# Oracle Service Bus - MySAP adapter synchronous events with SAP R/3

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## INTRODUCTION

**Oracle Service Bus adapter for MySAP supports inbound transactions through both Remote Function Call(RFC) and Intermediate Documents (**IDOCs**) .**

The Oracle Service Bus (OSB) Adapter for MySAP is part of the OSB Adapter install. The OSB Adapter for MySAP can be deployed as both a web service servlet as well as JCA 1.5 Resource Adapter. The Adapter Framework is used for the bidirectional integration of the JCA 1.5 resource adapters with Oracle Service Bus. Adapter framework is based on open standards and acts as a pseudo JCA 1.5 container for deployment on top of J2EE JCA 1.0 containers. It manages the life-cycle (start/stop/endpoint activation/endpoint deactivation) as well as the message-inflow system contracts for receiving adapter events and forwarding it to the OSB's business and proxy services.

The OSB Adapter for MySAP supports two ways of receiving SAP events. It can be either by Remote Function Cal (RFC) or Intermediate Documents (IDOC). During event processing, the adapter receives RFCs and IDocs directly from SAP. SAP Message Objects define SAP events and they are published from SAP. The SAP Integration Broker is used for configuring a process for publishing SAP Message Objects to other 3rd party applications. The OSB Adapter for MySAP can subscribe to SAP Message Objects.

OSB Adapter for MySAP supports events either asynchronously or synchronously. In the synchronous event model, the enterprise application would publish an output for an event and would wait till it receives a response for the publication of the message. For example, when a user adds a customer in the banking application, it initiates an event by sending a request from the banking application to check the credit score of that customer with creditcheck application. The creditcheck application would respond back with the credit score for the customer. The banking application will receive the credit score details and will update the customer records in the banking application. All these constitute one single transaction.

In the case of synchronous events with SAP R/3, when SAP publishes an event, it becomes the client. The OSB MySAP adapter acts as a server by receiving the request and does the processing by invoking other applications and sends the response back to SAP. Till then, the SAP R/3 application waits to receive the response back from the adapter. The **RFC** objects of SAP support synchronous events and the **IDOCs** do not support the synchronous events.

This document describes the details on how the MySAP adapter works synchronously. In this article, two SAP R/3 systems have been configured to show how they communicate with each other using synchronous events. One SAP R/3 system would act as a source system which initiates an event and other SAP R/3 system would act as a target system from where details are extracted. This scenario can be tried with any other EIS also. But, the source system should be always a SAP system. (i.e) the synchronous event origination can be done only from the SAP system. Target system can be a non-SAP system which can be other ERP's such as Siebel, PeopleSoft or JD Edwards or etc.,

**In case of Synchronous events, SAP R/3 publishes a message and waits till it receives a reply for the message.**

This document provides step by step details on how to receive the event notification from SAP backend to BPEL through MySAP adapter and replies back after extracting the details from another system. The document has been developed using the 10gR3 OSB & Adapters installed on the windows platform and SAP R/3 version 4.7D. Hence, if you are using a different platform, then correlate the terms and commands specific to that operating system by referring the user guides of the specific component.

Note: Depending on the release or service pack installed, certain RFCs may not exist in your particular SAP R/3 system. Therefore, the examples included in this documentation may not be relevant to your system. If this is the case, you should use the examples as a general reference for adapter functionality and choose an RFC that exists within your SAP application environment.

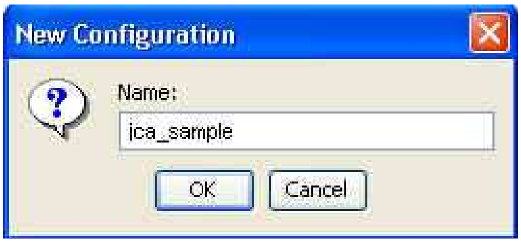
## Configuring the OSB adapter for MySAP

The OSB Application Explorer is used to configure the OSB Adapter for MySAP. WSDL files are created for both JCA Outbound (Request-Response service – BPEL invoke) and JCA Inbound (Event Notification – BPEL receive) interactions and saved to a local directory. These WSDLs are exposed to the JDeveloper via the WSIL servlet. The JDeveloper based design-time wizard has a WSIF browser that is launched from the BPEL Partner Link activity to explore the WSDLs generated by the OSB Adapter Application Explorer.

**OSB adapter for MySAP supports two types of configurations namely Java Connection Architecture (JCA) and Business Services (IBSE).**

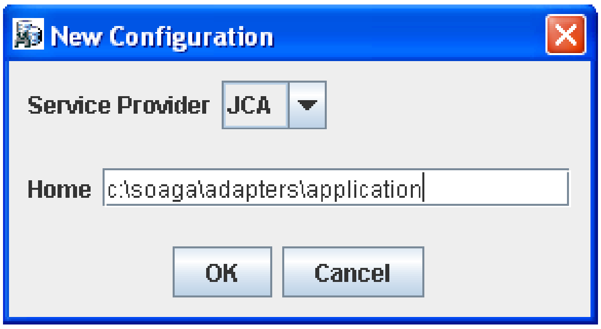
### Creation of the JCA configuration

Start the Application Explorer. On top left, right click on ***configuration*** and select New.  Following window shows up.  Enter the details as shown below and select the OK button:



Name: jca_sample

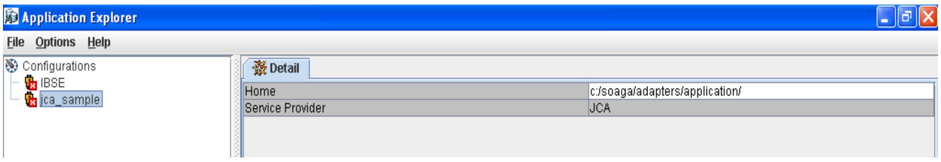
***New configuration*** window shows up.  Select ***JCA*** for Service Provider from the drop down list.  Enter the adapter installed folder for the ***Home***.



Service Provider: JCA

Home: c:\soaga\adapters\application

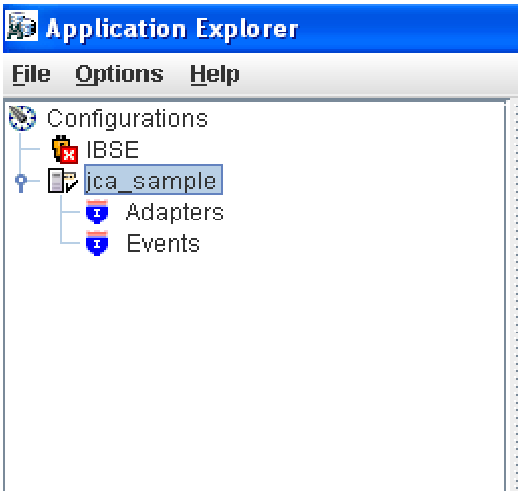
A new configuration by name jca_sample has been created and that will be shown in the Application Explorer as shown below:



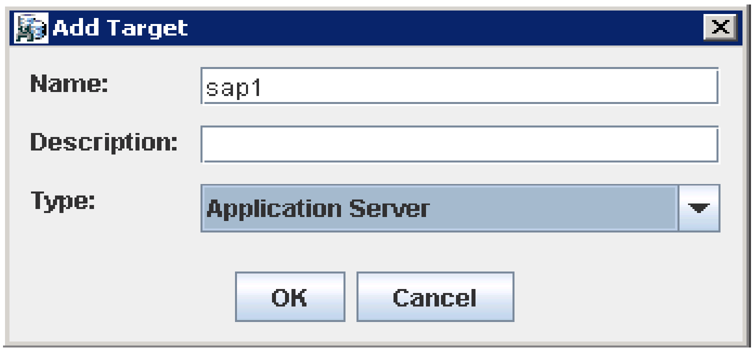
| | |
|---|---|
| Home | c:/soaga/adapters/application/ |
| Service Provider | JCA |

### Creation of the Adapter Target

Select ***jca_sample***, right click and select connect to connect to the jca configuration. That will show two new nodes ***Adapters*** and ***Events***.



