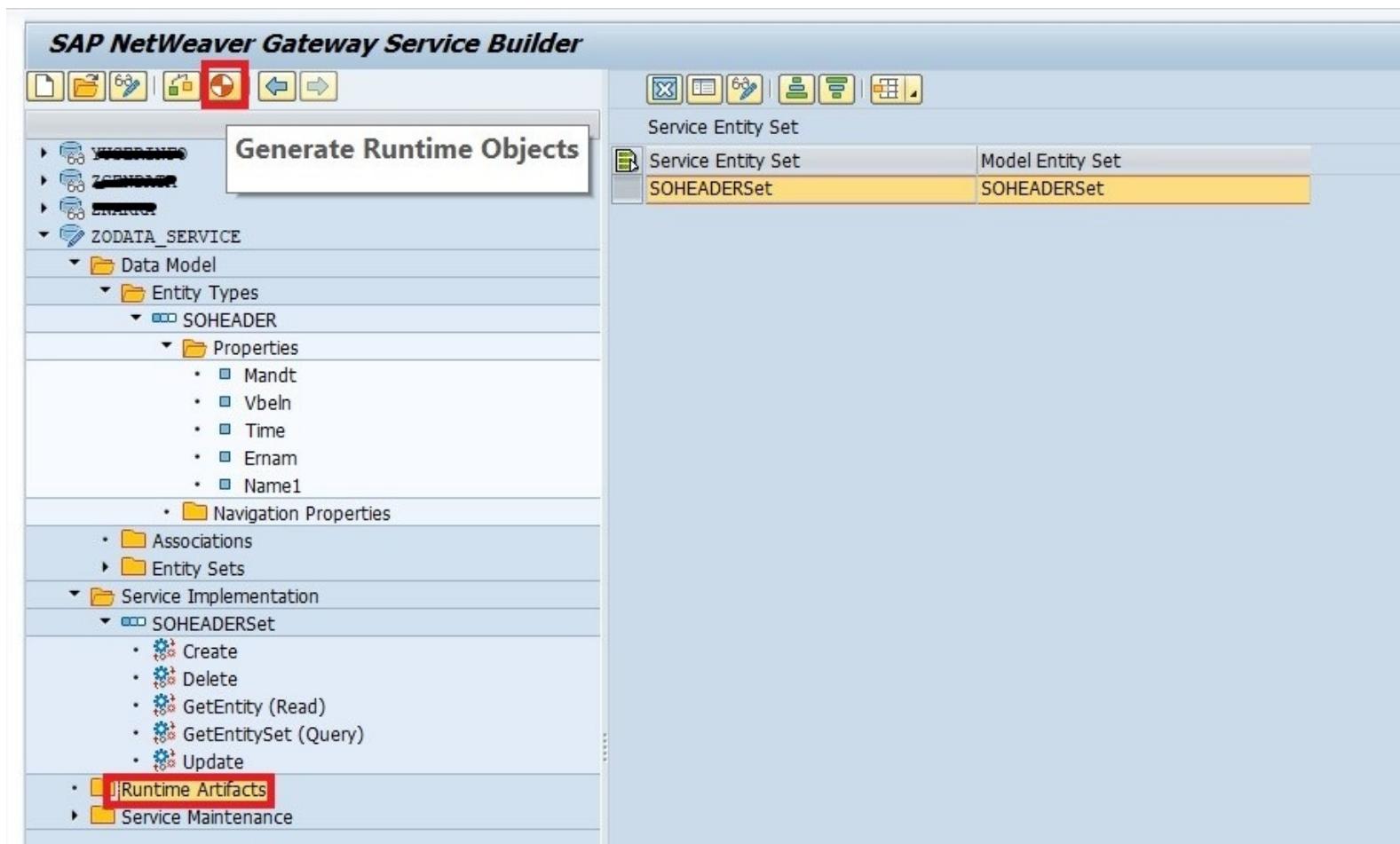


Other window will appear where we have to select the key field. Please select the key field and click on finish.

The screenshot shows the SAP Studio interface. On the left, the 'Data Model' section of the ZODATA_SERVICE project is visible, containing Entity Types, Associations, Entity Sets, Service Implementation, Runtime Artifacts, and Service Maintenance. On the right, a 'Wizard Step 3 of 3: Import from DDIC Structure' dialog box is open, titled 'Modify Entity Type'. This dialog displays a table with columns: IsEn..., Complex/Entity Type, ABAP Name, Is Key, Type, Name, and Label. The table lists five entries for the entity type SOHEADER. The 'Is Key' column for the first entry (MANDT) has a checked checkbox, which is highlighted with a red border. The 'Finish' button at the bottom right of the dialog is also highlighted with a red border.

| IsEn... | Complex/Entity Type | ABAP Name | Is Key | Type | Name | Label |
|-------------------------------------|---------------------|-----------|-------------------------------------|------|-------|----------------|
| <input checked="" type="checkbox"/> | SOHEADER | MANDT | <input checked="" type="checkbox"/> | CLNT | Mandt | Client |
| <input checked="" type="checkbox"/> | SOHEADER | VBELN | <input checked="" type="checkbox"/> | CHAR | Vbeln | Sales Document |
| <input checked="" type="checkbox"/> | SOHEADER | TIME | <input type="checkbox"/> | TIMS | Time | Time |
| <input checked="" type="checkbox"/> | SOHEADER | ERNAM | <input type="checkbox"/> | CHAR | Ernam | Created by |
| <input checked="" type="checkbox"/> | SOHEADER | NAME1 | <input type="checkbox"/> | CHAR | Name1 | Name |

Let's generate Runtime Artifacts. Click on generate runtime objects button. It will display a popup and it will ask for a package, provide it. Keep the default class names as-is and click on enter button.



SAP NetWeaver Gateway Service Builder

Project Edit Goto Extras System Help

Service Entity Set

Service Entity Set Model Entity Set

SOHEADERSet SOHEADERSet

Model and Service Definition

Model Provider Class

Class Name: ZCL_ZODATA_SERVICE_MPC_EXT
Base Class Name: ZCL_ZODATA_SERVICE_MPC

Data Provider Class

Generate Classes

Class Name: ZCL_ZODATA_SERVICE_DPC_EXT
Base Class Name: ZCL_ZODATA_SERVICE_DPC

Service Registration

Technical Model Name: ZODATA_SERVICE_MDL
Model Version: 1
Technical Service Name: ZODATA_SERVICE_SRV
Service Version: 1

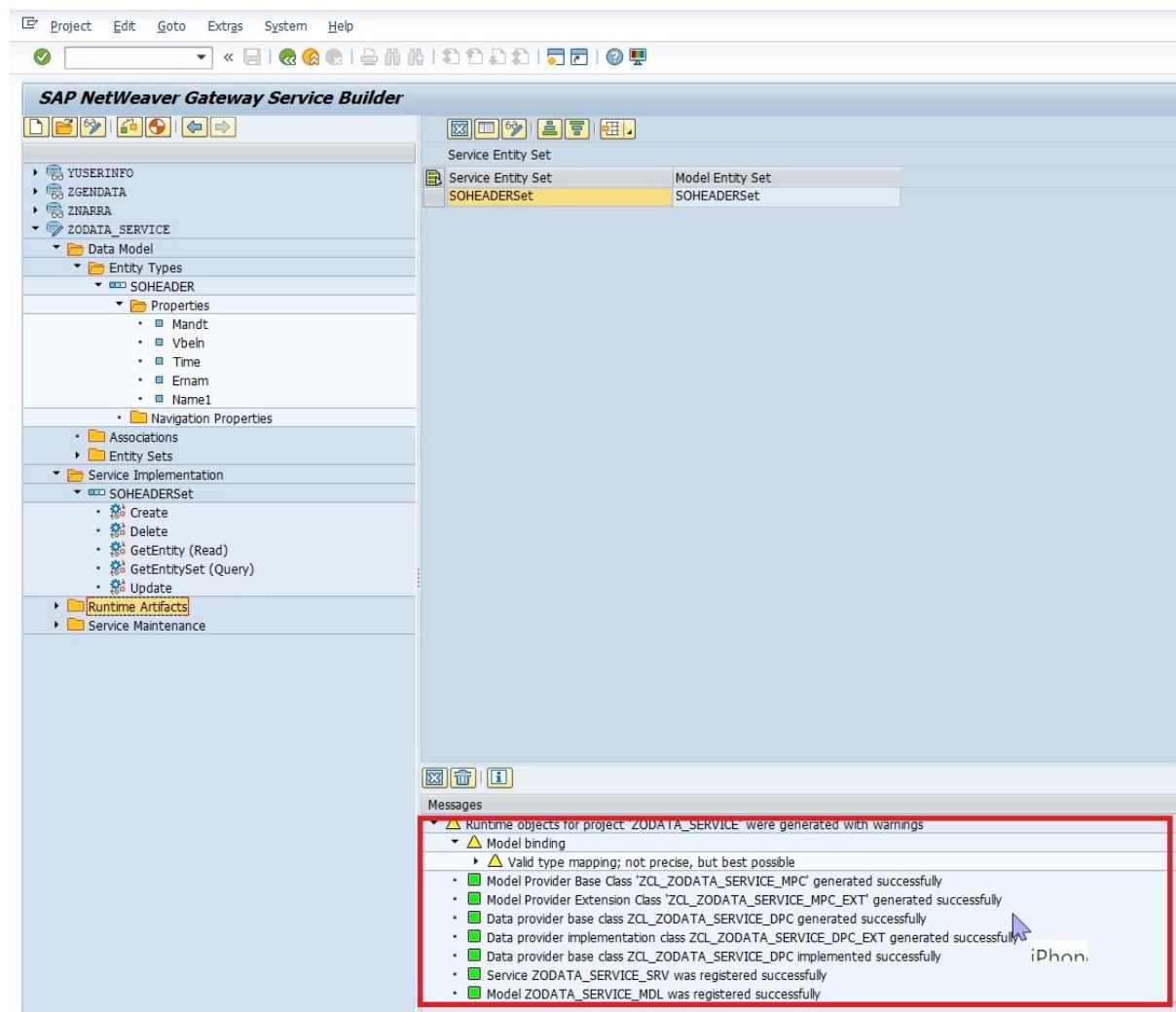
Messages

Project 'ZODATA_SERVICE' has been checked; check warnings

Model binding

Valid type mapping; not precise, but best possible

On successful generation, you will see this kind of message log and generated artifacts. 4 classes will get generated. 2 for Data provider and 2 for Model provider class.



