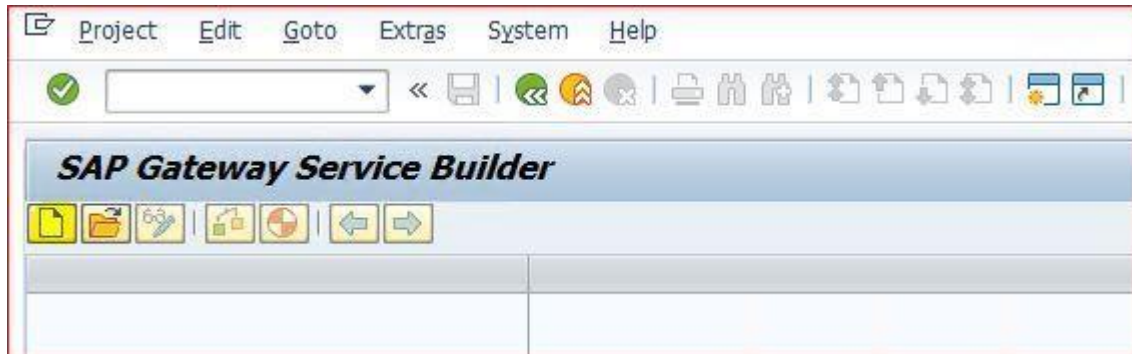
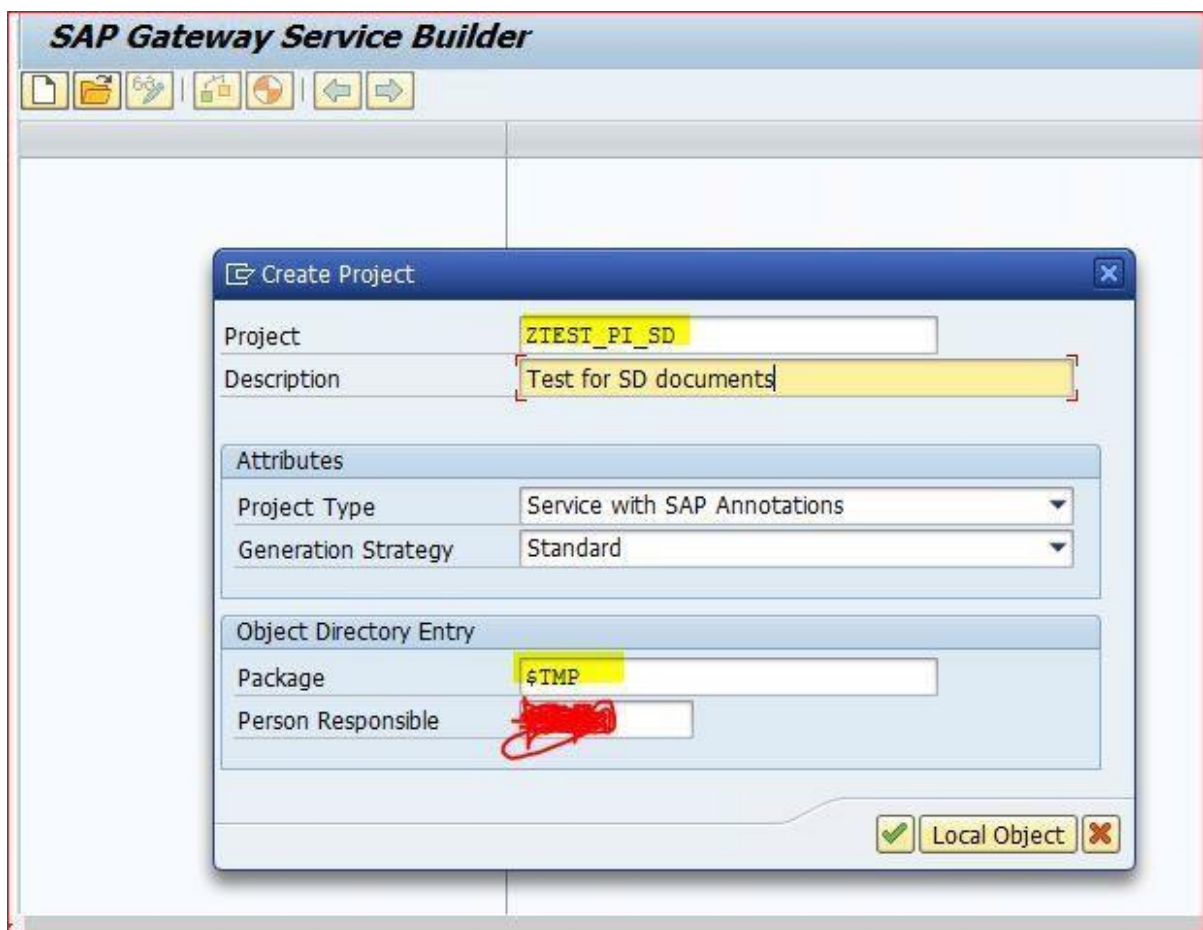


