SAP Web Service - Create, Expose and Consume

Agenda for this session

1. Introduction to Web Service and WSDL
2. Expose Web Service
3. Consume External Web Service
4. Demo

Web service:

A **Web service** is an independent, modular, self-describing application function or service. Web services use XML to code and to decode data, and SOAP to transport it (using open protocols).

By using Web services, your application can publish its function or message to the rest of the world.

Web services Type: SOAP and REST
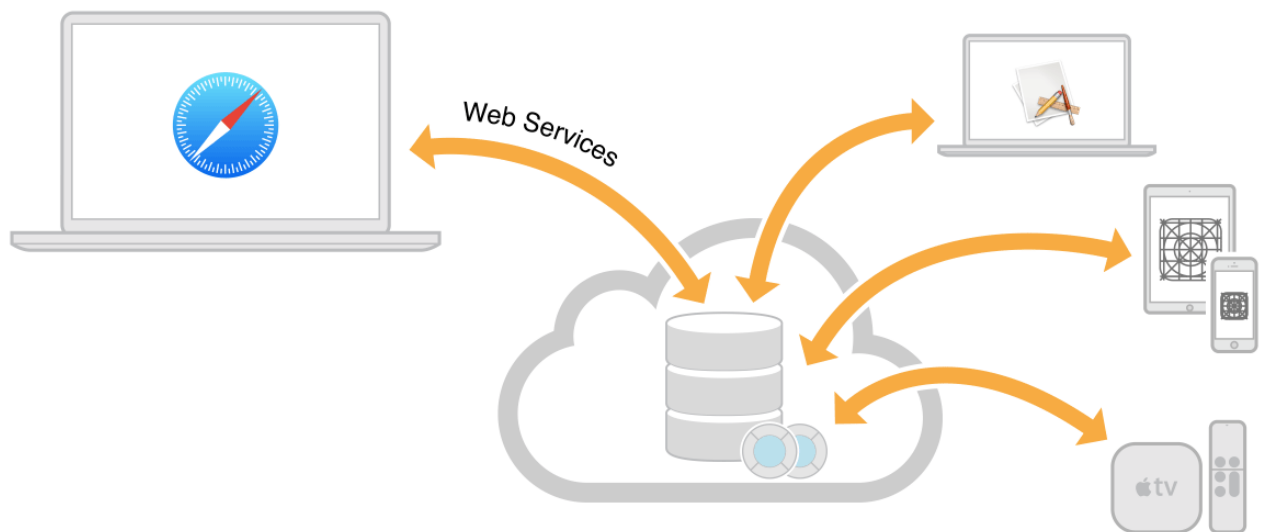
WSDL

WSDL stands for Web Service Definition Language. WSDL is a document written in XML. The document describes a Web service. It specifies the operations (or methods) the service exposes.

The following are the elements of WSDL.

Definitions: This is the root element and has web service name and its target namespace.

Types: This element defines the data types used by the web services.

Message: This describes the request and response messages.

Port Type: It is most important element of web service. This defines the operations such as the input and output/Request and Response messages involved.

Bindings: In bindings element we define the way messages are transported i.e. binding style and transport protocol.

**Documentation:** It will provide the brief description of the service.

Expose Web Service

Normally when a third-party calls SAP, it does an RFC function module or BAPI call through Middleware. They can also do direct web service calls thus by-passing Middleware. In such web service calls, WSDL files come into picture. WSDL is a file which is recognized by the third party as well as SAP.

Consume External Web Service

Very often we have a business need to connect to the external third-party system from within SAP environment using external web service to pull information.

In layman terms, there are some data present in the external system and is needed in SAP system. To achieve this, we would need to create SAP Web Service Consumer to call external web service from SAP system.
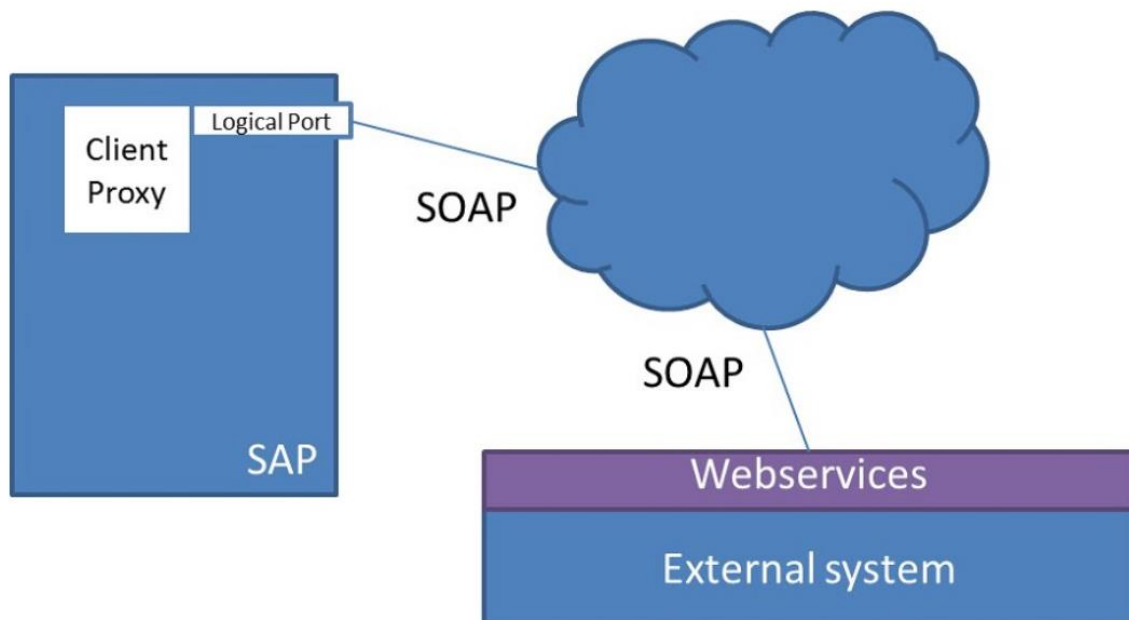
Expose web service