2) Registering the Service

Go to transaction code **/IWFND/MAINT_SERVICE** and Click on Add services button .

| Type | Technical Service Name | V... | Service Description | External Service Name | Namespace | OAuth | Soft State Status | Is SAP Service |
|------|------------------------|------|----------------------------|-----------------------|-----------|-------------------------------------|-------------------|----------------|
| | /IWFND/SG_MED_CATALOG | 1 | Catalog Service | CATALOGSERVICE | /IWFND/ | <input type="checkbox"/> | | |
| | /IWFND/SG_MED_CATALOG | 2 | Catalog Service Version 2 | CATALOGSERVICE | /IWFND/ | <input type="checkbox"/> | | |
| BEP | DAAG_MNGGRP | 1 | Data Aging Manage Groups | DAAG_MNGGRP | | <input checked="" type="checkbox"/> | | |
| BEP | DAAC_MONITOR | 1 | Data Aging Monitor Objects | DAAC_MONITOR | | <input type="checkbox"/> | | |

Below screen will appear. Provide system Alias and click on Get services button.
Now select your service and click on Add selected Services.

| Type | Technical Service Name | Ver. | Serv. | External Service Name | Namespace | External Mapping ID | Soft State Status |
|------|------------------------|------|---------------------|-----------------------|-----------|---------------------|-------------------|
| BEP | VBL_APPL_DEF_SRV | 1 | CL_VBL_APPL_DEF_SRV | VBL_APPL_DEF_SRV | | | |
| BEP | VBL_GEOCODER_SRV | 1 | CL_VBL_GEOCODER_SRV | VBL_GEOCODER_SRV | | | |

The below screen will appear, enter the package details and click on tick icon. An Information message will be shown where it will confirm about the service is created and metadata loaded successfully.

The screenshot shows the SAP Fiori Launchpad with the 'Add Selected Services' dialog open. The dialog contains the following configuration:

- Service:**
 - Technical Service Name: **ZODATA_SERVICE_SRV**
 - Service Version: 1
 - Description: Employees data
 - External Service Name: ZODATA_SERVICE_SRV
 - Namespace: (empty)
 - External Mapping ID: (empty)
 - External Data Source Type: C
- Model:**
 - Technical Model Name: ZODATA_SERVICE_MDL
 - Model Version: 1
- Creation Information:**
 - Package Assignment: \$TMP
 - Local Object (radio button selected)
- ICF Node:**
 - Standard Mode (radio button selected)
 - None (radio button)
- OAuth enablement:**
 - Enable OAuth for Service (checkbox)

At the bottom of the dialog, there is a table of BEPs (Business Entity Points) with the following data:

| BEP | Service | Description | Service |
|-----|-------------------------|---------------------------------|-------------------------|
| BEP | ZSRA018_SO_TRACKING_SRV | 1 Sales Order Tracking Extended | ZSRA018_SO_TRACKING_SRV |
| BEP | ZSRA020_PO_TRACKING_SRV | 1 PO Tracking Extensibility | ZSRA020_PO_TRACKING_SRV |
| BEP | ZSYCLO | 1 Metering for Cyclo apps | ZSYCLO |
| BEP | ZSYCLOSTATS_SRV | 1 Cyclo Statistic Table | ZSYCLOSTATS_SRV |

Now click back and go to main screen of transaction /IWFND/MAINT_SERVICE and find your service. Click on SAP Gateway Client and actually test your service.

Activate and Maintain Services

Service Catalog

| Type | Technical Service Name | V... | Service Description | External Service Name | Namespace | OAut. | Soft State Status | Is SAP Service |
|------|-----------------------------------|------|--|-----------------------------------|-----------|-------------------------------------|-------------------|----------------|
| BEP | S_EPM_SADL_GW_DEV_SCEN_RO_SRV | 1 | EPM: SADL-based GW-Service 'NW 2013 Dev. Scen' | S_EPM_SADL_GW_DEV_SCEN_RO_SRV | | <input checked="" type="checkbox"/> | | |
| BEP | SD_MYCONTACTS | 1 | Fiori My Contacts App | SD_MYCONTACTS | | <input checked="" type="checkbox"/> | | |
| BEP | SD_SOFM_CREDIT_BLOCK_SRV | 1 | Fiori Wave2 SOFM Credit Blocked Sales Orders | SD_SOFM_CREDIT_BLOCK_SRV | | <input checked="" type="checkbox"/> | | |
| BEP | SD_SOFM_DELIVERY_SRV | 1 | Fiori Wave2 SOFM Delivery | SD_SOFM_DELIVERY_SRV_01 | | <input checked="" type="checkbox"/> | | |
| BEP | SDM_MRP_COCKPIT_DETAILS_FIORI_SRV | 1 | MRP Cockpit | SDM_MRP_COCKPIT_DETAILS_FIORI_SRV | | <input checked="" type="checkbox"/> | | |
| BEP | SDM_MRP_COCKPIT_DTL_SRV | 1 | MRP Cockpit Details | SDM_MRP_COCKPIT_DTL_SRV | | <input checked="" type="checkbox"/> | | |
| BEP | SDM_MRP_COCKPIT_FIORI_SRV | 1 | | SDM_MRP_COCKPIT_FIORI_SRV | | <input checked="" type="checkbox"/> | | |
| BEP | SEPM_HANA_EXT_PAL_ODATA_SRV | 1 | SEPM_HANA_EXT_PAL_ODATA_SRV | SEPM_HANA_EXT_PAL_ODATA_SRV | | <input checked="" type="checkbox"/> | | |
| BEP | STERM_SEARCH_SRV | 1 | Terminology Search | STERM_SEARCH_SRV | | <input checked="" type="checkbox"/> | | |
| BEP | STERM_SUGGEST_SRV | 1 | Autosuggest for Terminology | STERM_SUGGEST_SRV | | <input checked="" type="checkbox"/> | | |
| BEP | STERM_TERMINOLOGY_SEARCH_SRV | 1 | Terminology Search with Translations | STERM_TERMINOLOGY_SEARCH_SRV | | <input type="checkbox"/> | | |
| BEP | /IWEND/SUBSCRIPTIONMANAGEMENT | 2 | MOC enabled Subscription Management Service | SUBSCRIPTIONMANAGEMENT | /IWBEPEP/ | <input type="checkbox"/> | | |
| BEP | /XPPM/TASK_DB_SRV | 1 | XPPM/CL_TASK_DB_DPC_EXT | TASK_DB_SRV | /XPPM/ | <input type="checkbox"/> | | |
| BEP | UPSTREAM_DEF | 1 | Odata Package for Upstream Deferment | UPSTREAM_DEF | | <input checked="" type="checkbox"/> | | |
| BEP | /IWEND/USAGEEXTRACTOR | 1 | Metering Usage Extractor | USAGEEXTRACTOR | /IWEND/ | <input type="checkbox"/> | | |
| BEP | /IWEND/SG_USER_SERVICE | 1 | Information Worker - User Service | USERSERVICE | /IWEND/ | <input type="checkbox"/> | | |
| BEP | YUSERINFO_SRV | 1 | service gateway | YUSERINFO_SRV | | <input checked="" type="checkbox"/> | Not Supported | |
| BEP | ZAP_ERKO_SRV | 1 | ekko | ZAP_ERKO_SRV | | <input checked="" type="checkbox"/> | Not Supported | |
| BEP | ZGENDATA_SRV | 1 | general data | ZGENDATA_SRV | | <input checked="" type="checkbox"/> | Not Supported | |
| BEP | ZGW_PO_SRV | 1 | service for po | ZGW_PO_SRV | | <input checked="" type="checkbox"/> | Not Supported | |
| BEP | ZGWS_GOODS_ISSUE_SRV | 1 | Gateway Service : Goods Create Issue | ZGWS_GOODS_ISSUE_SRV | | <input checked="" type="checkbox"/> | | |
| BEP | ZGWS_HR_COMPENSATION_PROFILE_SRV | 1 | ODATA service to get data for compensation prof... | ZGWS_HR_COMPENSATION_PROFILE_SRV | | <input checked="" type="checkbox"/> | | |
| BEP | ZII_ODATA_SRV | 1 | simple_odata | ZII_ODATA_SRV | | <input checked="" type="checkbox"/> | Not Supported | |
| BEP | ZII_PODETAILS_SRV | 1 | podetails | ZII_PODETAILS_SRV | | <input checked="" type="checkbox"/> | Not Supported | |
| BEP | ZIARRA_SRV | 1 | delivery details | ZIARRA_SRV | | <input checked="" type="checkbox"/> | Not Supported | |
| BEP | ZODATA_SERVICE_SRV | 1 | Employees data | ZODATA_SERVICE_SRV | | <input checked="" type="checkbox"/> | Not Supported | |

ICF Nodes

| Status | ICF Node | Session Time-out S | |
|--------|----------|--------------------|--|
| OK | ODATA | 00:00:00 | |

Gateway Client

System Aliases

| SAP System Alias | Description | User Role | Default | Host Name |
|------------------|-----------------------|-----------|-------------------------------------|-----------|
| LOCAL | Local Gateway Service | | <input checked="" type="checkbox"/> | |

Click on execute button and you can see your first created OData in action.

The screenshot shows the SAP NetWeaver Gateway Client interface. In the top navigation bar, the title "SAP NetWeaver Gateway Client" is visible. Below it, the "HTTP Method" dropdown is set to "GET". The "Request URI" field contains the URL `/sap/opu/odata/sap/ZODATA_SERVICE_SRV/?$format=xml`, which is highlighted with a red box. The "Protocol" dropdown shows "HTTP". On the right side of the header, there is a checkbox for "Reuse HTTP Connection (e.g. necessary for Soft State)" and a button labeled "Add URI Option".