A Step by Step process to create OData services in SAP / SAP HANA system

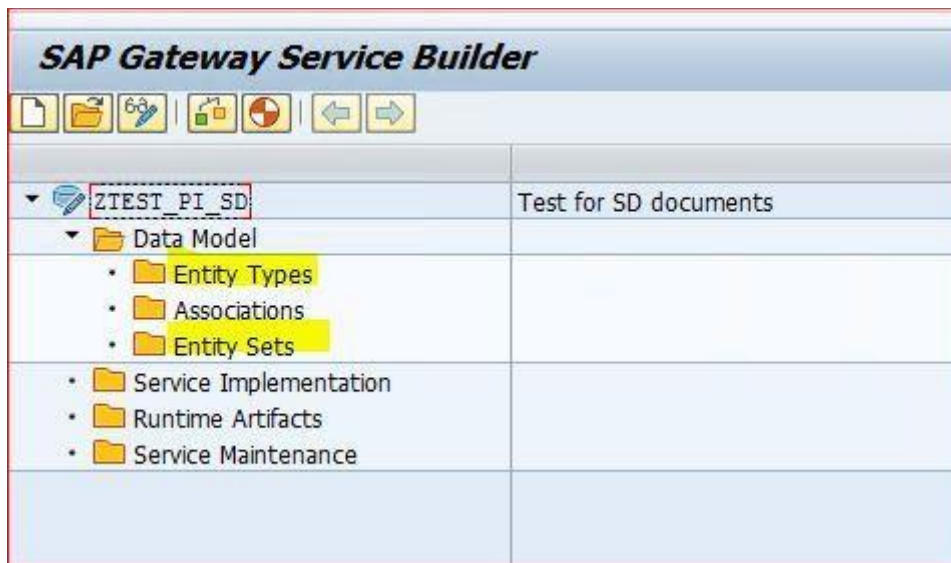
Step 1. Go to transaction code - SEGW .



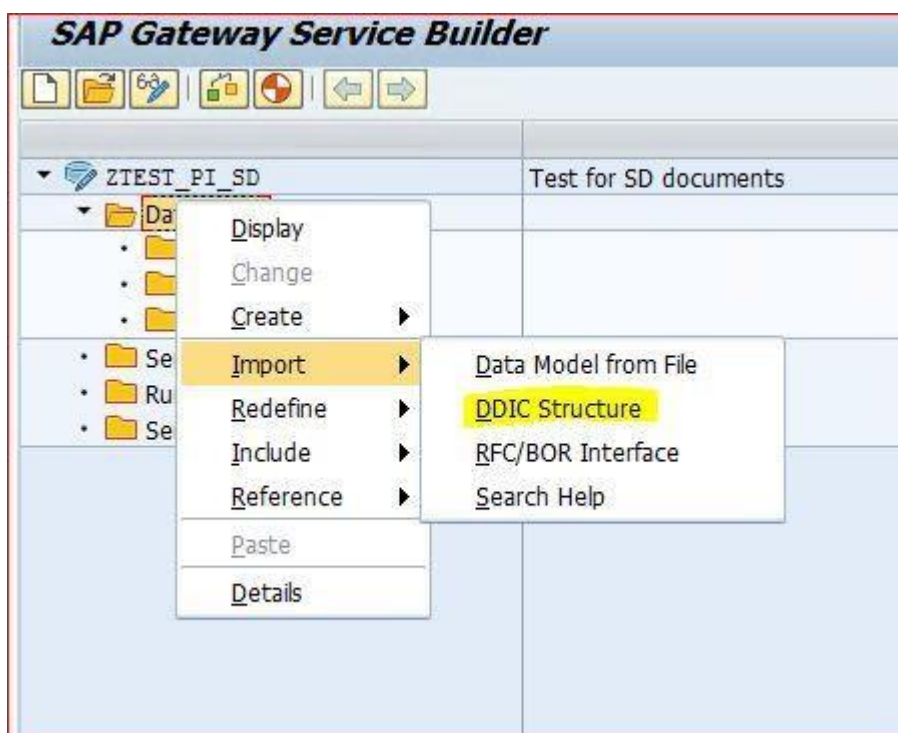
Click on Icon Create. A pop window will appear , Fill the details as per below mention in screen shot and click on check icon or enter.



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 and click on check box entity set. fill ABAP structure as VBAK and click on next

Wizard Step 1 of 3: Import from DDIC Structure

Create an Entity Type or Complex Type

Name:

☒ Entity Type ☐ Complex Type

Import from ABAP Structure

ABAP Structure:

☒ Create Default Entity Set

Activate Windows
Go to System settings to activate Windows.

Next Cancel

Now you will get the pop up screen with VBAK table fields name. Select fields for your structure and click on next.