1. Open the RFC Function module for which you want to create the WSDL.
    For demo ZFM_WS is considered.
     Right click on the FM->Create->Web Service.
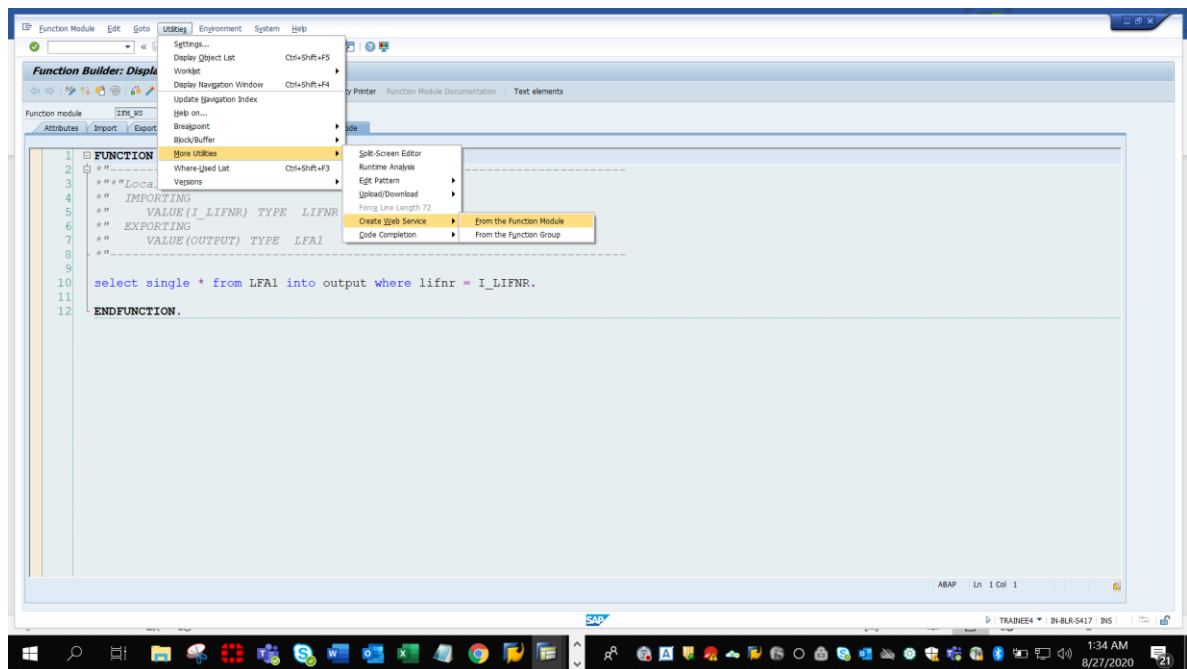
Fig-1