The main area is divided into two panes. The left pane, titled "HTTP Request", contains a table with columns "Header Name" and "Value". It lists several headers: `~status_code` with value `200` (which is also highlighted with a red box), `~status_reason` with value `OK`, `~server_protocol` with value `HTTP/1.0`, `set-cookie` with value `sap-usercontext=sap-client=800; path=/`, `content-type` with value `application/xml`, and `content-length` with value `903`.

The right pane, titled "HTTP Response", displays the XML response body. The XML structure is as follows:

```
<app.workspace>
  <atom:title type="text">Data</atom:title>
  - <app:collection href="#">
    sap:content-version="1"
    sap:pageable="false"
    sap:deletable="false"
    sap:updatable="false"
    sap:createable="false">
      <atom:title type="text">SOHEADERSet</atom:title>
      <sap:member>
        <title>SOHEADER</title>
      </sap:member>
    </app:collection>
  </app.workspace>
```

If you want to see your output in JSON, just change `$format=xml` to `$format=Json`. You can see these options in ADD URI OPTION button.

The screenshot shows the SAP NetWeaver Gateway Client interface. In the top navigation bar, the 'Execute' button is highlighted. The 'Request URI' field contains the URL `/sap/opu/odata/sap/ZODATA_SERVICE_SRV/?$format=json`. The 'HTTP Response' section displays the following headers:

| Header Name | Value |
|-------------------------------|--|
| <code>~status_code</code> | 200 |
| <code>~status_reason</code> | OK |
| <code>~server_protocol</code> | HTTP/1.0 |
| <code>set-cookie</code> | sap-usercontext=sap-client=800; path=/ |
| <code>content-type</code> | application/json; charset=utf-8 |
| <code>content-length</code> | 36 |

The response body is a JSON object:

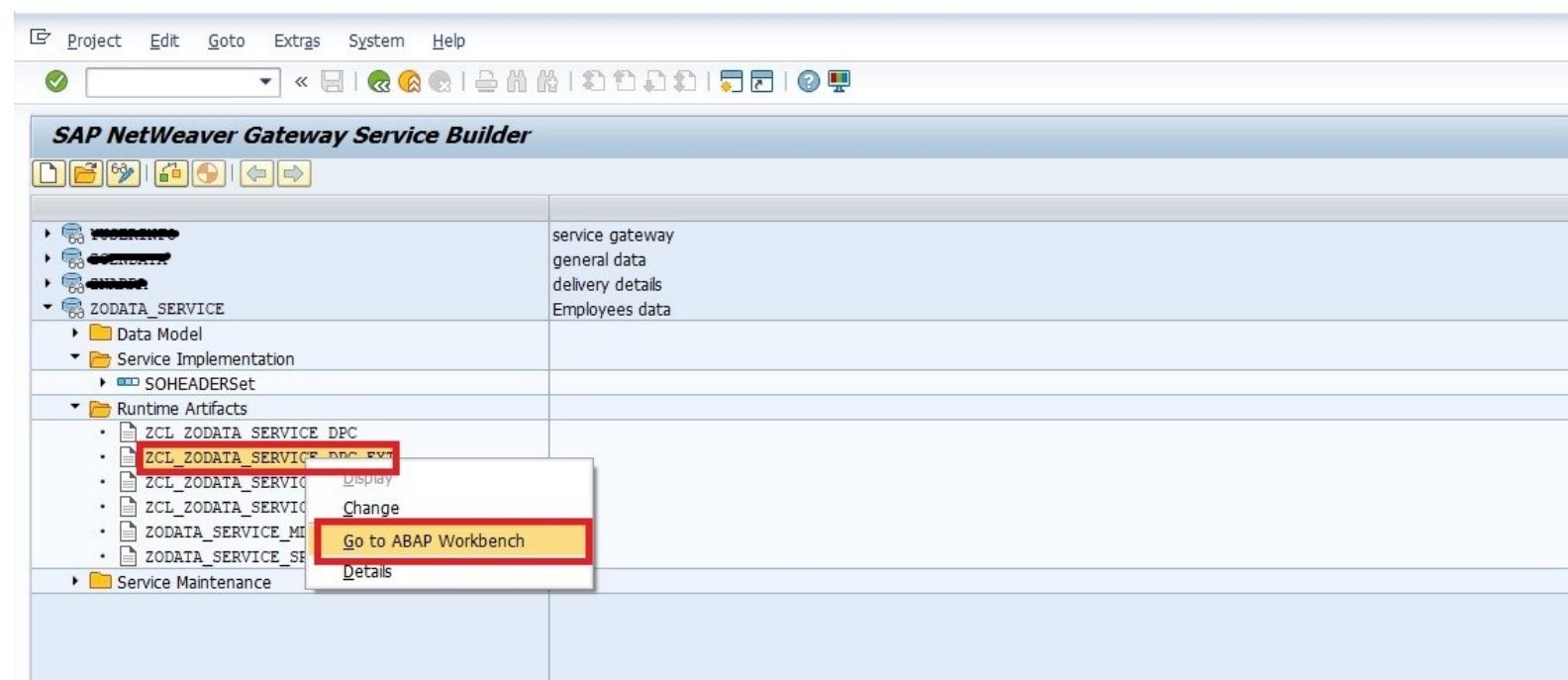
```

1 | {
2 |   "d" : {
3 |     "EntitySets" : [
4 |       "SOHEADERSET"
5 |     ]
6 |   }
7 | }
  
```

Now we will write code to get data.

3) Redefine methods to write the code

Go to transaction code **SEGW** and open Runtime artifacts folder and right click on Class **ZCL_ZODATA_SERVICE_DPC_EXT** and select Go to ABAP Workbench option. Select edit mode and redefine method **SOHEADERSET_GET_ENTITYSET**. Write code in the methods. Save and activate all related objects for classes.



The corresponding Methods displayed like

The screenshot shows the SAP Class Builder interface for the class `ZCL_ZODATA_SERVICE_DPC_EXT`. The left pane is a Repository Browser displaying the class structure. The right pane shows the class details, specifically the Methods tab. A red box highlights the 'Inherited Methods' section under the Methods tab, which lists various OData runtime methods. The table below provides a detailed view of these methods:

| Method | Level | Visibility | Description |
|----------------------------------|----------|------------|--|
| /IWBEPEP/IF_MGW_SOST_SRV_RUNTIME | Instance | Public | Called before an APPS operation if soft-state mode is active |
| /IWBEPEP/IF_MGW_SOST_SRV_RUNTIME | Instance | Public | Called after an APPS operation if soft-state mode is active |
| /IWBEPEP/IF_MGW_SOST_SRV_RUNTIME | Instance | Public | Reset of the data provider - Clean up the appl session! |
| /IWBEPEP/IF_MGW_CORE_SRV_RUNTIME | Instance | Public | Core - Execute READ request (CReadUD) - ENTRY - |
| /IWBEPEP/IF_MGW_CORE_SRV_RUNTIME | Instance | Public | Core - Execute READ request (CReadUD) - STREAM - |
| /IWBEPEP/IF_MGW_CORE_SRV_RUNTIME | Instance | Public | Core - Execute function import |
| /IWBEPEP/IF_MGW_CORE_SRV_RUNTIME | Instance | Public | Core - Execute UPDATE request (CRUpdateD) |
| /IWBEPEP/IF_MGW_CORE_SRV_RUNTIME | Instance | Public | Core - Execute CREATE request (CreateRUD) |
| /IWBEPEP/IF_MGW_CORE_SRV_RUNTIME | Instance | Public | Core - Execute DELETE request (CRUDelete) |
| /IWBEPEP/IF_MGW_CORE_SRV_RUNTIME | Instance | Public | Core - Execute a READ request (CReadUD) - FEED |
| /IWBEPEP/IF_MGW_CORE_SRV_RUNTIME | Instance | Public | Core - Initializes the Runtime Implementation |
| /IWBEPEP/IF_MGW_CORE_SRV_RUNTIME | Instance | Public | Core - Initializes the Request Context |
| /IWBEPEP/IF_MGW_CORE_SRV_RUNTIME | Instance | Public | Core - Set current context |
| /IWBEPEP/IF_MGW_CORE_SRV_RUNTIME | Instance | Public | Core - Begin of a changeset |
| /IWBEPEP/IF_MGW_CORE_SRV_RUNTIME | Instance | Public | Core - End of a changeset |
| /IWBEPEP/IF_MGW_CORE_SRV_RUNTIME | Instance | Public | Core - Process a changeset (all operations at once) |
| /TURBEP/IF_MGW_CORE_SRV_RUNTIME | Instance | Public | Core - Clean up. Needed for single instance PART is used |

Again Go to The Transaction `/IWFND/MAINT_SERVICE` and find your service.

Click on SAP Gateway Client and select the Entity set from the entity sets button and execute, you will get the header data in response.