Create a new target for the MySAP Adapter. This is the source system from which events will be triggered. For identification purposes, we can call this as sap1.

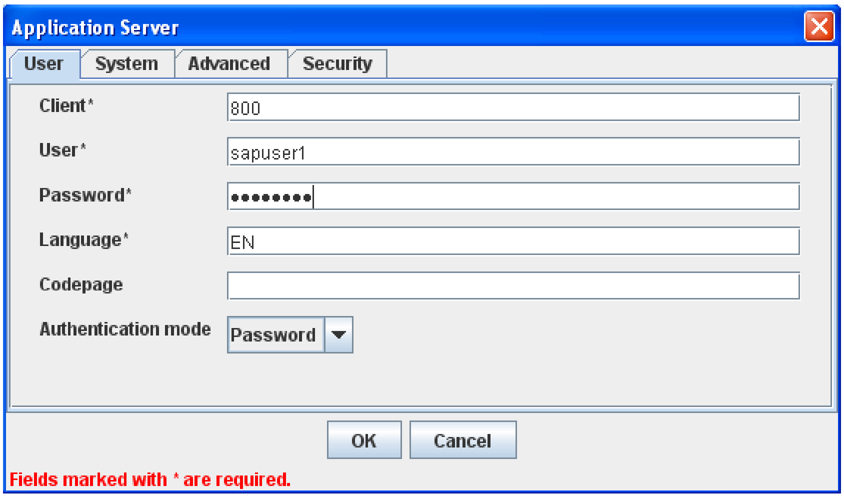


Name: sap1

Description:

Type: Application Server

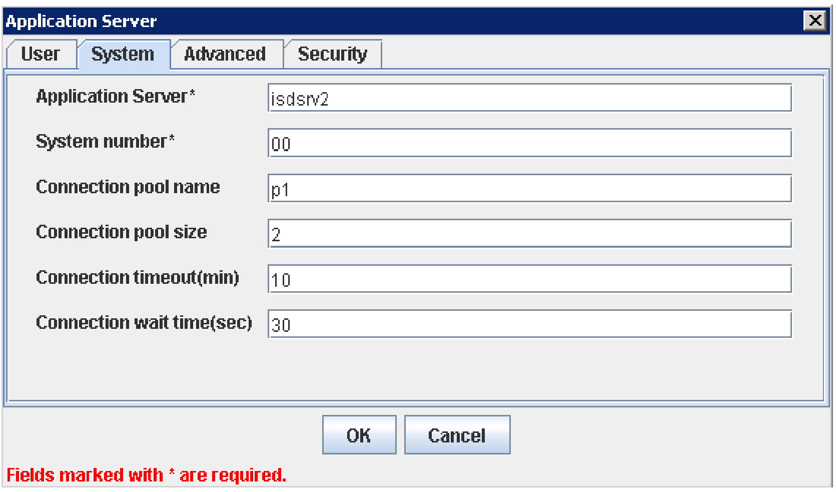
Enter the values under the ***User*** tab.



| | |
|---|---|
| Client* | 800 |
| User* | sapuser1 |
| Password* | •••••••• |
| Language* | EN |
| Codepage | |
| Authentication mode | Password |

Fields marked with * are required.

Enter the values for the ***system*** tab.

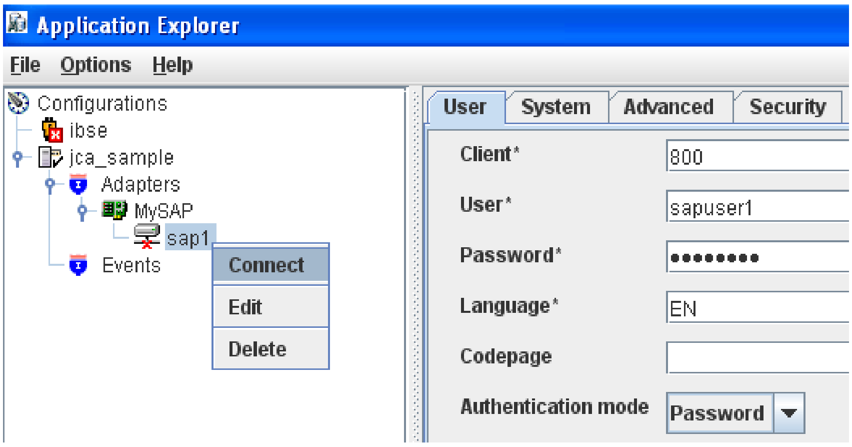


| | |
|---|---|
| Application Server* | isdsrv2 |
| System number* | 00 |
| Connection pool name | p1 |
| Connection pool size | 2 |
| Connection timeout(min) | 10 |
| Connection wait time(sec) | 30 |

Fields marked with * are required.

Under the ***Advanced*** and ***Security*** tab, leave the default values.

After creating the target, click on the target. Enter the password on the right pane, then right click on the target and select ***connect*** to connect to the target.



Client* 800

User* sapuser1

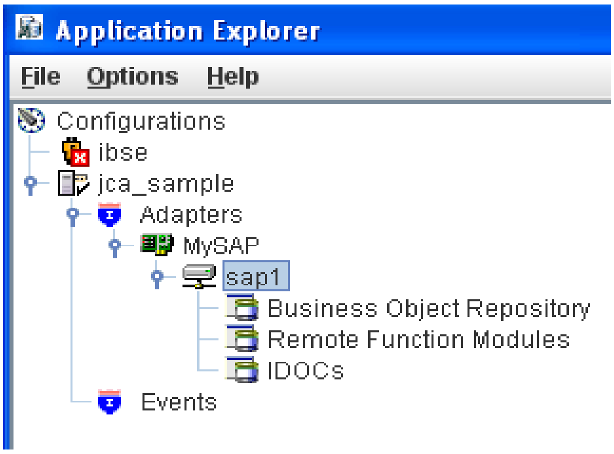
Password* ••••••••

Language* EN

Codepage

Authentication mode Password

After connecting to the target, nodes for ***Business Object Repository, Remote Function Modules*** and ***IDOCs*** will be shown in the Application Explorer.