Wizard Step 2 of 3: Import from DDIC Structure

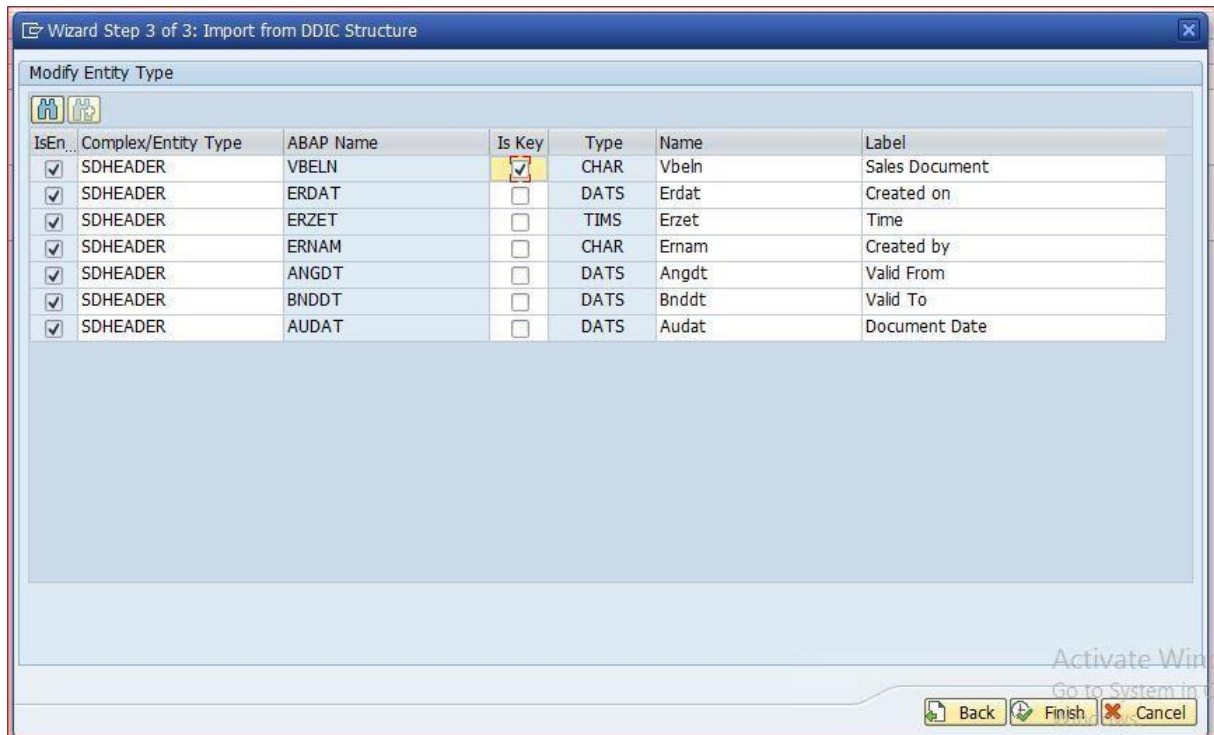
Select Parameter(s)

Data Source Parameter	Assign Structure	Description	Type	Length
<input checked="" type="checkbox"/> VBAK	<input type="checkbox"/>		VBAK	
• <input type="checkbox"/> MANDT	<input type="checkbox"/>	Client	CLNT	3
• <input checked="" type="checkbox"/> VBELN	<input type="checkbox"/>	Sales Document	CHAR	10
• <input checked="" type="checkbox"/> ERDAT	<input type="checkbox"/>	Created on	DATS	8
• <input checked="" type="checkbox"/> ERZET	<input type="checkbox"/>	Time	TIMS	6
• <input checked="" type="checkbox"/> ERNAM	<input type="checkbox"/>	Created by	CHAR	12
• <input checked="" type="checkbox"/> ANGDT	<input type="checkbox"/>	Valid From	DATS	8
• <input checked="" type="checkbox"/> BNDDT	<input type="checkbox"/>	Valid To	DATS	8
• <input checked="" type="checkbox"/> AUDAT	<input type="checkbox"/>	Document Date	DATS	8
• <input type="checkbox"/> VBTYP	<input type="checkbox"/>	Document Cat.	CHAR	4
• <input type="checkbox"/> TRVOG	<input type="checkbox"/>	Transact.Group	CHAR	1
• <input type="checkbox"/> AUART	<input type="checkbox"/>	Sales Doc. Type	CHAR	4
• <input type="checkbox"/> AUGRU	<input type="checkbox"/>	Order Reason	CHAR	3
• <input type="checkbox"/> GWLDT	<input type="checkbox"/>	Begin guarantee	DATS	8
• <input type="checkbox"/> SUBMI	<input type="checkbox"/>	Collective No.	CHAR	10
• <input type="checkbox"/> LIFSK	<input type="checkbox"/>	Delivery Block	CHAR	2
• <input type="checkbox"/> FAKSK	<input type="checkbox"/>	Billing Block	CHAR	2
• <input type="checkbox"/> NETWR	<input type="checkbox"/>	Net Value	CURR	15
• <input type="checkbox"/> WAEFK	<input type="checkbox"/>	Net Currency	CURR	5

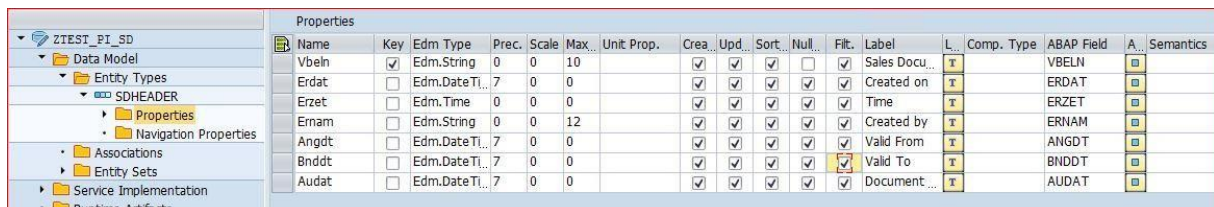
Activate Windows
Go to System settings to activate Windows.