2. Give Service Definition name and description.
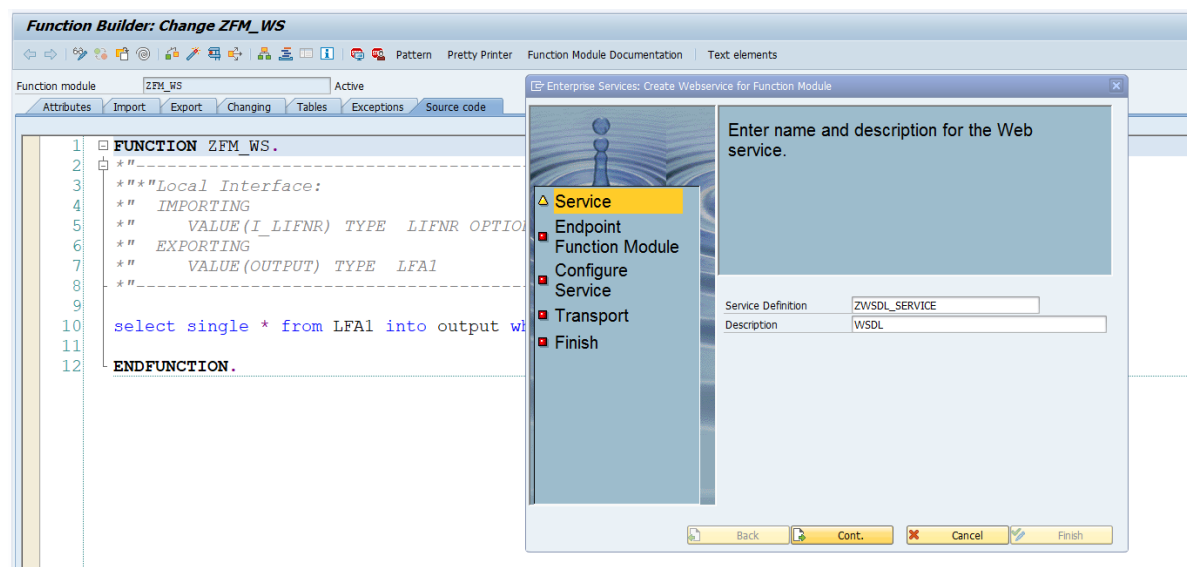
 Fig-2
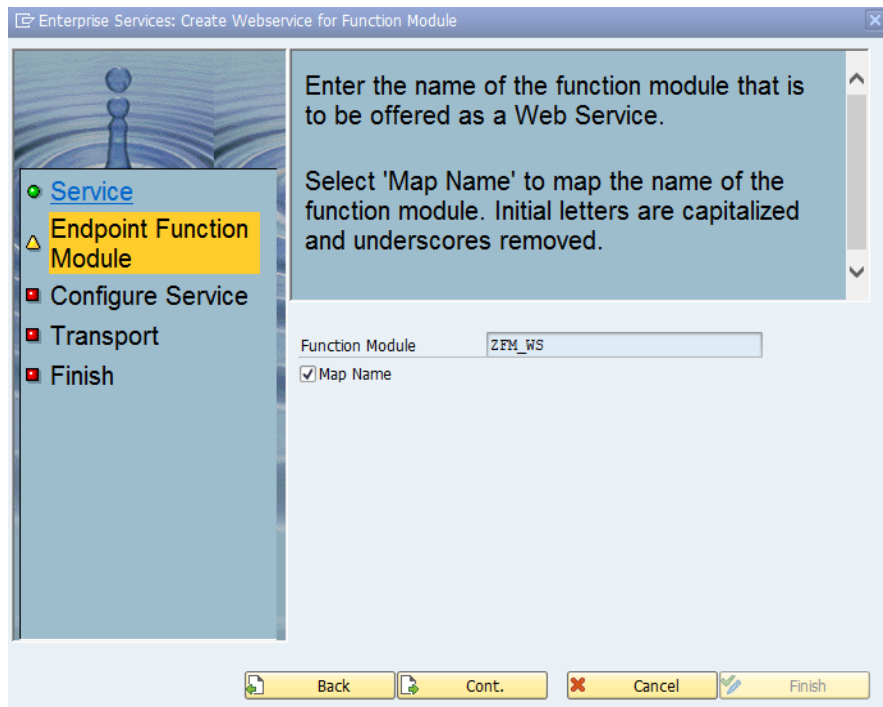
Fig-3

3. I have selected the No Authentication required Profile. You can choose any other as per your requirement from the drop-down list.
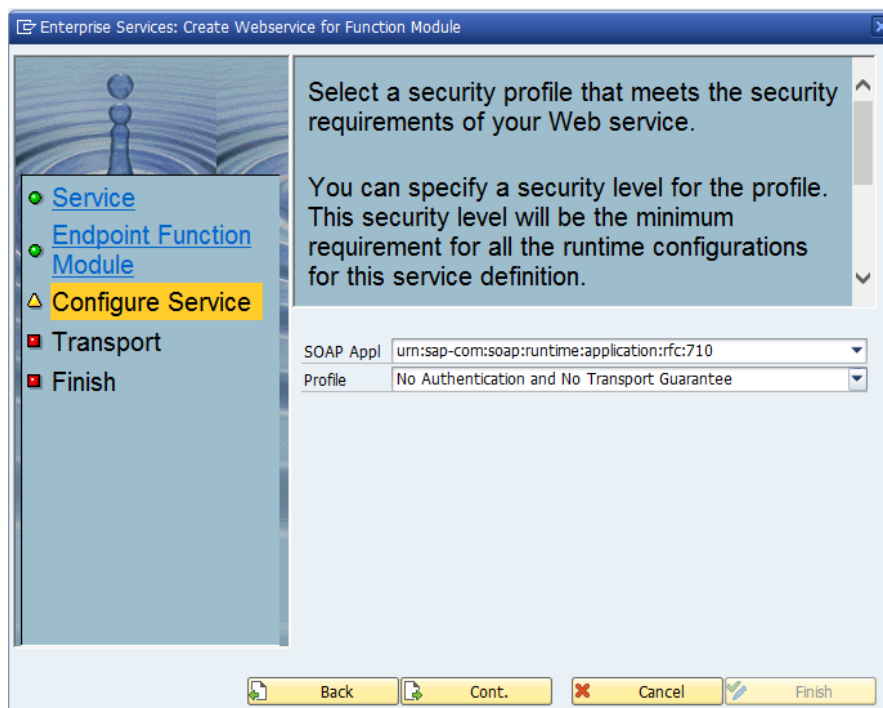
Fig-4