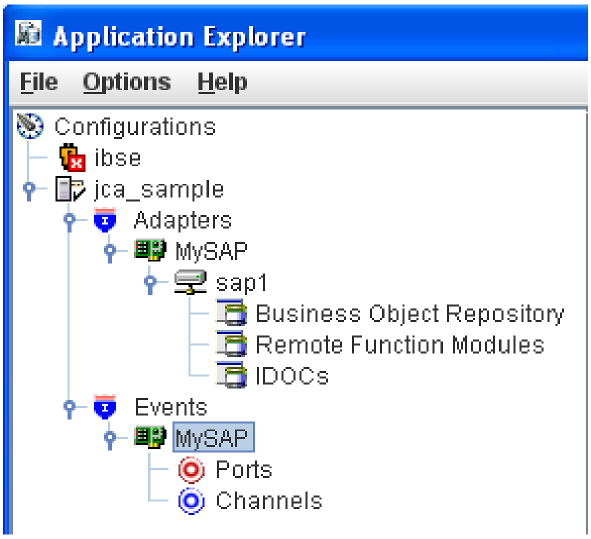


Create one another target for the MySAP adapter for a different SAP R/3 system. Follow the steps in the Creation of the Adapter Target section. This is the target SAP system, which will respond for the requests from the source SAP system. For identification purpose, we can call this target system as sap2. In real life scenario, the target SAP system could be different EIS other than SAP.

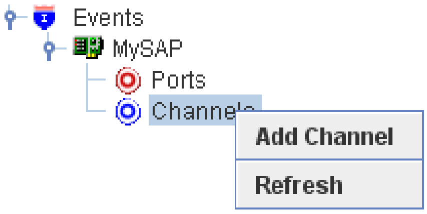
### Configuration of the Channel

**Channel establishes the connection between SAP R/3 and adapter and facilitates to receive the SAP R/3 published messages.**

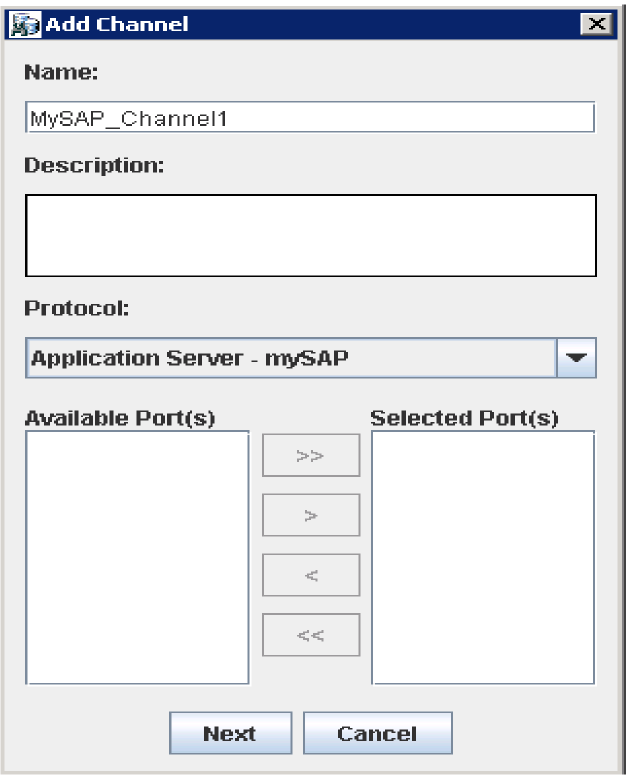
Select the ***Events*** tab and then select the ***MySAP*** node within the ***events*** node. Note that the channel configuration is for the source SAP System (sap1 target in the Application explorer).



Select the ***Channels*** under the ***MySAP*** node and then right click on the ***channel*** to ***Add Channel***.



***Add Channel*** window shows up.



Add Channel

Name: MySAP_Channel1

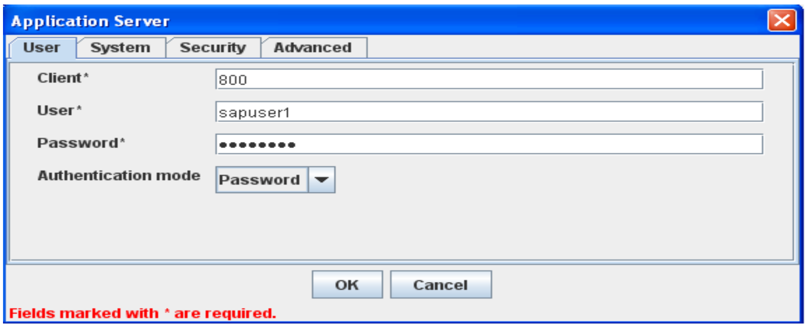
Description:

Protocol: Application Server - mySAP

Provide the following information:
**a.**Enter a name for the channel, for example, MySAP_Channel1.
**b.**Enter a brief description (optional).
**c.**From the Protocol list, select Application Server - mySAP.

Then click the ***Next*** button at the bottom of the window.

Following window shows up. Enter the details under the User tab as shown below:



Application Server

Client* 800

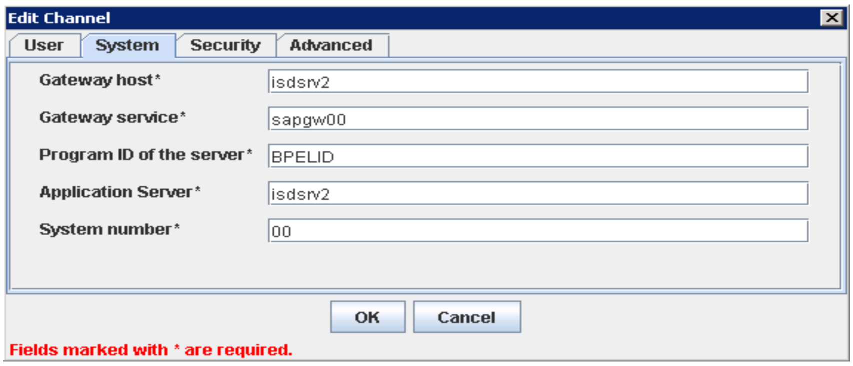
User* sapuser1

Password* ●●●●●●●●

Authentication mode Password

Fields marked with * are required.

Enter the details under the ***system*** tab as shown below:



Edit Channel

Gateway host* isdsrv2

Gateway service* sapgw00

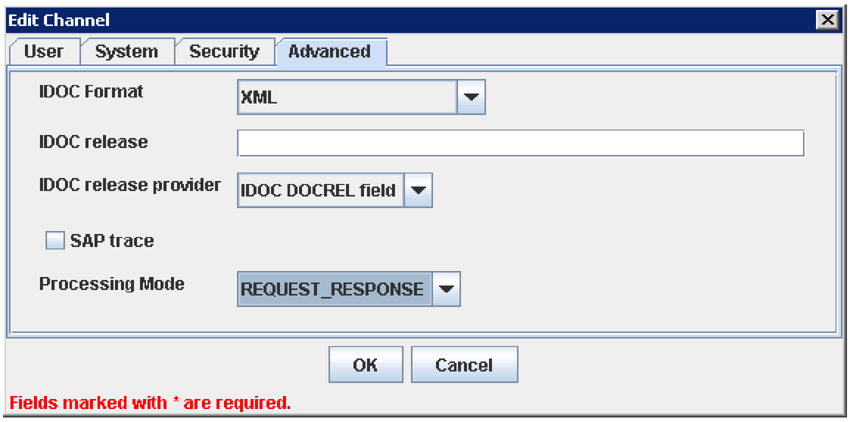
Program ID of the server* BPELID

Application Server* isdsrv2

System number* 00

Fields marked with * are required.