The screenshot shows the SAP NetWeaver Gateway Client interface. The top navigation bar includes 'Execute', 'Select', 'Maintain Service', 'Service Implementation', and 'EntitySets'. The 'EntitySets' tab is selected. The 'HTTP Method' dropdown shows 'GET' is selected. The 'Request URI' field contains '/sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet'. The 'Protocol' dropdown shows 'HTTP/1.0 HTTPS'. The 'HTTP Request' section shows the query parameters. The 'HTTP Response' section displays the server's response headers, including 'status_code' (200), 'status_reason' (OK), 'server_protocol' (HTTP/1.0), 'set-cookie' (sap-usercontext=sap-client=800; path=/), 'content-type' (application/atom+xml;type=feed; charset=utf-8), and 'content-length' (1283). The main content area shows the XML response body:

```

(Mandt='800',Vbeln='1000')</id>
<title type="text">SOHEADERSet
(Mandt='800',Vbeln='1000')</title>
<updated>2021-07-10T08:45:41Z</updated>
<category
  scheme="http://schemas.microsoft.com/ado/2007/08/data
  term="ZODATA_SERVICE_SRV.SOHEADER"/>
<link title="SOHEADER" rel="self" href="SOHEADERSet
(Mandt='800',Vbeln='1000')"/>
- <content type="application/xml">
  - <m:properties
    xmlns:d="http://schemas.microsoft.com/ado/2007/08/data
    xmlns:m="http://schemas.microsoft.com/ado/2007/08/dat
      <d:Mandt>800</d:Mandt>
      <d:Vbeln>1000</d:Vbeln>
      <d:Time>PT10H25M05S</d:Time>
      <d:Ernam>BOLLINGER</d:Ernam>
      <d:Name1>ROI ITNGFR</d:Name1>

```

4) Simple operations of OData

\$count,\$filter,\$orderby,\$inlinecount,\$top and \$skip operations using OData services

SOURCE CODE :

```
SELECT * FROM zsodetails into CORRESPONDING FIELDS OF TABLE ET_ENTITYSET UP TO 3 ROWS.
```

***The below method is for Filter conditions

```
CALL METHOD /IWBEPECL_MGW_DATA_UTIL=>FILTERING
```

EXPORTING

```
IT_SELECT_OPTIONS = IT_FILTER_SELECT_OPTIONS
```

CHANGING

```
CT_DATA = ET_ENTITYSET.
```

*** The below method is for Skip and Top Functions

```
CALL METHOD /IWBEPECL_MGW_DATA_UTIL=>PAGING
```

EXPORTING

```
IS_PAGING = IS_PAGING
```

CHANGING

```
CT_DATA = ET_ENTITYSET.
```

***The below method is for Ascending and Descending order

```
CALL METHOD /IWBEPECL_MGW_DATA_UTIL=>orderby
```

EXPORTING

```
IT_ORDER = IT_ORDER
```

CHANGING

```
CT_DATA = ET_ENTITYSET.
```

***The below logic is for inline count

```
IF io_tech_request_context->has_inlinecount( ) = abap_true.
```

```
DESCRIBE TABLE et_entityset LINES es_response_context-inlinecount.
```

```
ELSE.
```

```
CLEAR es_response_context-inlinecount.
```

```
ENDIF.
```

\$Filter:-

Filter option is used to limit the results.

The screenshot shows the SAP NetWeaver Gateway Client interface. In the top navigation bar, the 'Execute' button is selected. The 'Request URI' field contains the URL `/sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet?$filter=Vbeln ge '0000001000' and Vbeln le '0000003000'`. The 'HTTP Request' pane is empty. The 'HTTP Response' pane displays the header information and the XML response body. The XML response shows three entries, each representing a SOHEADER record with attributes like Mandt, Vbeln, and Name1.

```

<Header Name="status_code" Value="200"/>
<Header Name="status_reason" Value="OK"/>
<Header Name="server_protocol" Value="HTTP/1.0"/>
<Header Name="set-cookie" Value="sap-usercontext=sap-client=800; path=/"/>
<Header Name="content-type" Value="application/atom+xml;type=feed; charset=utf-8"/>
<Header Name="content-length" Value="2805"/>

```

```

<d:Mandt>800</d:Mandt>
<d:Vbeln>1000</d:Vbeln>
<d:Time>PT10H25M05S</d:Time>
<d:Ernam>buntl</d:Ernam>
<d:Name1>BOLLINGER</d:Name1>
</m:properties>
</content>
</entry>
- <entry>
<d:>http://[REDACTED].COM:8026/sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet
(Mandt='800',Vbeln='1595')</d:>
<title type="text">SOHEADERSet(Mandt='800',Vbeln='1595')</title>
<updated>2021-07-11T13:13:29Z</updated>
<category scheme="http://schemas.microsoft.com/ado/2007/08/dataservices/scheme"
term="ZODATA_SERVICE_SRV.SOHEADER"/>
<link title="SOHEADER" rel="self" href="SOHEADERSet(Mandt='800',Vbeln='1595')"/>
<content type="application/xml">
- <m:properties xmlns:d="http://schemas.microsoft.com/ado/2007/08/dataservices"
xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata">
<d:Mandt>800</d:Mandt>
<d:Vbeln>1595</d:Vbeln>
<d:Time>PT10H25M05S</d:Time>
<d:Ernam>buntl</d:Ernam>
<d:Name1>BOLLINGER</d:Name1>
</m:properties>
</content>
</entry>
- <entry>
<d:>http://[REDACTED].COM:8026/sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet
(Mandt='800',Vbeln='1991')</d:>
<title type="text">SOHEADERSet(Mandt='800',Vbeln='1991')</title>
<updated>2021-07-11T13:13:29Z</updated>
<category scheme="http://schemas.microsoft.com/ado/2007/08/dataservices/scheme"
term="ZODATA_SERVICE_SRV.SOHEADER"/>
<link title="SOHEADER" rel="self" href="SOHEADERSet(Mandt='800',Vbeln='1991')"/>

```

\$Inline count:-

Inline count means it displays the data with count as below

The screenshot shows the SAP NetWeaver Gateway Client interface. In the top navigation bar, there are tabs for Execute, Select, Maintain Service, Service Implementation, EntitySets, and a toolbar with various icons. Below the toolbar, the Request URI is set to `/sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet?$inlineCount=allPages`. The Protocol is set to HTTP. On the right side, there are buttons for Response in Browser, Error Log, HTTP Header, Use as Request, and Data Explorer.

HTTP Request:

| Header Name | Value |
|------------------|---|
| ~status_code | 200 |
| ~status_reason | OK |
| ~server_protocol | HTTP/1.0 |
| set-cookie | sap-usercontext=sap-client=800; path=/ |
| content-type | application/atom+xml;type=feed; charset=utf-8 |
| content-length | 2825 |

HTTP Response:

```

<id>http://sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet</id>
<title type="text">SOHEADERSet(Mandt='800',Vbeln='1000')</title>
<updated>2021-07-11T13:31:10Z</updated>
<category scheme="http://schemas.microsoft.com/ado/2007/08/dataservices/scheme"
          term="ZODATA_SERVICE_SRV.SOHEADER"/>
<link title="SOHEADER" href="SOHEADERSet(Mandt='800',Vbeln='1000')" rel="self"/>
- <content type="application/xml">
  - <m:properties xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata"
    xmlns:d="http://schemas.microsoft.com/ado/2007/08/dataservices">
      <d:Mandt>800</d:Mandt>
      <d:Vbeln>1000</d:Vbeln>
      <d:Time>PT10H25M05S</d:Time>
      <d:Eram>bunti</d:Eram>
      <d:Name1>BOLLINGER</d:Name1>
    </m:properties>
  </content>
</entry>
- <entry>
  <id>http://sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet</id>
  <title type="text">SOHEADERSet(Mandt='800',Vbeln='1595')</title>
  <updated>2021-07-11T13:31:10Z</updated>
  <category scheme="http://schemas.microsoft.com/ado/2007/08/dataservices/scheme"
            term="ZODATA_SERVICE_SRV.SOHEADER"/>
  <link title="SOHEADER" href="SOHEADERSet(Mandt='800',Vbeln='1595')" rel="self"/>
  - <content type="application/xml">
    - <m:properties xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata"
      xmlns:d="http://schemas.microsoft.com/ado/2007/08/dataservices">
        <d:Mandt>800</d:Mandt>
        <d:Vbeln>1595</d:Vbeln>
        <d:Time>PT10H25M05S</d:Time>
        <d:Eram>bunti</d:Eram>
        <d:Name1>BOLLINGER</d:Name1>
      </m:properties>
    </content>
  </entry>

```

\$Top:-

top=1 means first 1 record will be displayed in the data

The screenshot shows the SAP NetWeaver Gateway Client interface. The top navigation bar includes 'Gateway Webui', 'Logout', 'New', 'Select', 'Maintain Service', 'Service Implementation', 'EntitySets', and 'Help'. Below the bar, the title 'SAP NetWeaver Gateway Client' is displayed. The main area has tabs for 'Execute', 'Select', 'Maintain Service', 'Service Implementation', and 'EntitySets'. The 'Execute' tab is selected.

HTTP Method: GET

Request URI: /sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet?\$top=1

Protocol: HTTP / HTTPS

Test Group: Test Case

HTTP Request (Left Panel):

| Header Name | Value |
|------------------|---|
| ~status_code | 200 |
| ~status_reason | OK |
| ~server_protocol | HTTP/1.0 |
| set-cookie | sap-usercontext=sap-client=800; path=/ |
| content-type | application/atom+xml;type=feed; charset=utf-8 |
| content-length | 1279 |

HTTP Response (Right Panel):

| Header Name | Value |
|------------------|---|
| ~status_code | 200 |
| ~status_reason | OK |
| ~server_protocol | HTTP/1.0 |
| set-cookie | sap-usercontext=sap-client=800; path=/ |
| content-type | application/atom+xml;type=feed; charset=utf-8 |
| content-length | 1279 |

Content (Bottom Panel):

```

<?xml version="1.0"?>
- <feed xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata" xmlns="http://www.w3.org/2005/Atom"
  xmlns:base="http://[REDACTED]8026/sap/opu/odata/sap/ZODATA_SERVICE_SRV/"
  xmlns:de="http://schemas.microsoft.com/ado/2007/08/dataservices">
  <id>http://[REDACTED]8026/sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet</id>
  <title type='text'>SOHEADERSet</title>
  <updated>2021-07-11T13:33:18Z</updated>
  - <author>
    <name/>
  </author>
  <link title="SOHEADERSet" href="SOHEADERSet" rel="self"/>
  - <entry>
    <id>http://[REDACTED]8026/sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet
      (Mandt='800',Vbeln='1000')</id>
    <title type='text'>SOHEADERSet(Mandt='800',Vbeln='1000')</title>
    <updated>2021-07-11T13:33:18Z</updated>
    <category scheme="http://schemas.microsoft.com/ado/2007/08/dataservices/scheme"
      term="ZODATA_SERVICE_SRV.SOHEADER"/>
    <link title="SOHEADER" href="SOHEADERSet(Mandt='800',Vbeln='1000')" rel="self"/>
    <content type="application/xml">
      - <m:properties xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata"
        xmlns:d="http://schemas.microsoft.com/ado/2007/08/dataservices">
        <d:Mandt>800</d:Mandt>
        <d:Vbeln>1000</d:Vbeln>
        <d:Time>PT10H25M05S</d:Time>
        <d:Ernam>bunti</d:Ernam>
        <d:Name1>BOLLINGER</d:Name1>
      </m:properties>
    </content>
  </entry>
</feed>

```

\$Skip:-

Skip1 means it skips one record while displaying.