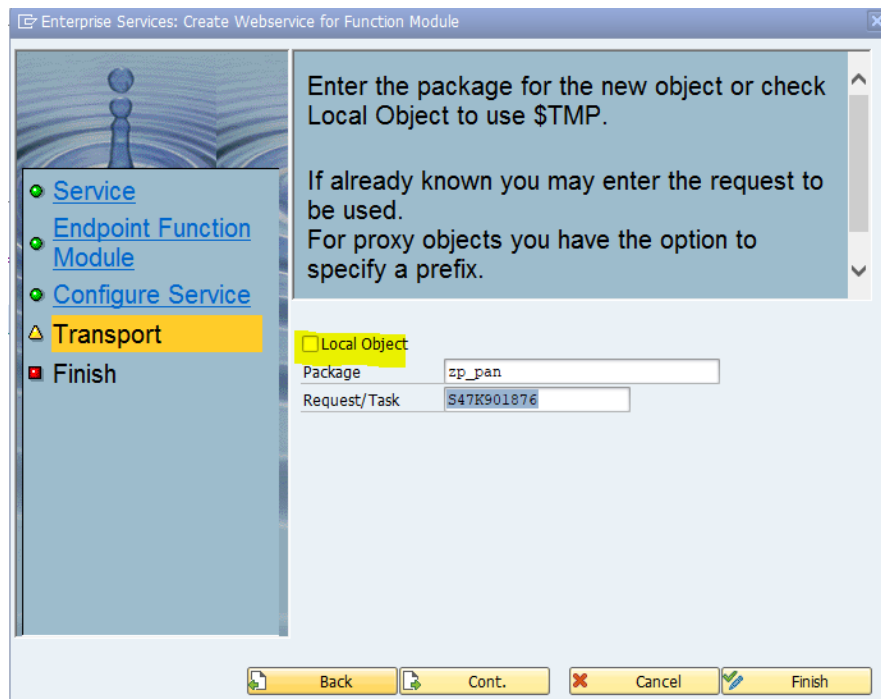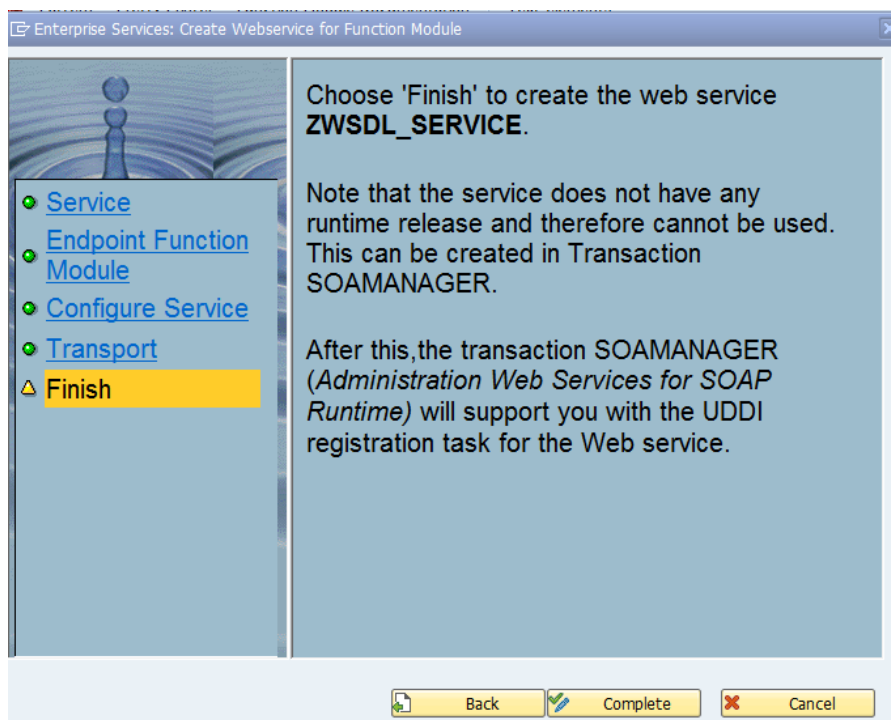4. Give the package, transport number and complete the wizard.