Back Next Cancel

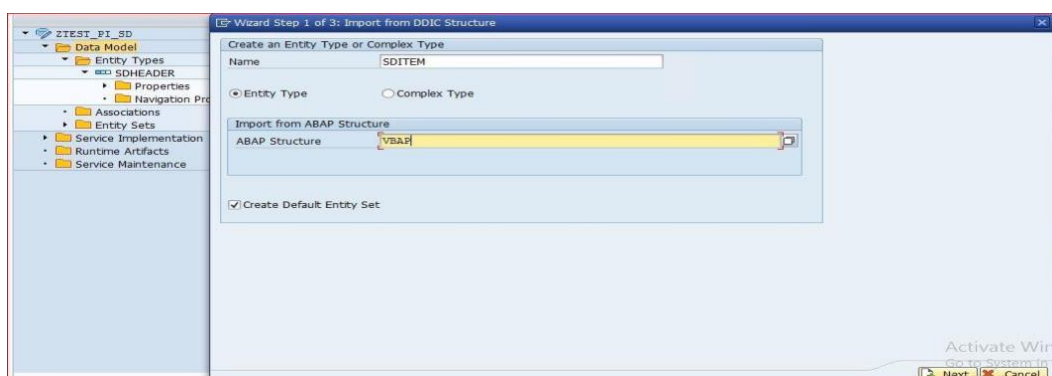
Other window will appear where we have to select the key field. tick on Vbeln as key field and click on finish. You may get warning message; it can be totally ignored.



Now expand folder entity type and fill the below parameters in properties, Please don't tick Null check box for VBELN as it is key field.



Similarly Create Structure for SD Item following same steps



click on Save button at the top of menu bar

Now click on generate Icon, A pop up window will appear with class details , click on tick icon and proceed further. It will ask for package , give details and proceed further . These are also knowns as runtime artifacts.

Model and Service Definition

Model Provider Class

Class Name: ZCL_ZTEST_PI_SD_MPC_EXT

Base Class Name: ZCL_ZTEST_PI_SD_MPC

Data Provider Class

☒ Generate Classes

Class Name: ZCL_ZTEST_PI_SD_DPC_EXT

Base Class Name: ZCL_ZTEST_PI_SD_DPC

Service Registration

Technical Model Name: ZTEST_PI_SD_MDL

Model Version: 1

Technical Service Name: ZTEST_PI_SD_SRV

Service Version: 1

Step 2. Go to transaction code /IWFND/MAINT_SERVICE .

Click on push button Add services .

Activate and Maintain Services

Filter | Add Service | Delete Service | Service Details | Load Metadata | Error Log | Request Statistics

Refresh Catalog | OAuth | Soft State | Processing Mode | Add to Transport

Service Catalog

Type	Technical Service Name	Service Description	External Service Name	Nsp.	OAut.	Soft State	Processing Mode
BEP	ZABAP_REPOSITORY_SRV	1 SAPUIS ABAP Repository services via oData	ABAP_REPOSITORY_SRV	/UIS/	<input type="checkbox"/>	Not Supported	Routing-based
BEP	ADT	1 Gateway service for ADT	ADT_SRV		<input checked="" type="checkbox"/>	Not Supported	Routing-based
BEP	ZAPI_JOB_MANAGEMENT_SRV	1 Application job management	API_JOB_MANAGEMENT_SRV		<input checked="" type="checkbox"/>		Co-deployed only
BEP	ZAPL_LOG_MANAGEMENT_SRV	1 Application Log management	APL_LOG_MANAGEMENT_SRV		<input checked="" type="checkbox"/>		Co-deployed only
BEP	ZAPS_CDS_GKE_SRV	1 Generic CDS key user access	APS_CDS_GKE_SRV		<input type="checkbox"/>	Not Supported	Routing-based
BEP	ZAPS_CHANGE_DOCUMENTS_SRV	1 OData Service for Change Documents	APS_CHANGE_DOCUMENTS_SRV		<input checked="" type="checkbox"/>		Co-deployed only
BEP	ZAPS_EXT_CBO_D_SRV	1 Custom Business Objects: Draft	APS_EXT_CBO_D_SRV		<input type="checkbox"/>	Not Supported	Routing-based
BEP	ZAPS_EXT_CCL_SRV	1 Custom Code List	APS_EXT_CCL_SRV		<input type="checkbox"/>	Not Supported	Routing-based
BEP	ZAPS_EXT_TRC_SRV	1 OData Services for Tracing	APS_EXT_TRC_SRV		<input type="checkbox"/>	Not Supported	Routing-based

Next screen will appear, give the alias name and execute, Search you for your project.

Add Selected Services

Get Services

Filter

System Alias: ☐ Co-Deployed

Technical Service Name:

Version:

External Service Name: External Mapping ID:

Add Selected Services

Select Backend Services

Type	Technical Service Name	Ver...	Service Description	External Service Name	Namespace
BEP	ZDTINF_TC_MAINT_SRV_IS_OIL	1	Maintenance of data model	ZDTINF_TC_MAINT_SRV_IS_OIL	
BEP	ZFILE_NK_SRV	1	Displaying Images	ZFILE_NK_SRV	
BEP	ZFILE_SRV	1	File Import	ZFILE_SRV	
BEP	ZFILE1_SRV	1	File Import	ZFILE1_SRV	
BEP	ZFIRST_SRV	1	first project	ZFIRST_SRV	
BEP	ZHSODATA_SRV	1	ODATA1 CDS	ZHSODATA_SRV	
BEP	ZHSODATA1_SRV	1	odata 3	ZHSODATA1_SRV	
BEP	ZNAVIGATION_SRV	1	Dmo of use of Navigation	ZNAVIGATION_SRV	
BEP	ZODATA_SRV	1	ZODATA	ZODATA_SRV	
BEP	ZPRACTICE_ODATA_SRV	1	creation of products	ZPRACTICE_ODATA_SRV	
BEP	ZPROJECT_SRV	1	project	ZPROJECT_SRV	
BEP	ZSAP_SRV	1	sapgateway	ZSAP_SRV	
BEP	ZTEST_PI_SD_SRV	1	Test for SD documents	ZTEST_PI_SD_SRV	
BEP	ZTRANSLATIONS_CDS	1	maintain translations for cds	ZTRANSLATIONS_CDS	
BEP	ZV_COMPOSIT_VIEW_CDS	1	composit view	ZV_COMPOSIT_VIEW_CDS	