Leave the default values under the ***security*** tab. Under the ***Advanced*** tab, enter the values as shown below:



Edit Channel

IDOC Format XML

IDOC release

IDOC release provider IDOC DOCREL field

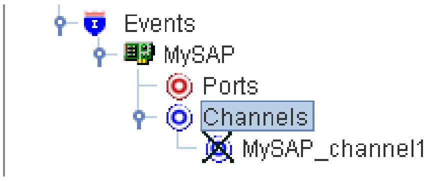
□ SAP trace

Processing Mode REQUEST_RESPONSE

Fields marked with * are required.

Then click the ***OK*** button.

The channel that was created shows as like below in the Application Explorer. The channel appears under the channels node in the left pane. An X over the icon indicates that the channel is currently stopped.

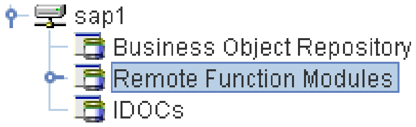


Do not start the channel, as it is managed by BPEL PM Server.
If you start the channel for testing and debugging purposes, stop it before runtime.

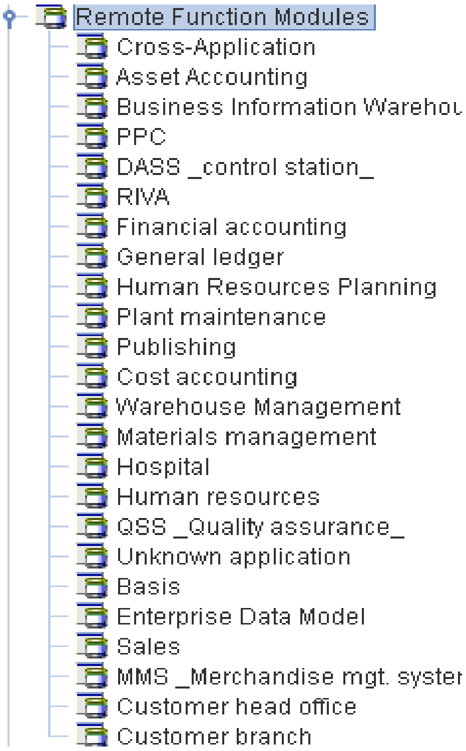
### Generating WSDL for RFC inbound

After you create a channel and verify that it is not started, you must generate WSDL for the event using Application Explorer.

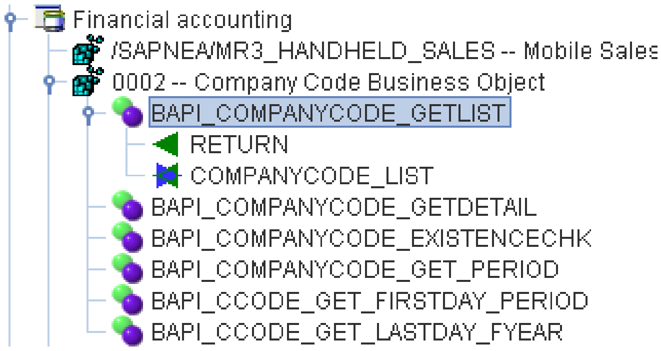
Go to the adapter target (sap1) and select the ***Remote Function Modules*** (RFC) node.



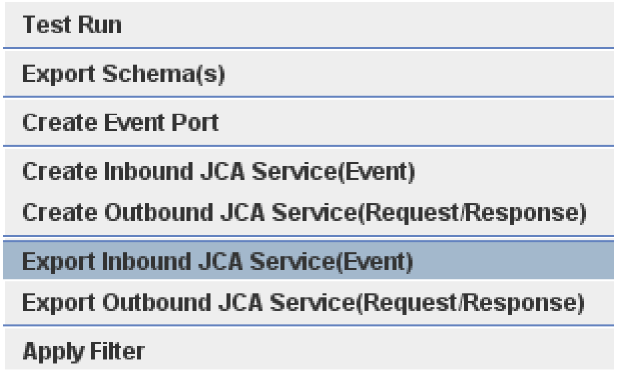
RFCs node explode and the list of objects shows up:



Scroll down and select the ***Financial Accounting -> 0002 – Company Code Business Object – BAPI_COMPANYCODE_GETLIST***.


Financial accounting
/SAPNEA/MR3_HANDHELD_SALES -- Mobile Sales
0002 -- Company Code Business Object
BAPI_COMPANYCODE_GETLIST
RETURN
COMPANYCODE_LIST
BAPI_COMPANYCODE_GETDETAIL
BAPI_COMPANYCODE_EXISTENCECHK
BAPI_COMPANYCODE_GET_PERIOD
BAPI_CCODE_GET_FIRSTDAY_PERIOD
BAPI_CCODE_GET_LASTDAY_FYEAR

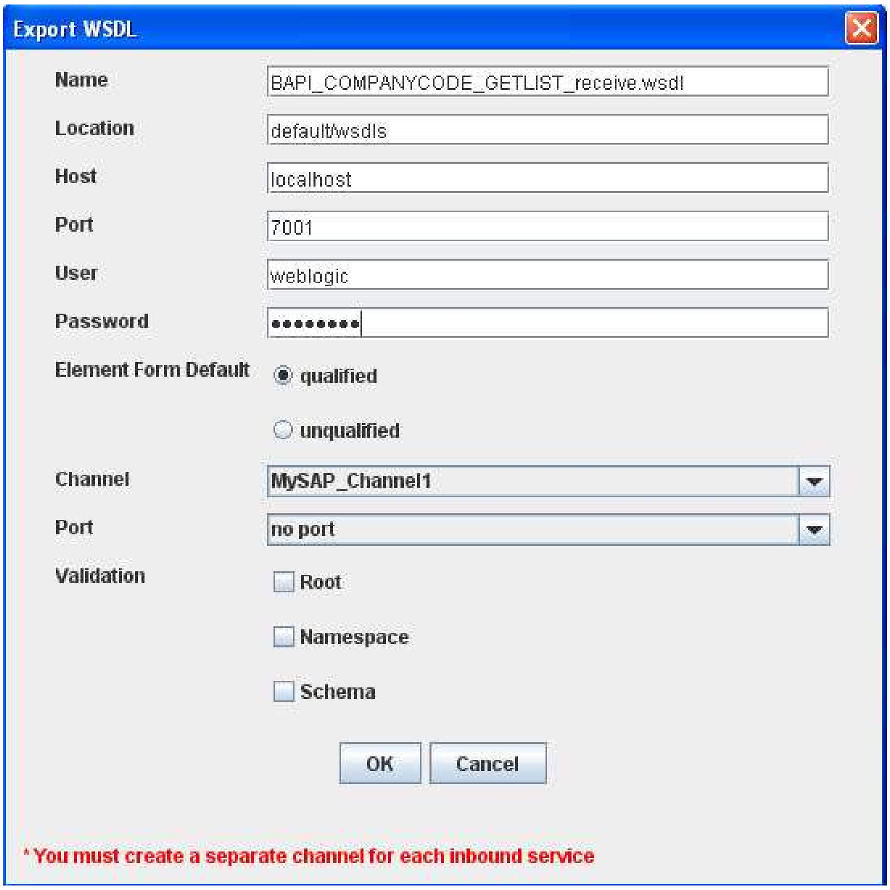
Right click and select the ***Export Inbound JCA Service (Event)*** option.