Fig-5

Fig-6

5. Once the wizard is complete, activate the service definition.

Fig-7

6. Execute transaction SOAMANAGER and select "Web Service Configuration"

Fig-8

7. Search for your Service. Select the row and hit Apply Selection button.

Fig-9

8. Go to Configuration->Create Service

Fig-10

9. Give the Service Name and the Binding Name and hit Apply Settings.

Fig-11

10. Select the suitable authentication and security option and Save it.

Fig-12

11. Now the WSDL configuration is complete and it should be ready to be exposed to the external system.
Click on the link 'Open Service WSDL generation'. This will show the WSDL file.

Fig-13

Fig-14

12. ECC Role needed to access Web Service:

When the third party tries to call the URL (SAP WSDL), we might need to provide them a user id and password. The user for which the Web Service call is to be enabled should have the role 'SAP_BC_WEBSERVICE_SERVICE_USER'. Check your role in t-code SU01.

Fig-15

13. Execute the soapUI application which you have downloaded and installed. Give a Project name and give the URL of WSDL which was generated on the last step.

Fig-16

14. Given Input value of LIFNR as 'VENDOR1' in left hand side and got output in right hand side screen.
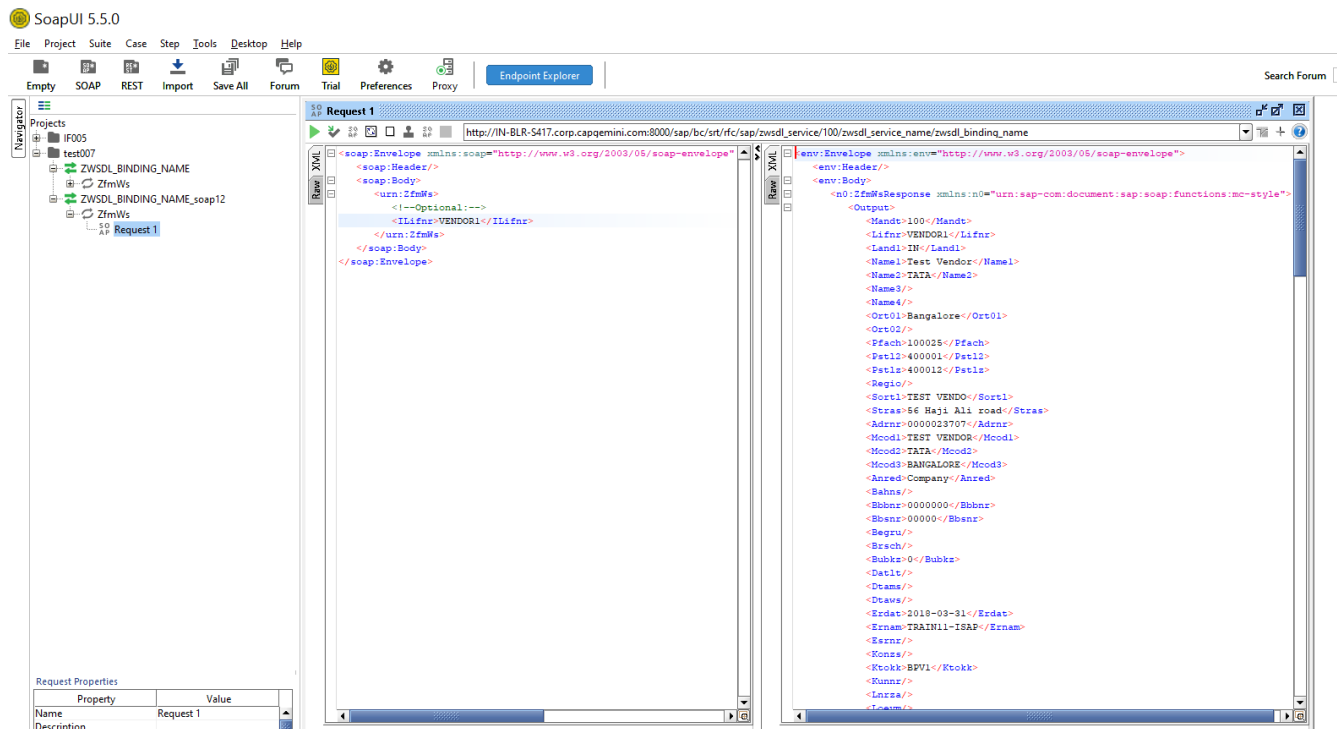