Activate Windows
Go to System in Control
Windows

Now double click on your project name . A pop up window 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

Technical Service Name:

Service Version:

Description:

External Service Name:

Namespace:

External Mapping ID:

External Data Source Type:

Model

Technical Model Name:

Model Version:

Creation Information

Package Assignment:

ICF Node

☒ Standard Mode ☐ None

☒ Set Current Client as Default Client in ICF Node

OAuth enablement

☐ Enable OAuth for Service

Now click back and go to main screen of transaction /IWFND/MAINT_SERVICE and find your service.

Click on SAP Gateway Client

Type	Technical Service Name	Service Description	External Service Name	Nsp.	OA...	Soft State	Processing Mode
BEP	ZTEST_LAX_PLANT_SRV	1 Test for plant	ZTEST_LAX_PLANT_SRV		<input type="checkbox"/>	Not Supported	Routing-based
BEP	ZTEST_LAX_SO_SRV	1 TEST	ZTEST_LAX_SO_SRV		<input type="checkbox"/>	Not Supported	Routing-based
BEP	ZTEST_LAX_SRV	1 Test ODATA	ZTEST_LAX_SRV		<input type="checkbox"/>	Not Supported	Routing-based
BEP	ZTEST_ODATA_SRV	1 My first odata project	ZTEST_ODATA_SRV		<input type="checkbox"/>	Not Supported	Routing-based
BEP	ZTEST_PI_SD_SRV	1 Test for SD documents	ZTEST_PI_SD_SRV		<input type="checkbox"/>	Not Supported	Routing-based
BEP	ZTEST_PIN_PO_SRV	1 test PO Odata	ZTEST_PIN_PO_SRV		<input type="checkbox"/>	Not Supported	Routing-based
BEP	ZTEST_PIN_SD_SRV	1 Test for SD documents	ZTEST_PIN_SD_SRV		<input type="checkbox"/>	Not Supported	Routing-based
BEP	ZTEST_SERVICE_GENERATION_SRV	1 Odata for Service Generatio technique	ZTEST_SERVICE_GENERATION_SRV		<input type="checkbox"/>	Not Supported	Routing-based
BEP	ZTEST_SRV	1 test	ZTEST_SRV		<input type="checkbox"/>	Not Supported	Routing-based
BEP	ZTEST_TABLE1_SRV	1 test	ZTEST_TABLE1_SRV		<input type="checkbox"/>	Not Supported	Routing-based
BEP	ZTRANSLATIONS_SRV	1 cds view translations	ZTRANSLATIONS_SRV		<input type="checkbox"/>	Not Supported	Co-deployed only
BEP	ZX_SO_CDS	1 Sales Order	ZX_SO_CDS		<input type="checkbox"/>	Not Supported	Routing-based

Status	ICF Node	Session Time-out	Soft State	Description
OC	ODATA	00:00:00		Standard Mode

SAP System Alias	Description	Default	Metad
LOCAL	Local System Alias	<input checked="" type="checkbox"/>	<input type="checkbox"/>

A new screen will come, Execute the transaction and check the response .

SAP Gateway Client

Execute Select Service Administration Service Implementation EntitySets Add URI Option