Test Run
Export Schema(s)
Create Event Port
Create Inbound JCA Service(Event)
Create Outbound JCA Service(Request/Response)
Export Inbound JCA Service(Event)
Export Outbound JCA Service(Request/Response)
Apply Filter

Window for ***Export WSDL*** shows up. Name of the WSDL shows up automatically. Select following:

Location - specify the OSB location for publishing the Inbound wsdl
Host - host name where the wsdl to be published
Port - port where WLS is listening.
User - weblogic
Password - weblogic

Element form Default - Qualified.
Channel - use the one that was created in step 10.
Port - No Port
Validation - Do not select anything.



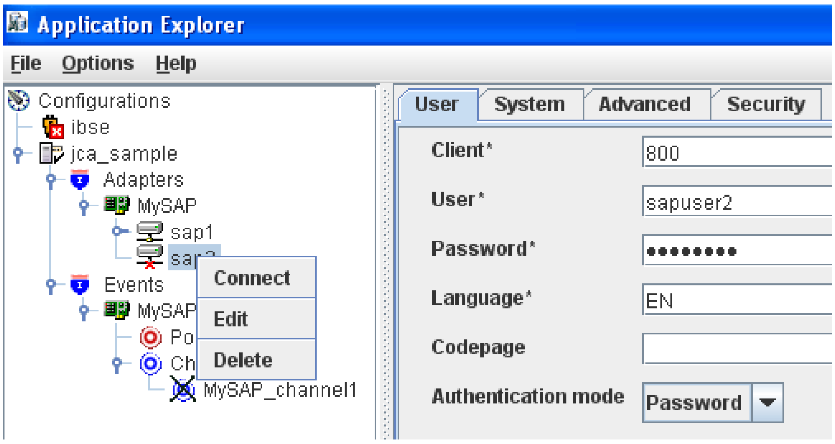
Export WSDL

Name: BAPI_COMPANYCODE_GETLIST_receive.wsdl
Location: default/wsdls
Host: localhost
Port: 7001
User: weblogic
Password: ••••••••
Element Form Default: ● qualified ○ unqualified
Channel: MySAP_Channel1
Port: no port
Validation: □ Root □ Namespace □ Schema

* You must create a separate channel for each inbound service

Then click the ***OK*** button. Now, the WSDL would be created and will be stored in a folder accessible for the JDeveloper.

Connect to the second SAP target (SAP2). This is the target SAP system



Client* 800

User* sapuser2

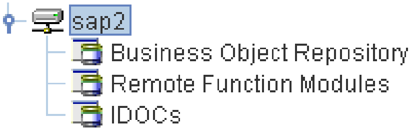
Password* ••••••••

Language* EN

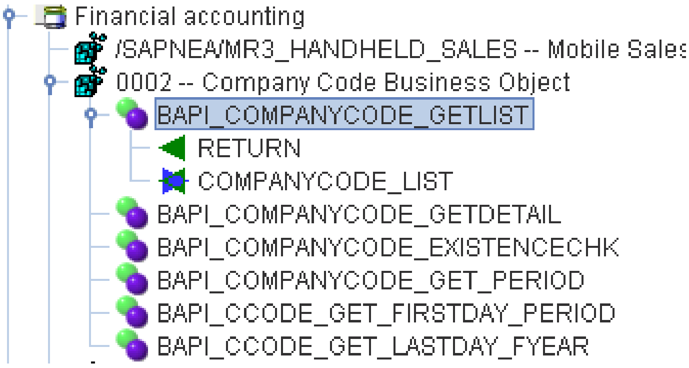
Codepage

Authentication mode Password

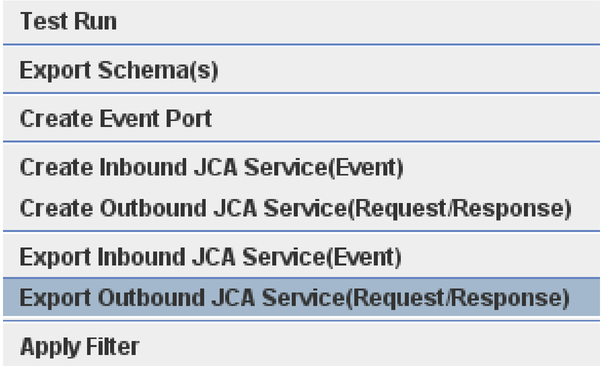
After connecting to the target, you will see the following:



Expand the Remote Function Modules to select the object ***Financial Accounting -> 0002 – Company Code Business Object – BAPI_COMPANYCODE_GETLIST***.

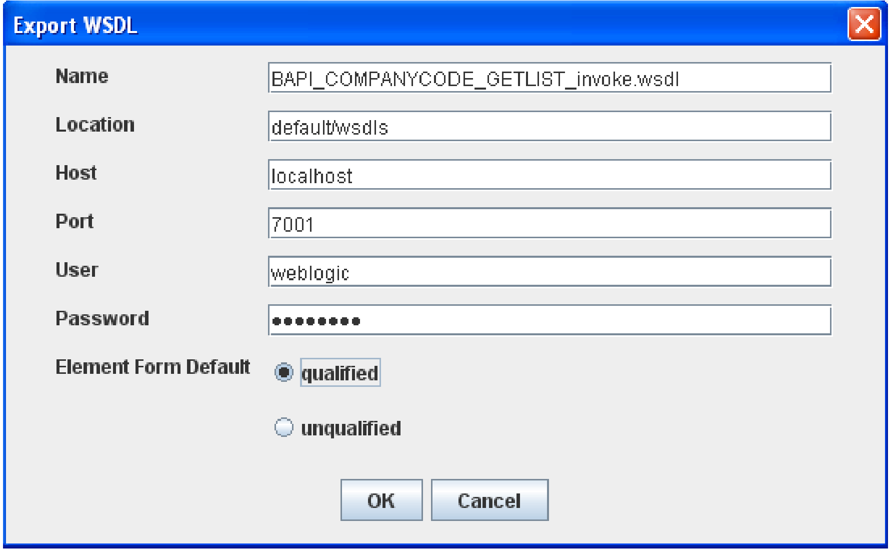

Financial accounting
/SAPNEA/MR3_HANDHELD_SALES -- Mobile Sales
0002 -- Company Code Business Object
BAPI_COMPANYCODE_GETLIST
RETURN
COMPANYCODE_LIST
BAPI_COMPANYCODE_GETDETAIL
BAPI_COMPANYCODE_EXISTENCECHK
BAPI_COMPANYCODE_GET_PERIOD
BAPI_CCODE_GET_FIRSTDAY_PERIOD
BAPI_CCODE_GET_LASTDAY_FYEAR

Right click and select ***Export Outbound JCA Service(Request / Response)*** to generate the WSDL for the outbound operation.