Fig-17

15. Tansaction code: SRT_UTIL can be used to check any kind of error in web service.
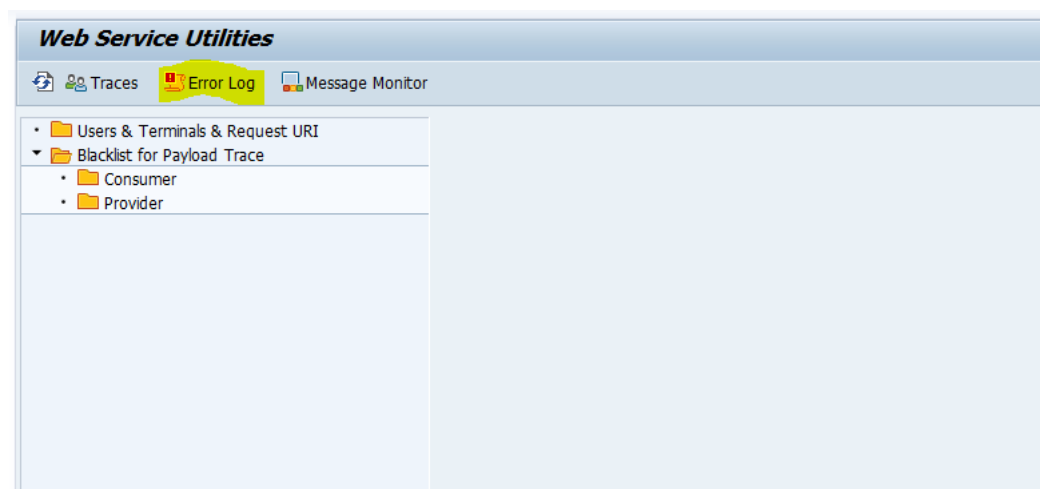

Fig-18

Consume External Web Service

1. Tcode SE80, go to **Enterprise Services** and right click on 'Create'.
   A pop-up will appear. Select **Service Consumer** option and click 'Cont.'.
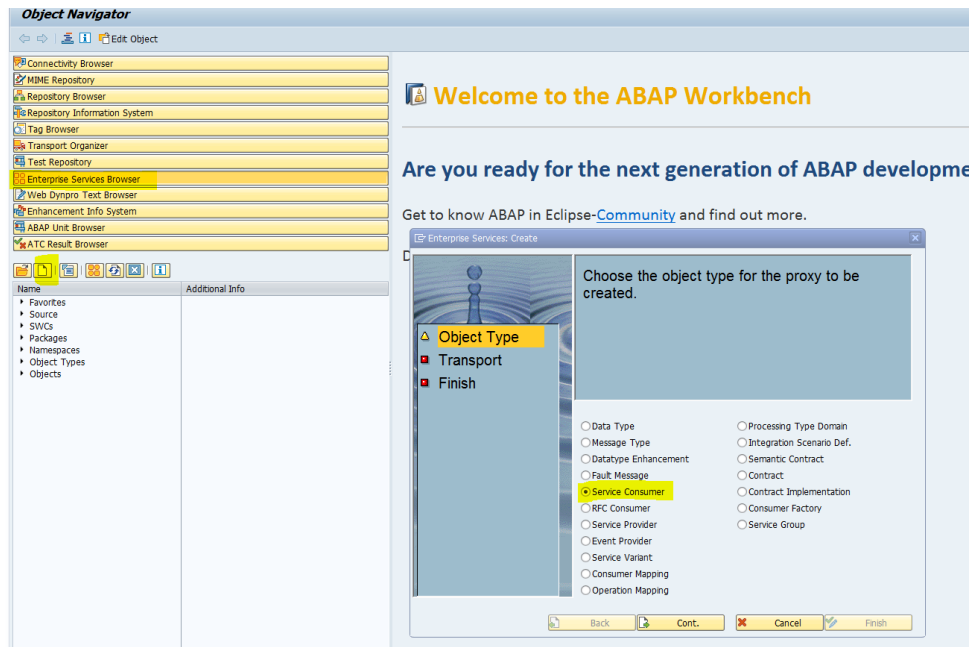