HTTP Method: GET POST PUT PATCH MERGE DELETE HEAD

Request URI: /sap/opu/odata/sap/ZTEST_PI_SD_SRV/?\$format=xml

Protocol: HTTP HTTPS Test Group Test Case

HTTP Request

HTTP Response - Processing Time = 138 ms

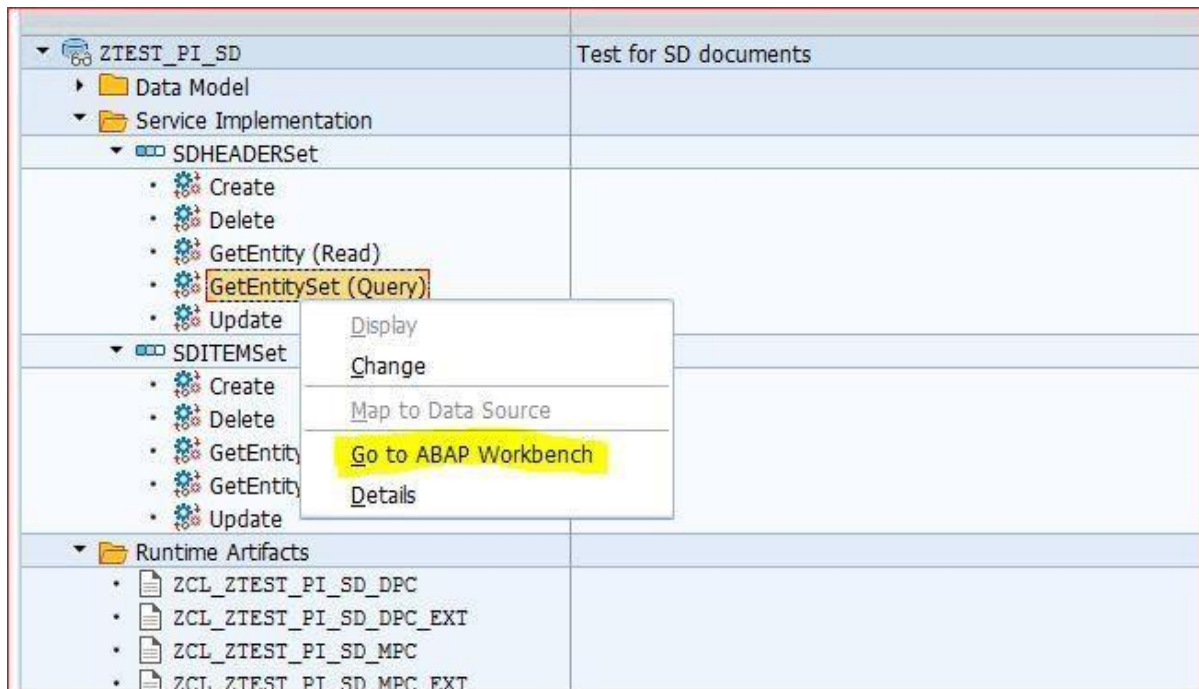
Header Name	Value
~status_code	200
~status_reason	OK

```
<?xml version="1.0" encoding="UTF-8"?>
<app:service xml:lang="en" xmlns:sap="http://www.sap.com/Protocols/SAPData"
xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata"
xmlns:atom="http://www.w3.org/2005/Atom" xmlns:app="http://www.w3.org/2007/app"
xml:base="http://s4hana1909.training.com:8701/sap/opu/odata/sap/ZTEST_PI_SD_SRV/">
  <app:workspace>
    <atom:title type="text">Data</atom:title>
    <app:collection href="SDHEADERSet" sap:content-version="1" sap:pageable="false"
sap:deletable="false" sap:updatable="false" sap:creatable="false">
      <atom:title type="text">SDHEADERSet</atom:title>
    
```

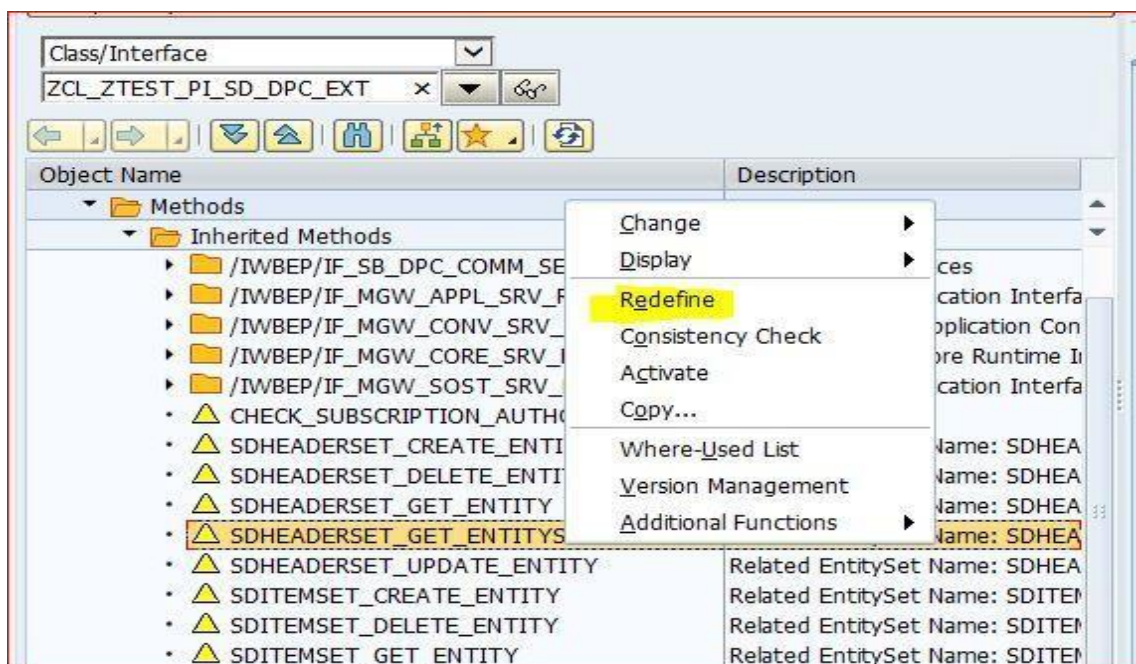
Now we will write code to get data.

Step 3. Go to transaction code SEGW and expand folder service Implementation.