Test Run
Export Schema(s)
Create Event Port
Create Inbound JCA Service(Event)
Create Outbound JCA Service(Request/Response)
Export Inbound JCA Service(Event)
Export Outbound JCA Service(Request/Response)
Apply Filter

***Export WSDL*** dialog box opens and select the qualified WSDL option

| | | |
|---|---|---|
| Location | - | specify the OSB location for publishing the Inbound wsdl |
| Host | - | host name where the wsdl to be published |
| Port | - | port where WLS is listening. |
| User | - | weblogic |
| Password | - | weblogic |



| | |
|---|---|
| Name | BAPI_COMPANYCODE_GETLIST_invoke.wsdl |
| Location | default/wsdls |
| Host | localhost |
| Port | 7001 |
| User | weblogic |
| Password | •••••••• |
| Element Form Default | ● qualified<br>○ unqualified |

Click the ***OK*** button. The created WSDL can now be accessed from the JDeveloper.

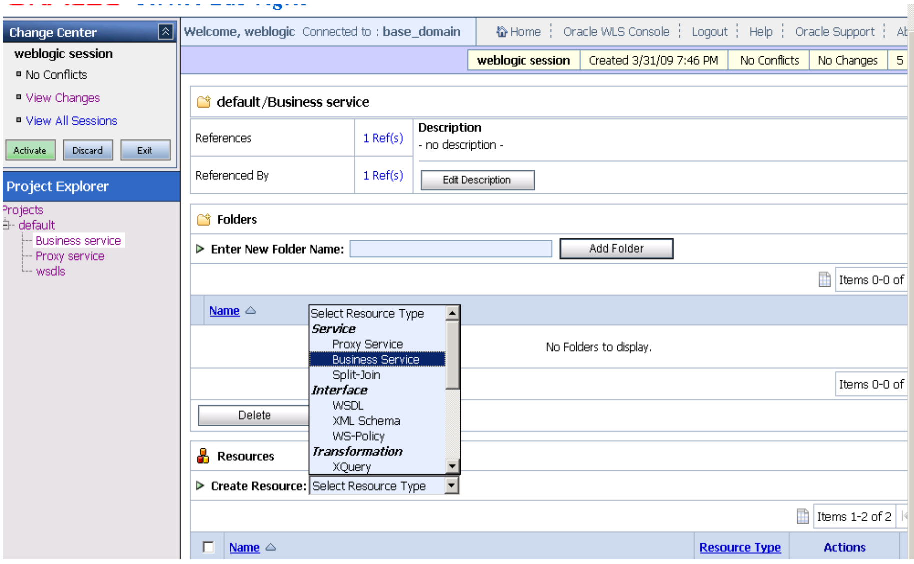
Make sure that the channel is stopped. It should not be up and running. Then Close the Application Explorer.

Recycle the OSB. This is required for the OSB to read the adapter repository to understand the new changes.

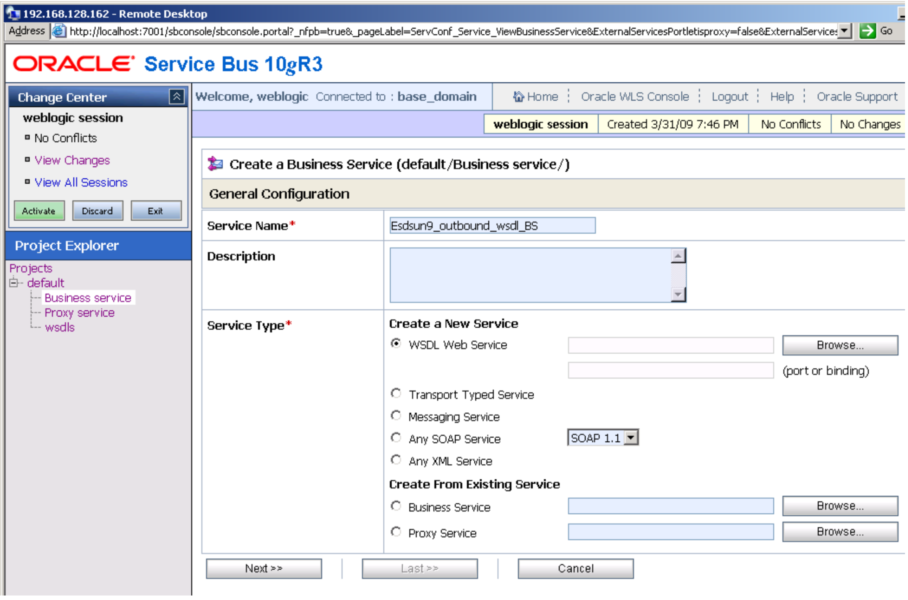
## Configuring Synchronous Service in Oracle Service Bus

### Creation of Wsdl Type Business Service

Login to the OSB console. Using the ***Project explorer*** create folders by name "Business service" and "Proxy service".
Select the ***Business Service*** folder and Select the ***Business Service*** from the ***Create Resource*** drop down list under ***Resources***.



Enter a name for the ***Service name***. Enter the value for ***Description*** as required. Select the ***Service type*** as ***WSDL web service*** and click on ***Browse*** button.



Create a Business Service (default/Business service/)

General Configuration

Service Name*: Esdsun9_outbound_wsdl_BS

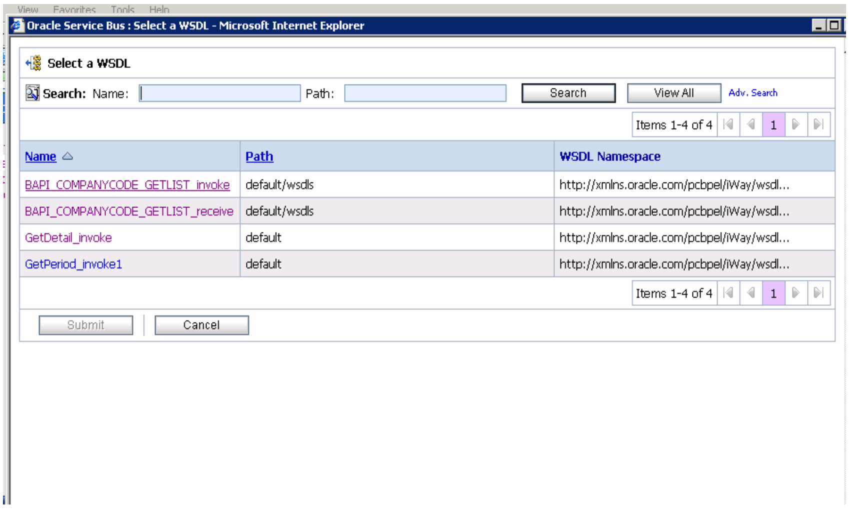
Description:

Service Type*:

Create a New Service
- ● WSDL Web Service — Browse... (port or binding)
- ○ Transport Typed Service
- ○ Messaging Service
- ○ Any SOAP Service — SOAP 1.1
- ○ Any XML Service

Create From Existing Service
- ○ Business Service — Browse...
- ○ Proxy Service — Browse...