Fig-19

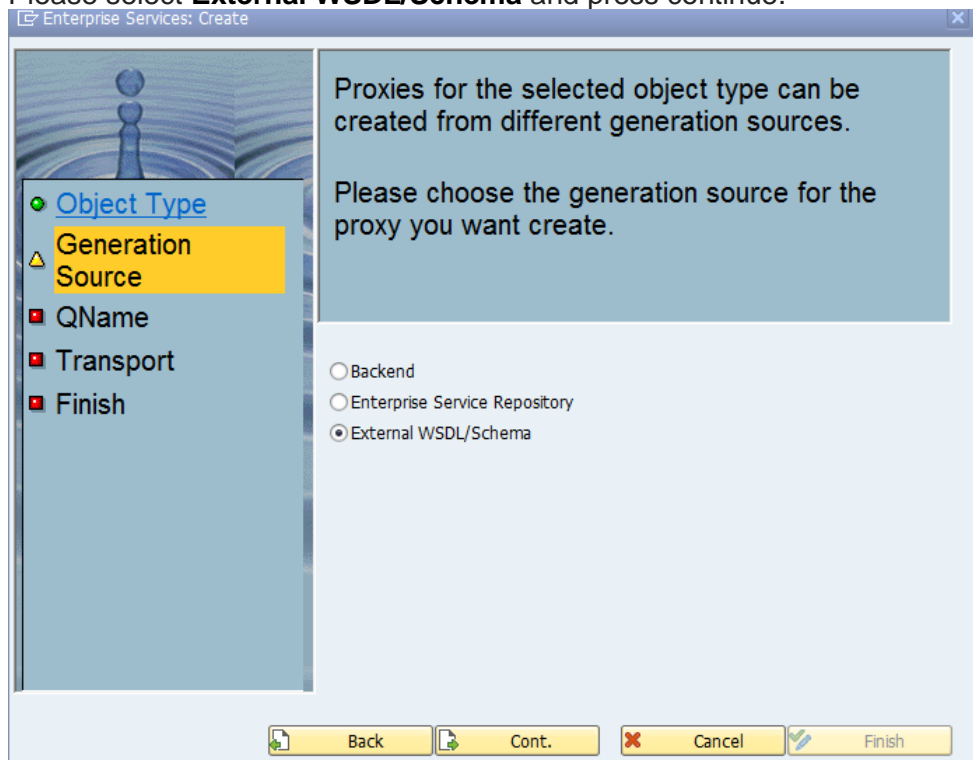2. Please select **External WSDL/Schema** and press continue.

Fig-20

3. We can choose amongst Local file, URL, HTTP Destination and Service Registry. Choose URL option and click on Continue.
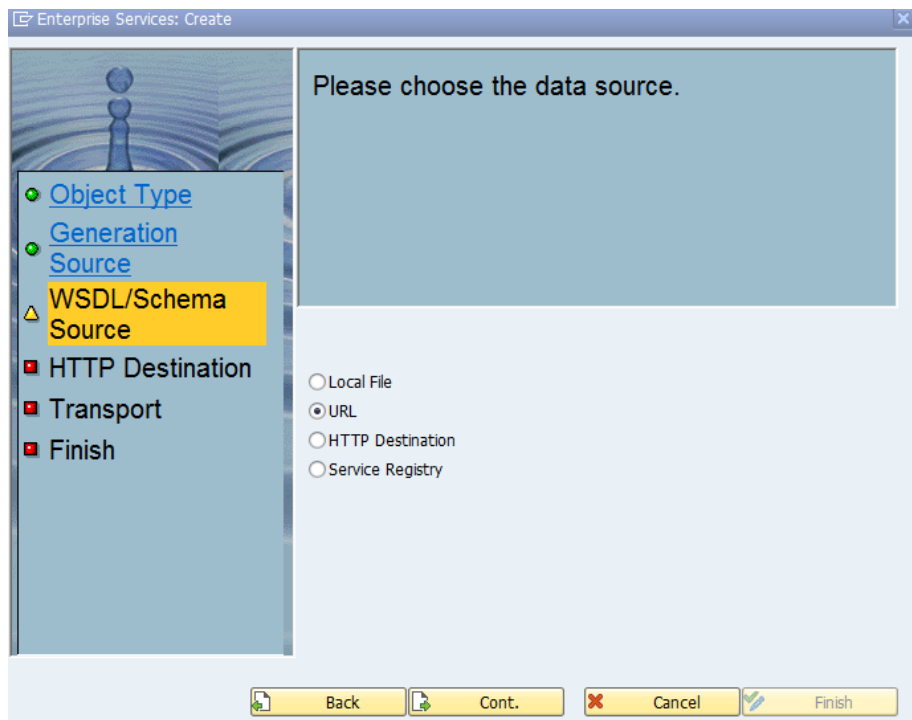