The screenshot shows the SAP NetWeaver Gateway Client interface. The top navigation bar includes 'Gateway Client', 'Edit', 'Goto', 'Metadata', 'System', and 'Help'. Below the header, the title 'SAP NetWeaver Gateway Client' is displayed, along with tabs for 'Execute', 'Select', 'Maintain Service', 'Service Implementation', and 'EntitySets'.

The 'HTTP Method' dropdown is set to 'GET'. The 'Request URI' field contains the URL: `/sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet?$inlinecount=allpages&$skip=2`. The 'Protocol' dropdown is set to 'HTTP'.

The 'HTTP Request' section shows the selected URI. The 'HTTP Response' section displays the following header information:

| Header Name | Value |
|-------------------------------|---|
| <code>~status_code</code> | 200 |
| <code>~status_reason</code> | OK |
| <code>~server_protocol</code> | HTTP/1.0 |
| <code>set-cookie</code> | sap-usercontext=sap-client=800; path=/ |
| <code>content-type</code> | application/atom+xml;type=feed; charset=utf-8 |
| <code>content-length</code> | 1299 |

The main content area shows the XML response body:

```

<?xml version="1.0"?>
<feed xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata" xmlns="http://www.w3.org/2005/Atom"
      xml:base="http://[REDACTED]:8026/sap/opu/odata/sap/ZODATA_SERVICE_SRV/"
      xmlns:d="http://schemas.microsoft.com/ado/2007/08/dataservices">
  <id>http://[REDACTED]:8026/sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet</id>
  <title type="text">SOHEADERSet</title>
  <updated>2021-07-11T13:32:12Z</updated>
  - <author>
    <name/>
  </author>
  <link title="SOHEADERSet" href="SOHEADERSet" rel="self"/>
  <m:count>1</m:count>
  - <entry>
    <id>http://[REDACTED]:8026/sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet(Mandt='800',Vbeln='1991')</id>
    <title type="text">SOHEADERSet(Mandt='800',Vbeln='1991')</title>
    <updated>2021-07-11T13:32:12Z</updated>
    <category scheme="http://schemas.microsoft.com/ado/2007/08/dataservices/scheme"
              term="ZODATA_SERVICE_SRV.SOHEADER"/>
    <link title="SOHEADER" href="SOHEADERSet(Mandt='800',Vbeln='1991')" rel="self"/>
    - <content type="application/xml">
      <d:Properties xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata"
                    xmlns:d="http://schemas.microsoft.com/ado/2007/08/dataservices">
        <d:Mandt>800</d:Mandt>
        <d:Vbeln>1991</d:Vbeln>
        <d:Time>PT1H25M0S</d:Time>
        <d:Ernam>bunti</d:Ernam>
        <d:Name1>BOLLINGER</d:Name1>
      </d:Properties>
    </content>
  </entry>
</feed>

```

\$Skip and Top:-

Top 2 means it will display the first two records and skip 1 means only one record skip in the data.

The screenshot shows the SAP NetWeaver Gateway Client interface. The top navigation bar includes options like Gateway Client, Edit, Goto, Metadata, System, Help, Execute, Select, Maintain Service, Service Implementation, EntitySets, and a toolbar with various icons.

The main area has tabs for HTTP Method (GET selected), Request URI ([/sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet?\\$top=2&\\$skip=1](/sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet?$top=2&$skip=1)), Protocol (HTTP selected), and Test Group/Test Case.

The left panel displays the **HTTP Request** section, which is currently empty. The right panel displays the **HTTP Response** section, showing the following header information:

| Header Name | Value |
|---------------------------|---|
| ~status_code | 200 |
| ~status_reason | OK |
| ~server_protocol | HTTP/1.0 |
| set-cookie | sap-usercontext=sap-client=800; path=/ |
| content-type | application/atom+xml;type=feed; charset=utf-8 |
| content-length | 2042 |
| dataserviceversion | 2.0 |
| sap-metadata-last-updated | Sat, 10 Jul 2021 11:40:56 GMT |
| cache-control | no-store, no-cache |
| ~remote_addr | NONE |
| ~url_scheme_explain | NONE |

The bottom section shows the XML representation of the response, which includes two entries for SOHEADERSet:

```

<category scheme="http://schemas.microsoft.com/ado/2007/08/dataservices/scheme"
          term="ZODATA_SERVICE_SRV.SOHEADER"/>
<link title="SOHEADER" rel="self" href="SOHEADERSet(Mandt='800',Vbeln='1595')"/>
<content type="application/xml">
  - <m:properties xmlns:d="http://schemas.microsoft.com/ado/2007/08/dataservices"
    xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata">
    <d:Mandt>800</d:Mandt>
    <d:Vbeln>1595</d:Vbeln>
    <d:Time>PT10H25M05S</d:Time>
    <d:Ernam>bunti</d:Ernam>
    <d:Name1>BOLLINGER</d:Name1>
  </m:properties>
</content>
</entry>
<entry id="http://sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet(Mandt='800',Vbeln='1991')">
  <title type="text">SOHEADERSet(Mandt='800',Vbeln='1991')</title>
  <updated>2021-07-15T12:36:54Z</updated>
  <category scheme="http://schemas.microsoft.com/ado/2007/08/dataservices/scheme"
            term="ZODATA_SERVICE_SRV.SOHEADER"/>
  <link title="SOHEADER" rel="self" href="SOHEADERSet(Mandt='800',Vbeln='1991')"/>
  <content type="application/xml">
    - <m:properties xmlns:d="http://schemas.microsoft.com/ado/2007/08/dataservices"
      xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata">
      <d:Mandt>800</d:Mandt>
      <d:Vbeln>1991</d:Vbeln>
      <d:Time>PT10H25M05S</d:Time>
      <d:Ernam>bunti</d:Ernam>
    </m:properties>
  </content>
</entry>

```

\$Count:-

It gets all the records count of the data

The screenshot shows the SAP NetWeaver Gateway Client interface. The top navigation bar includes 'Execute', 'Select', 'Maintain Service', 'Service Implementation', and 'EntitySets'. Below this, the 'HTTP Method' dropdown is set to 'GET', and the 'Request URI' field contains '/sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet/\$count'. The 'Protocol' dropdown is set to 'HTTP'. The main area is divided into 'HTTP Request' and 'HTTP Response' sections. The 'HTTP Response' section displays the following header information:

| Header Name | Value |
|------------------|--|
| ~status_code | 200 |
| ~status_reason | OK |
| ~server_protocol | HTTP/1.0 |
| set-cookie | sap-usercontext=sap-client=800; path=/ |
| content-type | text/plain; charset=utf-8 |
| content-length | 1 |

\$orderby:-

Displays data either Ascending or Descending order.

Descending Order:-

SAP NetWeaver Gateway Client

HTTP Method: GET Request URI: /sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet?\$orderby= Vbeln desc Protocol: HTTP

Reuse HTTP Connection (e.g. necessary for Soft State)

Add URI Option

Test Group Test Case

HTTP Request

Header Name Value

HTTP Response

| Header Name | Value |
|------------------|---|
| ~status_code | 200 |
| ~status_reason | OK |
| ~server_protocol | HTTP/1.0 |
| set-cookie | sap-usercontext=sap-client=800; path=/ |
| content-type | application/atom+xml;type=feed; charset=utf-8 |
| content-length | 2805 |

```

<title type='text'>SOHEADERSet(Mandt='800',Vbeln='1991')</title>
<updated>2021-07-11T13:09:39Z</updated>
<category scheme="http://schemas.microsoft.com/ado/2007/08/dataservices/scheme">
  term="ZODATA_SERVICE_SRV.SOHEADER"/>
- <link title="SOHEADER" rel="self" href="SOHEADERSet(Mandt='800',Vbeln='1991')"/>
- <content type="application/xml">
  - <m:properties xmlns:d="http://schemas.microsoft.com/ado/2007/08/dataservices" xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata">
    <d:Mandt>800</d:Mandt>
    <d:Vbeln>1991</d:Vbeln>
    <d:Time>PT10H25M05S</d:Time>
    <d:Eram>bunti</d:Eram>
    <d:Name1>BOLLINGER</d:Name1>
  </m:properties>
  </content>
</entry>
- <entry id="http://[REDACTED]6/sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet(Mandt='800',Vbeln='1595')">
  <title type='text'>SOHEADERSet(Mandt='800',Vbeln='1595')</title>
  <updated>2021-07-11T13:09:39Z</updated>
  <category scheme="http://schemas.microsoft.com/ado/2007/08/dataservices/scheme">
    term="ZODATA_SERVICE_SRV.SOHEADER"/>
  - <link title="SOHEADER" rel="self" href="SOHEADERSet(Mandt='800',Vbeln='1595')"/>
  - <content type="application/xml">
    - <m:properties xmlns:d="http://schemas.microsoft.com/ado/2007/08/dataservices" xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata">
      <d:Mandt>800</d:Mandt>
      <d:Vbeln>1595</d:Vbeln>
      <d:Time>PT10H25M05S</d:Time>
      <d:Eram>bunti</d:Eram>
      <d:Name1>BOLLINGER</d:Name1>
    </m:properties>
    </content>
  </entry>

```

Ascending order:-

The screenshot shows the SAP NetWeaver Gateway Client interface. The top navigation bar includes links for Gateway Client, Log, Metadata, System, and Help. Below the navigation is a toolbar with icons for Execute, Select, Maintain Service, Service Implementation, EntitySets, and a search field.