From the list of WSDLs, Select the outbound wsdl *BAPI_COMPANYCODE_GETLIST_INVOKE* and click the ***Submit*** button.



View Favorites Tools Help
Oracle Service Bus : Select a WSDL - Microsoft Internet Explorer
Search
View All
Adv. Search
Submit
Cancel

Select a WSDL

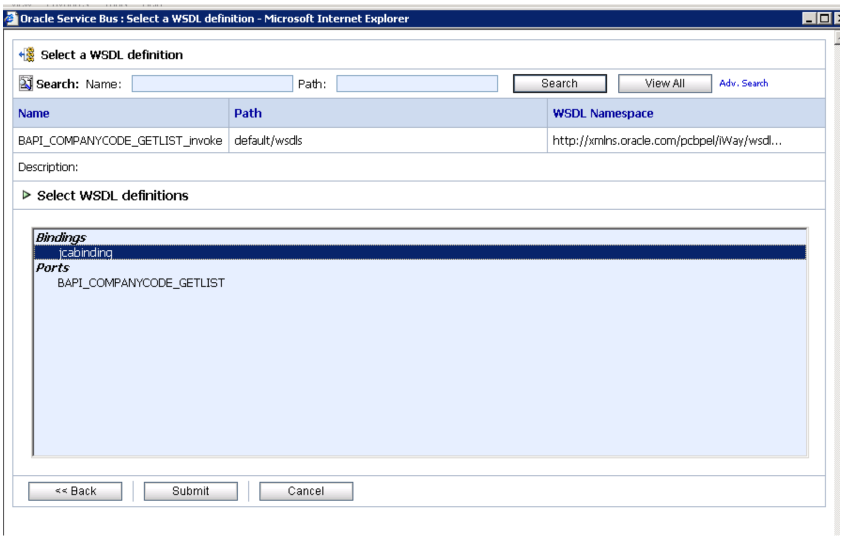
Search: Name: Path:

Items 1-4 of 4 1

| Name | Path | WSDL Namespace |
|---|---|---|
| BAPI_COMPANYCODE_GETLIST_invoke | default/wsdls | http://xmlns.oracle.com/pcbpel/iWay/wsdl... |
| BAPI_COMPANYCODE_GETLIST_receive | default/wsdls | http://xmlns.oracle.com/pcbpel/iWay/wsdl... |
| GetDetail_invoke | default | http://xmlns.oracle.com/pcbpel/iWay/wsdl... |
| GetPeriod_invoke1 | default | http://xmlns.oracle.com/pcbpel/iWay/wsdl... |

Items 1-4 of 4 1

Select ***jcabinding*** for ***bindings*** under ***Select WSDL definitions*** and click the ***Submit*** button.



Oracle Service Bus : Select a WSDL definition - Microsoft Internet Explorer
Search
View All
Adv. Search
<< Back
Submit
Cancel

Select a WSDL definition

Search: Name: Path:

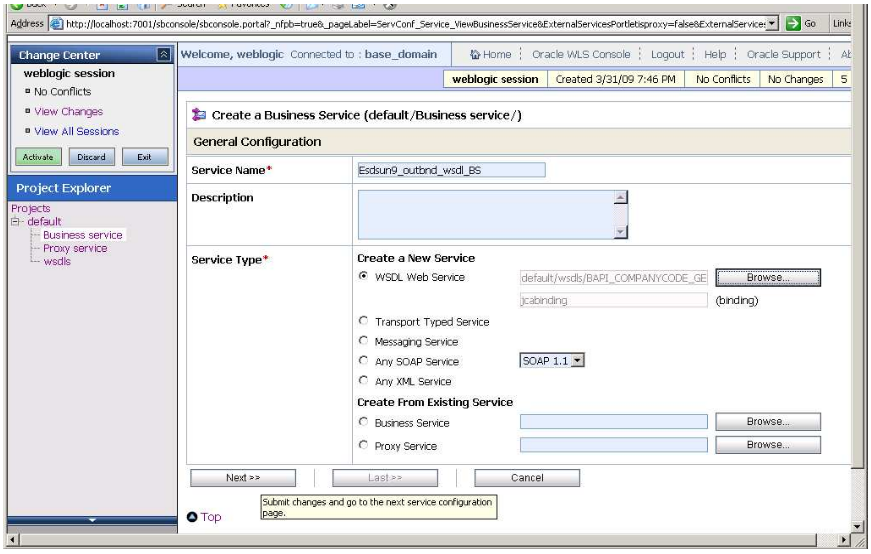
| Name | Path | WSDL Namespace |
|---|---|---|
| BAPI_COMPANYCODE_GETLIST_invoke | default/wsdls | http://xmlns.oracle.com/pcbpel/iWay/wsdl... |

Description:

Select WSDL definitions

*Bindings*
jcabinding
*Ports*
BAPI_COMPANYCODE_GETLIST

Now, you will be taken back to the first screen of the Create a Business Service. Click the ***Next*** button now.



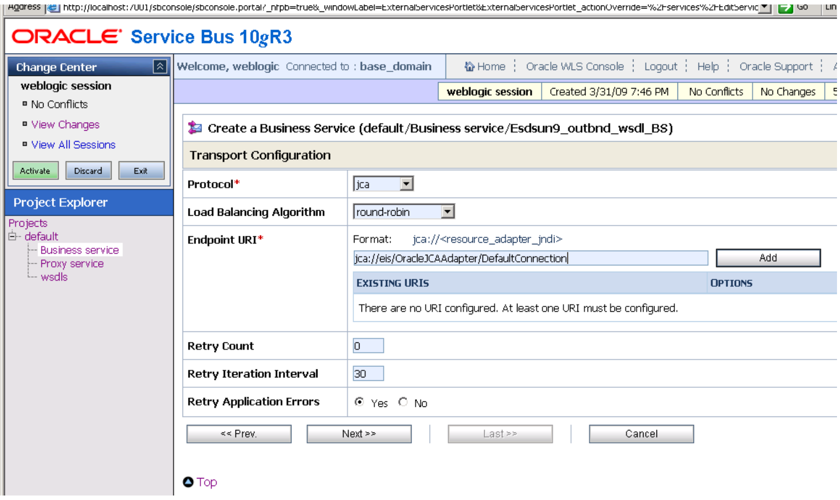
Create a Business Service (default/Business service/)

General Configuration

| | |
|---|---|
| Service Name* | Esdsun9_outbnd_wsdl_BS |
| Description | |
| Service Type* | Create a New Service<br>● WSDL Web Service default/wsdls/BAPI_COMPANYCODE_GE<br>jcabinding (binding)<br>○ Transport Typed Service<br>○ Messaging Service<br>○ Any SOAP Service SOAP 1.1<br>○ Any XML Service<br>Create From Existing Service<br>○ Business Service<br>○ Proxy Service |

Submit changes and go to the next service configuration page.