Fig-21

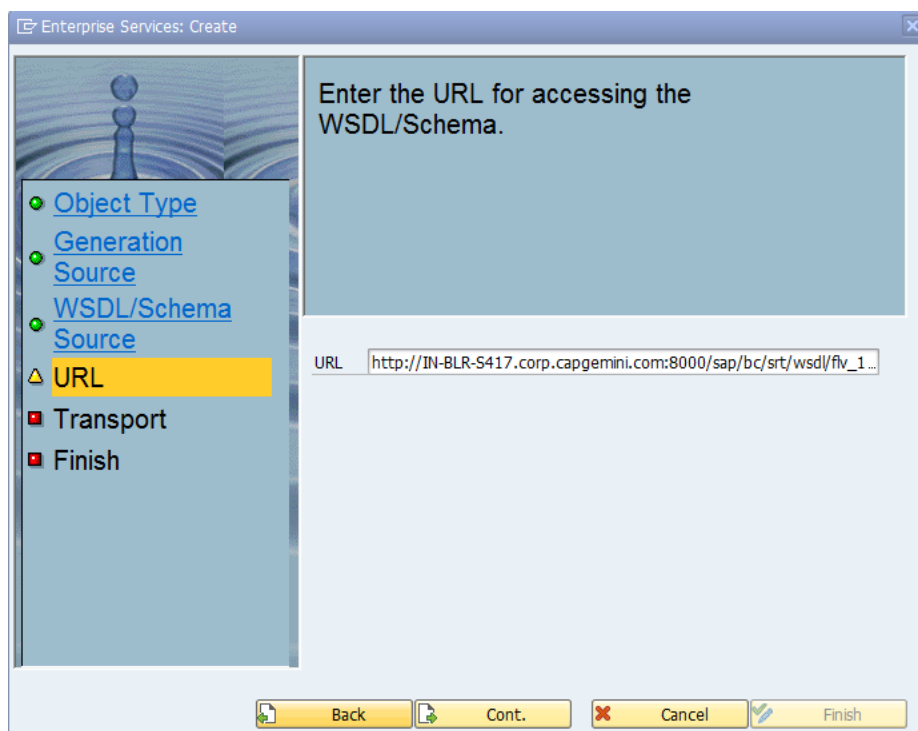4. Enter the External system WSDL in the URL path and click on continue.

Fig-22

5. In the next step, it will ask for TR details and package assignment. Enter the details and press continue to finish the Consumer Service creation.

Fig-23

6. Once consumer service is created, proxy class and methods will get created automatically which will be consumed in ABAP report.

Fig-24

7. Go back to SOAMANAGER, find the consumer proxy created

Fig-25

8. Click Consumer proxy and create a new logical port:

A consumer proxy never stores details about a server URL (which is system specific). These details have to be configured through logical ports and End Points.

Fig-26

Web Service Configuration (S47;100)

New WSDL based Configuration of Logical Port for Consumer Proxy 'ZCO_ZWSDL_SERVICE'

1	2	3	4	5	6	7	8
Logical Port Name	WSDL Information	Binding Selection	Consumer Security	HTTPSettings	SOAP Protocol	Identifiable Business Context	Operation Settings

Back | Next | Finish | Cancel

WSDL Access Settings

WSDL Base: ● Via HTTP Access
　　　　　　 ○ Via File
　　　　　　 ○ WSDL from Upload

WSDL Location

URL for WSDL Access: ▸rp.capgemini.com:8000/sap/bc/srt/wsdl/flv_10002A111AD1/srvc_url/sap/bc/srt/rfc/sap/zwsdl_service/100/zwsdl_service_name/zwsdl_binding_name?sap-client=100

WSDL Access User: trainee4

WSDL Assess User Password: ••••••••

Show/Hide Proxy Settings

Fig-27

New WSDL based Configuration of Logical Port for Consumer Proxy 'ZCO_ZWSDL_SERVICE'

1	2	3	4	5	6	7	8
Logical Port Name	WSDL Information	Binding Selection	Consumer Security	HTTPSettings	SOAP Protocol	Identifiable Business Context	Operation Settings

Back | Next | Finish | Cancel

Binding

Selected Binding: 1 ZWSDL_BINDING_NAME_soap12

Overview of Possible Combinations Identified by WSDL Document

Actions	Index	Order	Subject Name	Property Name	Property Value
⬇ 🖫	36	1	ZWSDL_BINDING_NAME_soap12	OptimizedXMLTransfer	SAPBinaryXML
				Transport Binding Type	http://www.sap.com/soap12/http
⬇ 🖫	36	2	ZWSDL_BINDING_NAME	OptimizedXMLTransfer	SAPBinaryXML
				Transport Binding Type	http://schemas.xmlsoap.org/soap/http
⬇ 🖫	34	3	ZWSDL_BINDING_NAME_soap12	OptimizedXMLTransfer	MTOM
				Transport Binding Type	http://www.sap.com/soap12/http
⬇ 🖫	34	4	ZWSDL_BINDING_NAME	OptimizedXMLTransfer	MTOM
				Transport Binding Type	http://schemas.xmlsoap.org/soap/http

Fig-28

Web Service Configuration (S47;100)   ❓ Help

Details of Consumer Proxy: ZCO_ZWSDL_SERVICE

Overview | **Configurations** | Details

Define Logical Ports

Create ▾ | Set Log.Port Default | Activate | Deactivate | Delete

▤	Actions	Logical Port	State	Logical Port is Default	Description	Creation Type
	6⊟ ✎ 🗑 ⊤ 🔍	ZLP_NAME	Active	true	logical port	Manually created

Fig-29

9. Consume the web service in ABAP report:

You can find the data type for input and output parameters in SE80:

Fig-30

Fig-31