The main area has tabs for HTTP Request and HTTP Response. The Request URI is set to `/sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet?$orderby=Vbeln asc`. The Response tab displays the following header information:

| Header Name | Value |
|-------------------------------|---|
| <code>~status_code</code> | 200 |
| <code>~status_reason</code> | OK |
| <code>~server_protocol</code> | HTTP/1.0 |
| <code>set-cookie</code> | sap-usercontext=sap-client=800; path=/ |
| <code>content-type</code> | application/atom+xml;type=feed; charset=utf-8 |
| <code>content-length</code> | 2805 |

The Response body contains XML data representing two entries from the SOHEADERSet:

```

<link title="SOHEADERSet" rel="self" href="SOHEADERSet"/>
- <entry>
  - <id>http://[REDACTED]/sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet(Mandt='800',Vbeln='1000')</id>
  <title type="text">SOHEADERSet(Mandt='800',Vbeln='1000')</title>
  <updated>2021-07-11T13:10:16Z</updated>
  <category scheme="http://schemas.microsoft.com/ado/2007/08/dataservices/scheme" term="ZODATA_SERVICE_SRV.SOHEADER"/>
  <link title="SOHEADER" rel="self" href="SOHEADERSet(Mandt='800',Vbeln='1000')"/>
  <content type="application/xml">
    - <m:properties xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices" xmlns:d="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata">
      <d:Mandt>800</d:Mandt>
      <d:Vbeln>1000</d:Vbeln>
      <d:Time>PT10H25M05S</d:Time>
      <d:Ernam>bunti</d:Ernam>
      <d:Name1>BOLLINGER</d:Name1>
    </m:properties>
  </content>
</entry>
- <entry>
  - <id>http://[REDACTED]/sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet(Mandt='800',Vbeln='1595')</id>
  <title type="text">SOHEADERSet(Mandt='800',Vbeln='1595')</title>
  <updated>2021-07-11T13:10:16Z</updated>
  <category scheme="http://schemas.microsoft.com/ado/2007/08/dataservices/scheme" term="ZODATA_SERVICE_SRV.SOHEADER"/>
  <link title="SOHEADER" rel="self" href="SOHEADERSet(Mandt='800',Vbeln='1595')"/>
  <content type="application/xml">
    - <m:properties xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices" xmlns:d="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata">
      <d:Mandt>800</d:Mandt>
      <d:Vbeln>1595</d:Vbeln>
      <d:Time>PT10H25M05S</d:Time>
      <d:Ernam>bunti</d:Ernam>
    </m:properties>
  </content>
</entry>

```

5) Add Success/ Error Message

Success/Error messages on ODATA Header response.

SOURCE CODE:

```

DATA lo_message_container TYPE REF TO /iwbp/if_message_container.

lo_message_container = me->mo_context->get_message_container( ).
```

```

"only to display message text.

CALL METHOD lo_message_container->add_message_text_only
EXPORTING
iv_msg_type = 'S'
iv_msg_text = 'SUCCESS'
iv_add_to_response_header = abap_true.

"To display msg id in combination with message text.

lo_message_container = me->mo_context->get_message_container( ).
lo_message_container->add_message(
EXPORTING
iv_msg_type = 'S'
iv_msg_id = 'ZMSG1'
iv_msg_number = '1'
iv_msg_v1 = 'Success'
iv_is_leading_message = abap_true
iv_add_to_response_header = abap_true
).

"To display msg id in combination with message text by using add_message_from_bapi "
method SOHEADERSET_UPDATE_ENTITY.

DATA(lt_headers) = /iwbepl/if_mgw_conv_srv_runtime~get_dp_facade( )->get_request_header( ).
DATA(lv_request_uri) = lt_headers[ name = '~request_uri' ]-value.
DATA(lv_context_path) = match( val = lv_request_uri regex = `/(.+)/\$/` ).
DATA(lv_message_target) = lv_context_path && |/Field1|. "/MyEntity('Key')/Field1

DATA lt_msg_types TYPE TABLE OF char1.

io_data_provider->read_entry_data( IMPORTING es_data = ls_request_input_data ).

** Update fields of table Zsodetails

```

```

UPDATE zsodetails SET
    time      = ls_request_input_data-time
    ernam     = ls_request_input_data-ernam
    name1    = ls_request_input_data-name1
    WHERE Vbeln = lv_Vbeln.

IF sy-subrc = 0.
    er_entity = ls_request_input_data. "Fill exporting parameter ER_ENTITY
*    er_entity-show_warning = 'X'.
*    er_entity-show_Info = 'X'.
    er_entity-show_success = 'X'.
*    er_entity-show_error = 'X'.
ENDIF.

*** determine which messages to show

IF er_entity-show_warning = abap_true.
    APPEND /iwbp/if_message_container->gcs_message_type-warning TO lt_msg_types.
ENDIF.
IF er_entity-show_info EQ abap_true.
    APPEND /iwbp/if_message_container->gcs_message_type-info TO lt_msg_types.
ENDIF.
IF er_entity-show_success EQ abap_true.
    APPEND /iwbp/if_message_container->gcs_message_type-success TO lt_msg_types.
ENDIF.
IF er_entity-show_error EQ abap_true.
    APPEND /iwbp/if_message_container->gcs_message_type-error TO lt_msg_types.
ENDIF.

DATA lt_return TYPE STANDARD TABLE OF bapiret2.
LOOP AT lt_msg_types ASSIGNING FIELD-SYMBOL(<fs_msg_type>).

" create bapi message
    APPEND INITIAL LINE TO lt_return ASSIGNING FIELD-SYMBOL(<fs_return>).

```

```

MESSAGE ID '00' TYPE <fs_msg_type> NUMBER 001
  INTO <fs_return>-message
*   WITH |message { sy-tabix } type { <fs_msg_type> } value { er_entity-Vbeln }|.
   WITH |Error { <fs_msg_type> } value { er_entity-Vbeln }|.

CALL FUNCTION 'BALW_BAPIRETURN_GET2'
  EXPORTING
    type      = sy-msgty
    cl        = sy-msgid
    number    = sy-msgno
    par1      = sy-msgv1
  IMPORTING
    return    = <fs_return>.

*--- only link Errors and Warning to the target field

<fs_return>-field=COND#(WHEN<fs_msg_type>/=iwbep/if_message_container=>gcs_message_type-warning THEN
  lv_message_target
  WHEN <fs_msg_type> = /iwbep/if_message_container=>gcs_message_type-error THEN
  lv_message_target ELSE || ).

ENDLOOP.

LOOP AT lt_return ASSIGNING <fs_return>.
  " add message from bapi structure
  mo_context->get_message_container( )->add_message_from_bapi(
  EXPORTING is_bapi_message = <fs_return>
    iv_entity_type = iv_entity_set_name
    it_key_tab = VALUE /iwbep/t_mgw_name_value_pair( ( name = 'Vbeln' value = er_entity-Vbeln )
    iv_add_to_response_header = abap_true
    iv_message_target = CONV string( <fs_return>-field ) ).

ENDLOOP.
  MODIFY zsodetails FROM er_entity.
endmethod.

```

Displaying messages by using `add_messages` method.

Success:-

The screenshot shows the SAP NetWeaver Gateway Client interface. The top navigation bar includes 'Execute', 'Select', 'Maintain Service', 'Service Implementation', and 'EntitySets'. The main area has tabs for 'HTTP Request' and 'HTTP Response'.

HTTP Request:

- Method: POST
- Request URL: /sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet
- Protocol: HTTP

HTTP Response:

- Status Code: 201
- Status Reason: Created
- Server Protocol: HTTP/1.0
- Content-Type: application/atom+xml;type=entry; charset=utf-8
- Content-Length: 919
- Location: http://[REDACTED]/sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet(Mandt='800',Vbeln=[REDACTED])
- SAP-Message: <notification xmlns:sap="http://www.sap.com/Protocols/SAPData"><code>ZMSG1/001</code><message>SUCCE[REDACTED]
- Request ID: 6451063D7AE31EDB8881B093518900C9

Response Body (XML):

```

1  <?xml version="1.0" encoding="utf-8"?>
2  <entry xml:base="http://[REDACTED]:8026/sap/opu/odata/sap/ZODATA_SERVICE_SRV/">
3    <id href="http://[REDACTED]:8026/sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet(Mandt='800',Vbeln='5995')"/>
4    <title type="text">SOHEADERSet (Mandt='800',Vbeln='5995')</title>
5    <updated>2021-07-10T14:45:24Z</updated>
6    <category term="ZODATA_SERVICE_SRV.SOHEADER" scheme="http://schemas.microsoft.com/ado/2007/08/dataservices/scheme">
7      <link href="SOHEADERSet(Mandt='800',Vbeln='1000')"/>
8      <content type="application/xml">
9        <m:properties>
10         <d:Mandt>800</d:Mandt>
11         <d:Vbeln>5995</d:Vbeln>
12         <d:Time>PT10H25M05S</d:Time>
13         <d:Ernam>bunti</d:Ernam>
14         <d:Name1>BOLLINGER</d:Name1>
15       </m:properties>
16     </content>
17   </entry>

```

Displaying messages by using `add_message_from_bapi` Method.

Success:-

The screenshot shows the SAP NetWeaver Gateway Client interface. The top navigation bar includes 'Gateway Client', 'Edit', 'Goto', 'Metadata', 'System', and 'Help'. Below the navigation is a toolbar with icons for execute, select, maintain service, service implementation, and entity sets.

The main area is titled 'SAP NetWeaver Gateway Client' and contains several tabs: 'Execute', 'Select', 'Maintain Service', 'Service Implementation', and 'EntitySets'. The 'Execute' tab is active.