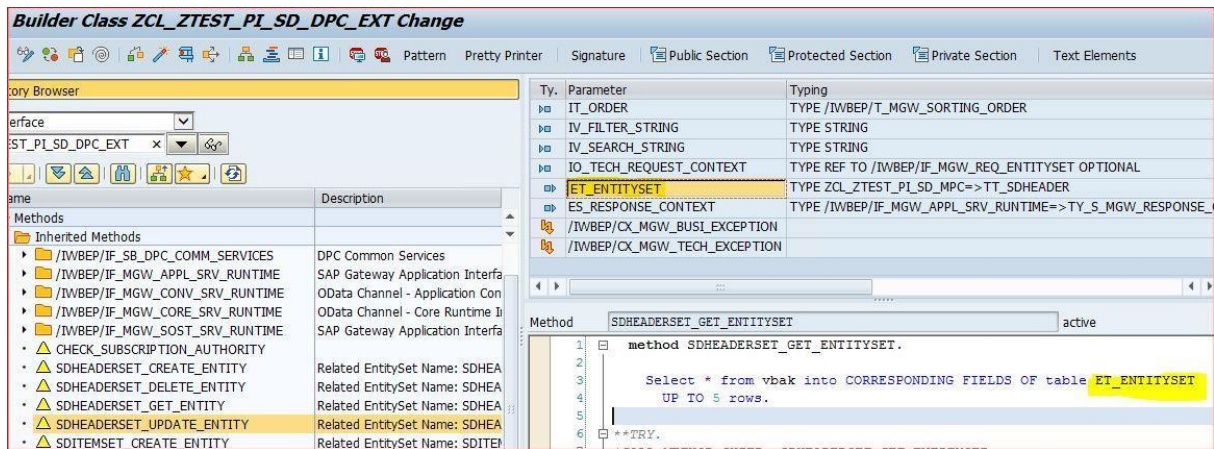
Under service implementation - Expand SDheaderSet. you will find different options. Right click on GetEntitySet and select GO to ABAP work Bench . It will redirect to the class



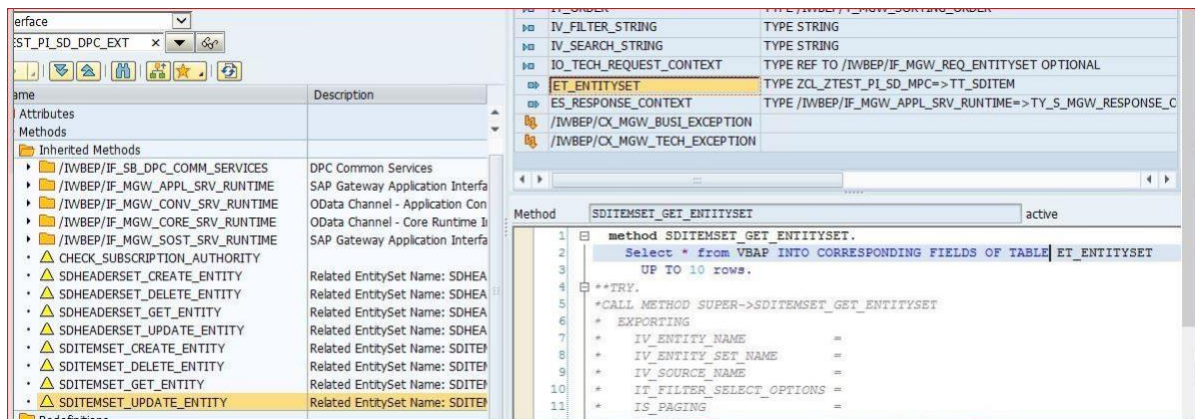
Now expand the method drop down and select method for GetEntitySet for Header data and right click and select redefine.



Write below code in method. Save and activate all related objects for classes.



Similarly , Write code for GetEntitySet for Item and activate .



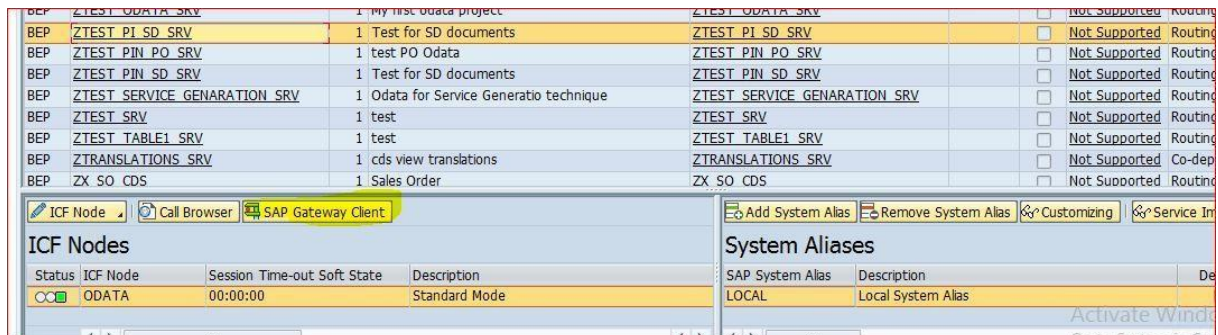
Step -4

Go to transaction /IWFND/MAINT_SERVICE and find out you service , select your service and click on load metadata.