Under the 'Execute' tab, there are sections for 'HTTP Method' (radio buttons for GET, POST, PUT, PATCH, MERGE, DELETE), 'Request URI' (set to '/sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet(Mandt='800',Vbeln='0000001000')'), and 'Protocol' (radio buttons for HTTP and HTTPS). There is also a checkbox for 'Reuse HTTP Connection (e.g. necessary for Soft State)' and a button to 'Add URI Option'.

The 'HTTP Request' section shows a table of headers. One row is selected, highlighting 'Content-Type' with the value 'application/atom+xml;type=entry; charset=utf-8'.

The 'HTTP Response' section shows a table of response headers and a 'sap-message' entry. The 'sap-message' entry contains XML indicating success: <notification xmlns:sap="http://www.sap.com/Protocols/SAPData"><code>00/001</code><message>Success t</message></notification>. The 'RequestID' is listed as 6451063D7AE31EDBB9F219DA907C00C9.

At the bottom, there are two code snippets. The left snippet is the XML request body:

```
1: <?xml version="1.0" encoding="utf-8"?>
2: <entry xml:base="http://[REDACTED]/sap/opu/odata/>
3: <id>http://[REDACTED]/sap/opu/odata/</id>
4: <title type="text">SOHEADERSet(Mandt='800',Vbeln='1000')</title>
5: <updated>2021-07-18T06:24:02Z</updated>
6: <category term="ZODATA_SERVICE_SRV.SOHEADER" scheme="http://[REDACTED]></category>
7: <link href="SOHEADERSet(Mandt='800',Vbeln='1000')"/>
8: <content type="application/xml">
9:   <m:properties>
10:    <d:Mandt>800</d:Mandt>
11:    <d:Vbeln>1000</d:Vbeln>
12:    <d:Time>PT10H25M05S</d:Time>
13:    <d:LastChangeDate>2021-07-18T06:24:02Z</d:LastChangeDate>
14:  </m:properties>
15: </content>
16: </entry>
```

The right snippet is the XML response body:

```
<RESPONSE_BODY>
<notification xmlns:sap="http://www.sap.com/Protocols/SAPData"><code>00/001</code><message>Success t</message></notification>
```

Warning:-

SAP NetWeaver Gateway Client

HTTP Method: GET POST PUT PATCH MERGE DELETE

Request URI: /sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet(Mandt='800';Vbeln='0000001000')

Protocol: HTTP HTTPS

HTTP Request:

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

HTTP Response:

| Header Name | Value |
|--------------------|--|
| ~status_code | 204 |
| ~status_reason | No Content |
| ~server_protocol | HTTP/1.0 |
| content-length | 0 |
| dataserviceversion | 2.0 |
| sap-message | <notification xmlns:sap="http://www.sap.com/Protocols/SAPData"><code>00/001</code><message>Warning t |
| RequestID | 6451063D7AE31EDB889F23ADF64F0C0C9 |

```

1  <?xml version="1.0" encoding="utf-8"?>
2  <entry xml:base="http://[REDACTED]/sap/opu/od
3  <id>http://[REDACTED]/sap/opu/od
4  <title type="text">SOHEADERSet (Mandt='800',Vbeln='1000')
5  <updated>2021-07-18T06:31:33Z</updated>
6  <category term="ZODATA_SERVICE_SRV.SOHEADER" sc
7  <link href="SOHEADERSet (Mandt='800',Vbeln='1000'
8  <content type="application/xml">
9    <m:properties>
10   <d:Mandt>800</d:Mandt>
11   <d:Vbeln>1000</d:Vbeln>
12   <d:Time>PT10H25M05S</d:Time>

```

Error:-

The screenshot shows the SAP NetWeaver Gateway Client interface. The top navigation bar includes 'Execute', 'Select', 'Maintain Service', 'Service Implementation', and 'EntitySets'. The 'HTTP Method' dropdown is set to 'PUT'. The 'Request URI' field contains '[sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet\(Mandt='800',Vbeln='0000001000'\)](http://sap/opu/odata/sap/ZODATA_SERVICE_SRV/SOHEADERSet(Mandt='800',Vbeln='0000001000'))'. The 'Protocol' dropdown is set to 'HTTP'. The 'HTTP Request' section shows a header entry for 'Content-Type: application/atom+xml;type=entry; charset=utf-8'. The 'HTTP Response' section displays the following headers:

| Header Name | Value |
|--------------------|--|
| ~status_code | 204 |
| ~status_reason | No Content |
| ~server_protocol | HTTP/1.0 |
| content-length | 0 |
| dataserviceversion | 2.0 |
| sap-message | <notification xmlns:sap="http://www.sap.com/Protocols/SAPData"><code>00/001</code><message>Error E v</message> |
| ~remote_addr | |
| ~uri_scheme_expa | NONE |
| RequestID | 6451063D7AE31EDBB9F7E6321E4A40C9 |

The bottom left pane shows the XML response body:

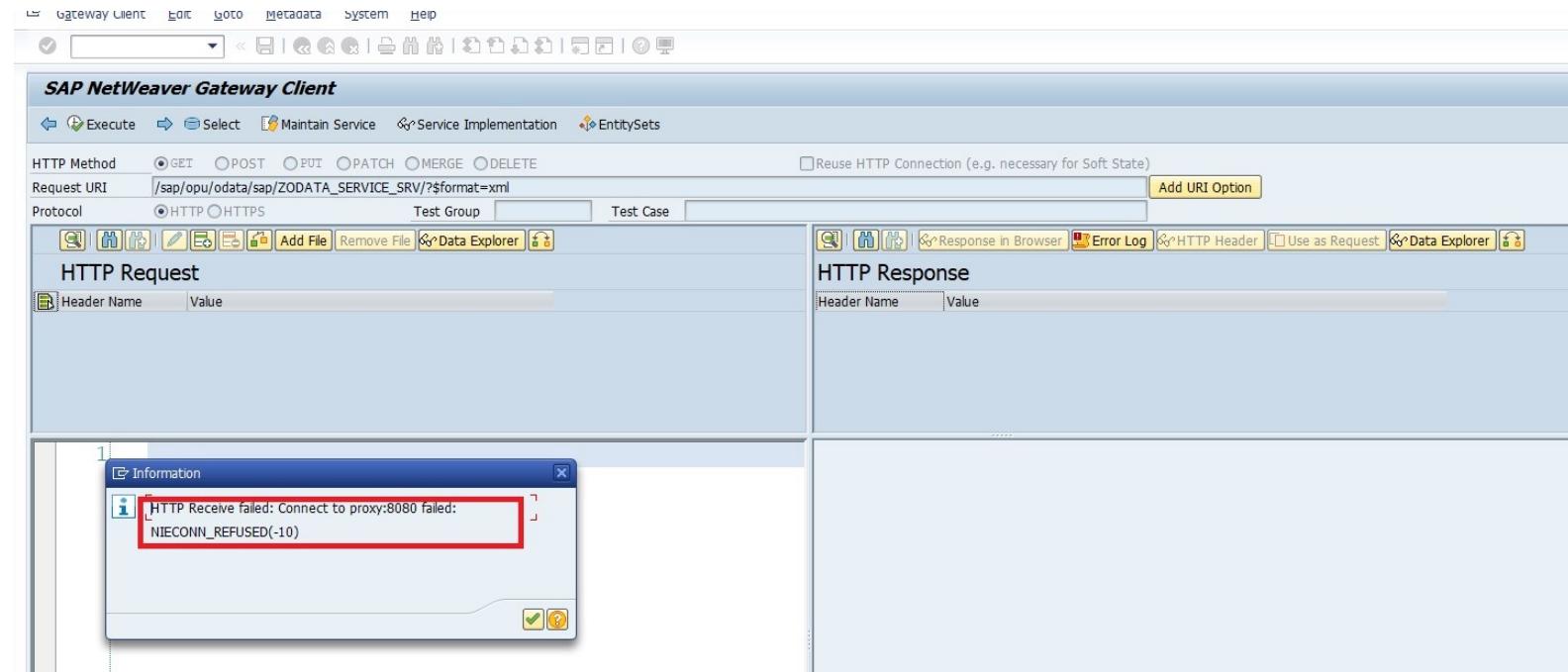
```

1  <?xml version="1.0" encoding="utf-8"?>
2  <entry xml:base="http://[REDACTED]/sap/opu/od
3  <id>http://[REDACTED]/sap/opu/od
4  <title type="text">SOHEADERSet (Mandt='800',Vbeln='0000001000')
5  <updated>2021-07-18T11:54:53Z</updated>
6  <category term="ZODATA_SERVICE_SRV.SOHEADER" sc
7  <link href="SOHEADERSET (Mandt='800',Vbeln='1000'
8  <content type="application/xml">
9    <m:properties>
10   <d:Mandt>800</d:Mandt>
11   <d:Vbeln>1000</d:Vbeln>
12   <d:Time>PT10H25M0S</d:Time>
13   <d:Frmnam>narrar</d:Frmnam>

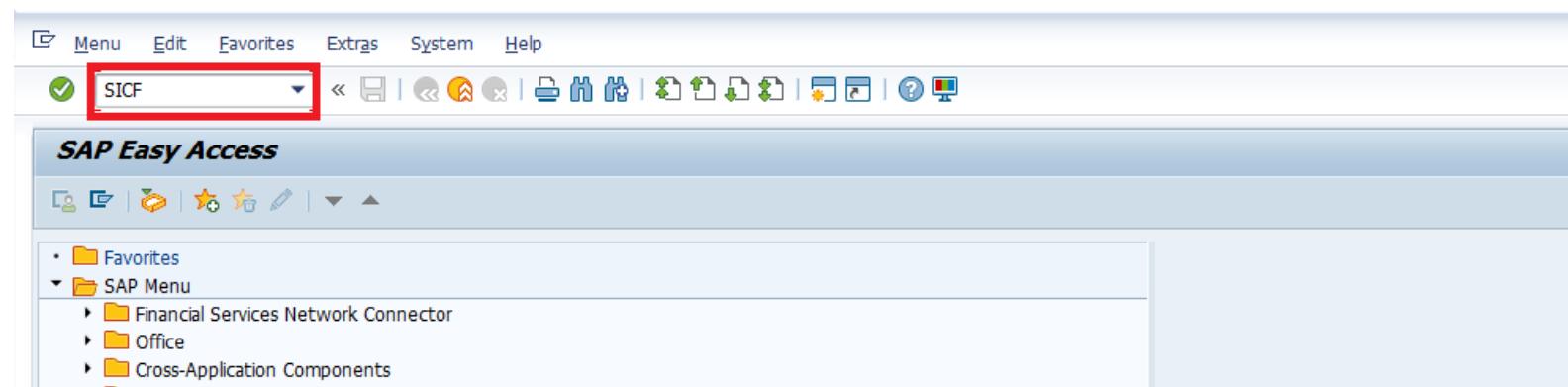
```

Note:- If the below error is encountered while executing the ODATA service please follow the below steps to resolve.

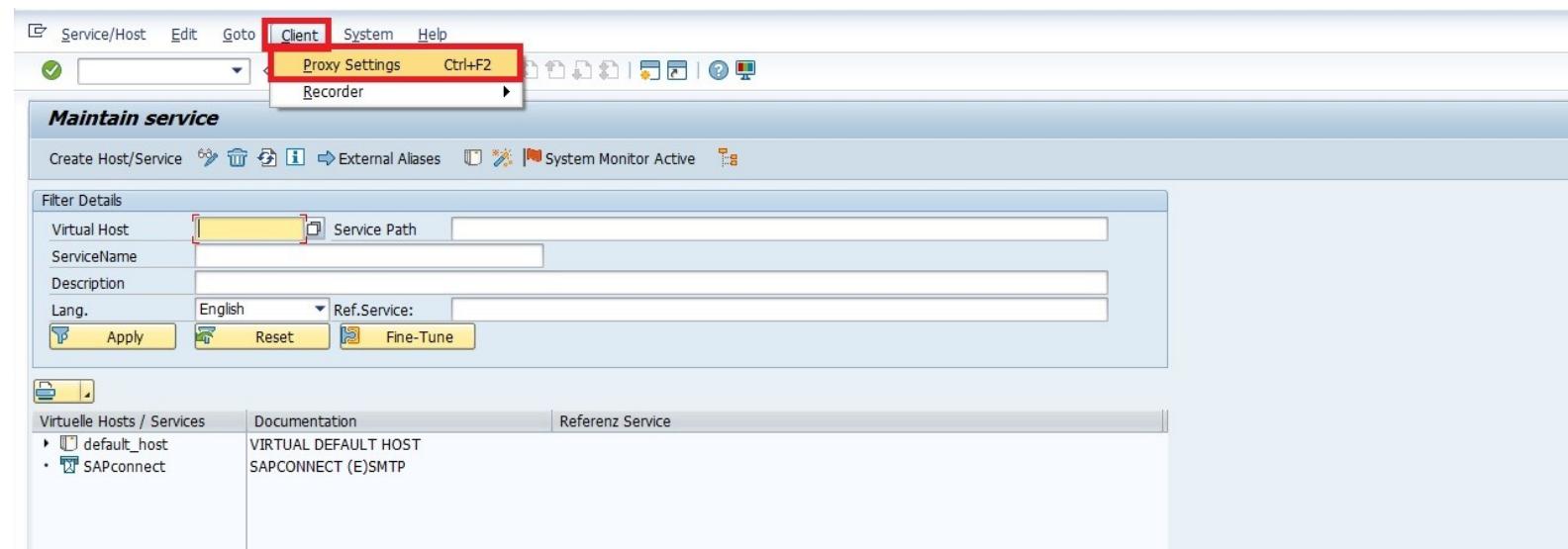
6) Configuration settings to resolve HTTP proxy error



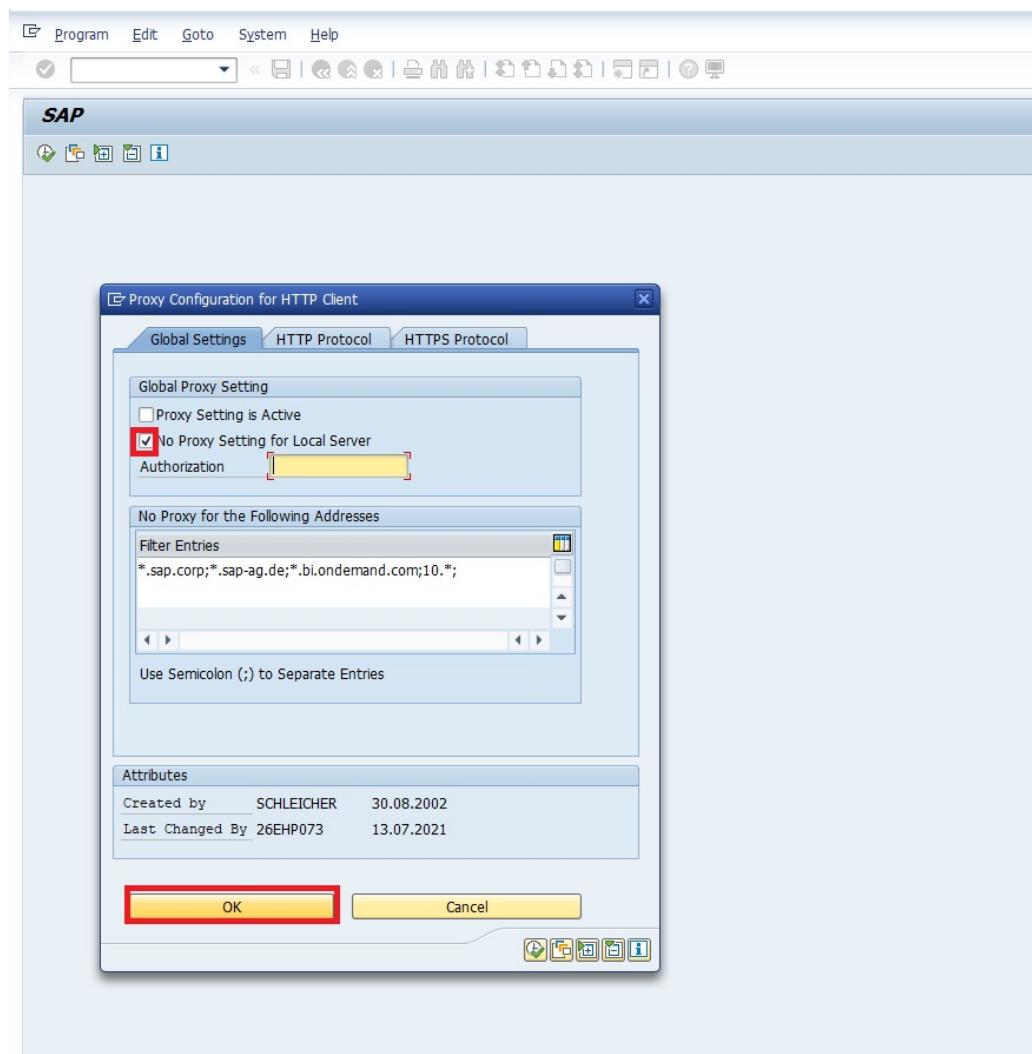
Go to transaction SICF (HTTP service Hierarchy maintenance)



Go to client -> Proxy settings



Please uncheck “Proxy setting is active” and it will resolve the issue.



Conclusion

You have just created a basic OData service and have done simple operations and as well as mapping messages on the OData response header. I hope you enjoyed it.

Alert Moderator

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SAP BTP, ABAP environment

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3 Comments



Dominik Eira Elias

July 23, 2021 at 2:02 pm

Hi Srinivas,

please be aware that this is not possible in SAP BTP ABAP Environment as transaction SEGW is not available. The recommended way to build services is the ABAP RESTful Programming Model: <https://help.sap.com/viewer/923180ddb98240829d935862025004d6/Cloud/en-US/289477a81eec4d4e84c0302fb6835035.html>

You can read more about the messages concept in RAP here: <https://help.sap.com/viewer/923180ddb98240829d935862025004d6/Cloud/en-US/ac74189b5cae49c1b091f04393bac069.html>

However, when building SEGW project (in OnPremise) it is recommended to use the ABAP Programming Model for SAP Fiori. More information about messages in this programming model can be found here:

<https://help.sap.com/viewer/cc0c305d2fab47bd808adcad3ca7ee9d/1809.000/en-US/e82b394740b047ff8b86bb628f7a1ef2.html?q=messages>

When building SEGW projects using SEGW it is recommended to use Reference Data Source (RDS) over custom built projects:

https://help.sap.com/doc/saphelp_nw75/7.5.5/en-US/d0/d28697a5804135afa8d188c91dae83/content.htm?no_cache=true

In both frameworks, the involved frameworks take over the responsibility to map and return messages accordingly.

Best regards,
Dominik

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Srinivas Narra | Blog Post Author

July 26, 2021 at 6:52 am

Thank you for your valuable corrections and suggestions that enused.

Like 0 | Share



Jelena Perfiljeva

July 29, 2021 at 5:07 pm

Hi Srinivas,

As Dominik pointed out, there are other development models available these days. This blog describes a code-based OData development approach that would be valid for older releases, like 7.31.

There have been many blogs on this subject posted around 2012-2013 when this was the most common approach to development. Here is just one example: <https://blogs.sap.com/2013/06/20/how-to-develop-query-options-for-an-odata-service-using-code-based-implementation/>

Since there is already a lot of material on this, I'm not sure if much can be added to the conversation. But if you chose to write about that type of development then you could save the explanation of the basics like setting up a SEGW project by including a link to one of many blogs that explain the same steps, and just focus on a specific aspect in more detail. That would make the blog easier to read and more concise.

Edit: just saw a new blog with an availability matrix for all the different GW development models. Take a look:

<https://blogs.sap.com/2021/07/12/compact-feature-availability-matrix-of-abap-programming-models/>

Thank you!

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