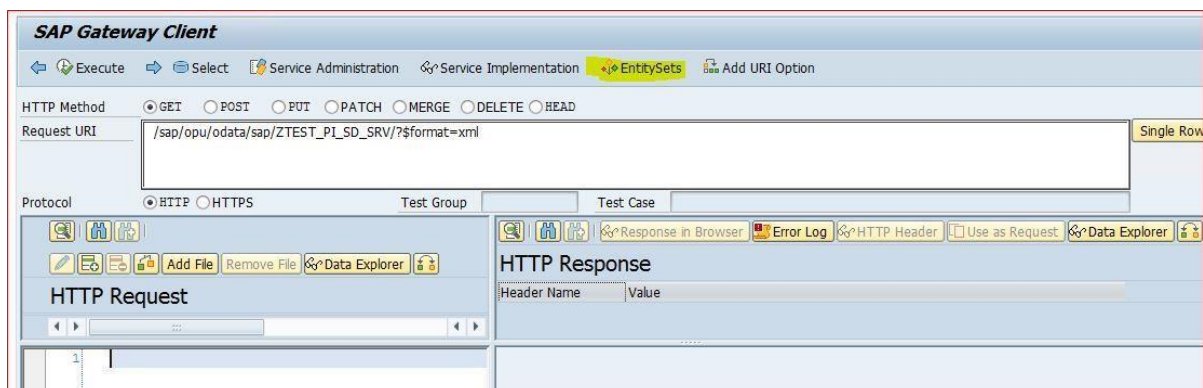
Type	Technical Service Name	V...	Service Description	External Service Name	Nsp.	OAut...	Soft St
BEP	ZTEST LAX PLANT SRV	1	Test for plant	ZTEST LAX PLANT SRV		<input type="checkbox"/>	Not Su
BEP	ZTEST LAX SO SRV	1	TEST	ZTEST LAX SO SRV		<input type="checkbox"/>	Not Su
BEP	ZTEST LAX SRV	1	Test ODATA	ZTEST LAX SRV		<input type="checkbox"/>	Not Su
BEP	ZTEST ODATA SRV	1	My first odata project	ZTEST ODATA SRV		<input type="checkbox"/>	Not Su
BEP	ZTEST PI SD SRV	1	Test for SD documents	ZTEST PI SD SRV		<input type="checkbox"/>	Not Su
BEP	ZTEST PIN PO SRV	1	test PO Odata	ZTEST PIN PO SRV		<input type="checkbox"/>	Not Su
BEP	ZTEST PIN SD SRV	1	Test for SD documents	ZTEST PIN SD SRV		<input type="checkbox"/>	Not Su
BEP	ZTEST SERVICE GENERATION SRV	1	Odata for Service Generatio technique	ZTEST SERVICE GENERATION SRV		<input type="checkbox"/>	Not Su
BEP	ZTEST SRV	1	test	ZTEST SRV		<input type="checkbox"/>	Not Su
BEP	ZTEST TABLE1 SRV	1	test	ZTEST TABLE1 SRV		<input type="checkbox"/>	Not Su
BEP	ZTRANSLATIONS SRV	1	cds view translations	ZTRANSLATIONS SRV		<input type="checkbox"/>	Not Su

Information message will pop up - Metadata has been loaded successfully.

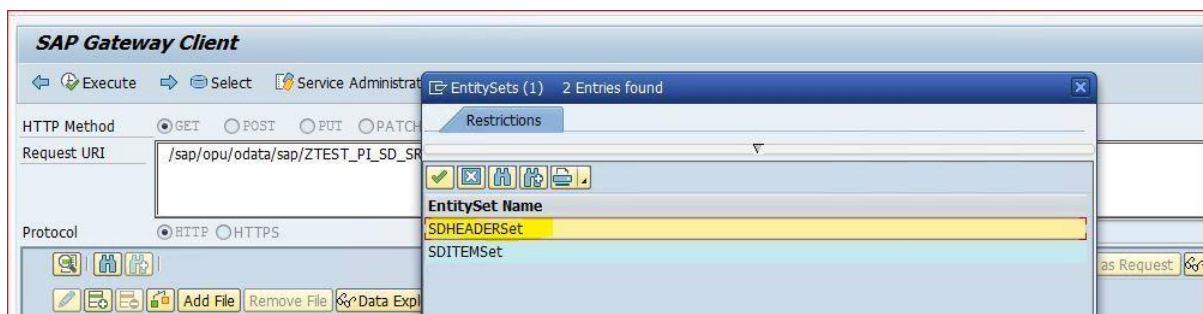
Now Click on SAP Gateway Client .



Now Click on Entity set.



Select entity for header and enter



Click and execute and you will get the header data in response

HTTP Response - Processing Time = 876 ms

Header Name	Value
~status_code	200
~status_reason	OK

```
<category scheme='ZTEST_PI_SD_SRV.SDHEADER' />
<term='ZTEST_PI_SD_SRV.SDHEADER' />
<link title='SDHEADER' rel='self' href='SDHEADERSet('1')' />
<content type='application/xml' />
<m:properties xmlns:d='http://schemas.microsoft.com/2003/11/Serialization/Data' />
  <d:Vbeln>1</d:Vbeln>
  <d:Erdat>2020-01-14T00:00:00</d:Erdat>
  <d:Erzet>PT05H33M12S</d:Erzet>
  <d:Ernam>BEST</d:Ernam>
  <d:Angdt m:null='true' />
  <d:Bnddt m:null='true' />
  <d:Audat>2020-01-14T00:00:00</d:Audat>
</m:properties>
</content>
```

Similarly, Select entity set for item and execute . You will get data for item

HTTP Response - Processing Time = 1167 ms

Header Name	Value
~status_code	200
~status_reason	OK

```
<category scheme='ZTEST_PI_SD_SRV.SDITEM' />
<term='ZTEST_PI_SD_SRV.SDITEM' />
<link title='SDITEM' rel='self' href='SDITEMSet('1')' />
<content type='application/xml' />
<m:properties xmlns:d='http://schemas.microsoft.com/2003/11/Serialization/Data' />
  <d:Vbeln>1</d:Vbeln>
  <d:Posnr>000010</d:Posnr>
  <d:Matnr>HANA</d:Matnr>
  <d:Matwa>HANA</d:Matwa>
  <d:Pmatn />
  <d:Charg />
  <d:Matkl />
  <d:Arktb>HANA TEST</d:Arktb>
</m:properties>
</content>
```