Select ***jca*** for the ***Protocol*** from the drop down box. Leave ***Load Balancing Algorithm*** to the default. For the ***Endpoint URI***, enter the jndi value ***eis/OracleJCAAdapter/DefaultConnection*** and click on ***Add*** button. The value for the jndi has been taken from the outbound wsdl. Click the ***Next*** button now.

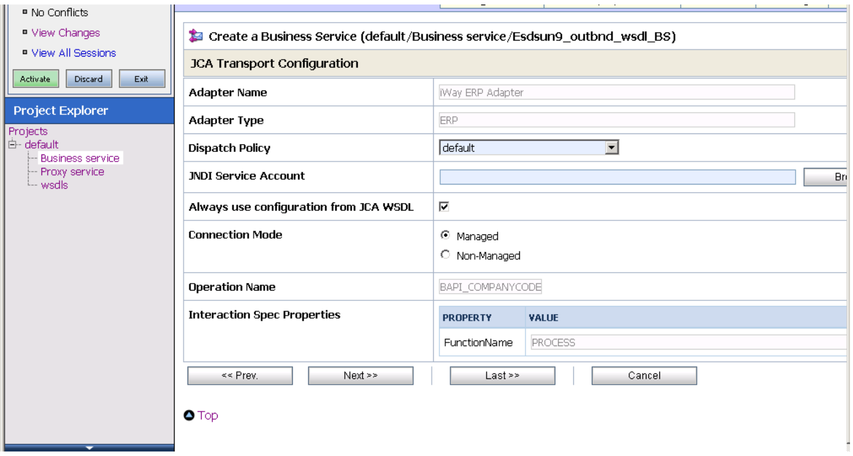


Create a Business Service (default/Business service/Esdsun9_outbnd_wsdl_BS)

Transport Configuration

| | |
|---|---|
| Protocol* | jca |
| Load Balancing Algorithm | round-robin |
| Endpoint URI* | Format: jca://<resource_adapter_jndi><br>jca://eis/OracleJCAAdapter/DefaultConnection<br>EXISTING URIS OPTIONS<br>There are no URI configured. At least one URI must be configured. |
| Retry Count | 0 |
| Retry Iteration Interval | 30 |
| Retry Application Errors | ● Yes ○ No |

Make sure that the field ***Always use configuration from JCA WSDL*** is selected. The ***connection mode*** is set to ***Managed***. Then click the ***Next*** button.

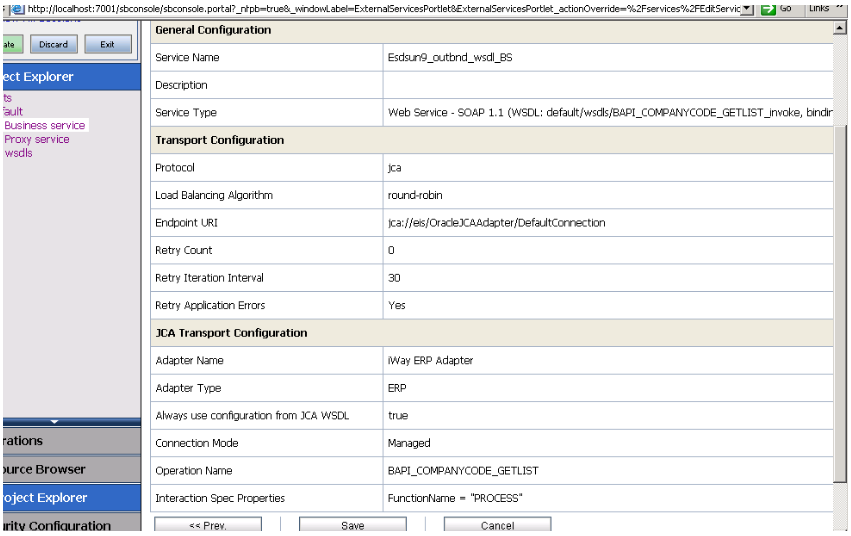


Create a Business Service (default/Business service/Esdsun9_outbnd_wsdl_BS)

JCA Transport Configuration

| | |
|---|---|
| Adapter Name | iWay ERP Adapter |
| Adapter Type | ERP |
| Dispatch Policy | default |
| JNDI Service Account | |
| Always use configuration from JCA WSDL | ☑ |
| Connection Mode | ● Managed<br>○ Non-Managed |
| Operation Name | BAPI_COMPANYCODE |
| Interaction Spec Properties | PROPERTY: FunctionName — VALUE: PROCESS |

Verify all the details in the page.  Then, click the ***Save*** button.

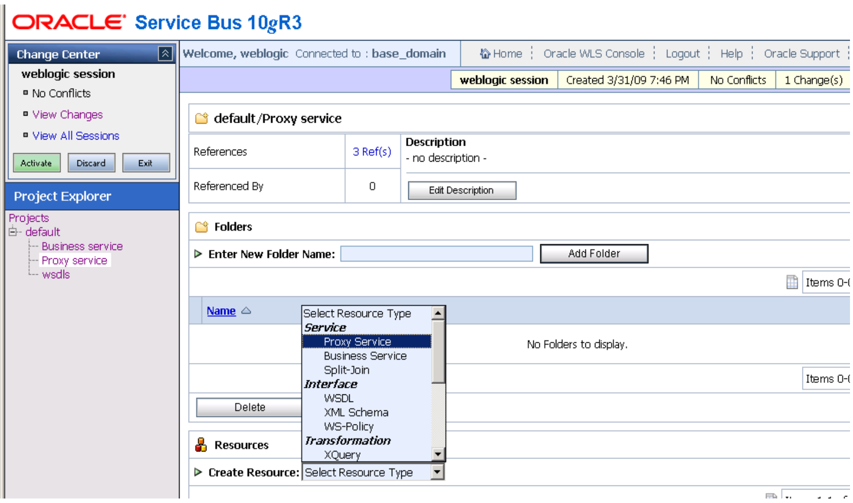


http://localhost:7001/sbconsole/sbconsole.portal?_nfpb=true&_windowLabel=ExternalServicesPortlet&ExternalServicesPortlet_actionOverride=%2Fservices%2FEditServic

| General Configuration | |
|---|---|
| Service Name | Esdsun9_outbnd_wsdl_BS |
| Description | |
| Service Type | Web Service - SOAP 1.1 (WSDL: default/wsdls/BAPI_COMPANYCODE_GETLIST_invoke, bindir |
| **Transport Configuration** | |
| Protocol | jca |
| Load Balancing Algorithm | round-robin |
| Endpoint URI | jca://eis/OracleJCAAdapter/DefaultConnection |
| Retry Count | 0 |
| Retry Iteration Interval | 30 |
| Retry Application Errors | Yes |
| **JCA Transport Configuration** | |
| Adapter Name | iWay ERP Adapter |
| Adapter Type | ERP |
| Always use configuration from JCA WSDL | true |
| Connection Mode | Managed |
| Operation Name | BAPI_COMPANYCODE_GETLIST |
| Interaction Spec Properties | FunctionName = "PROCESS" |

### Creation of Wsdl Type Proxy Service – Source SAP system

From the ***Project Explorer***, select the folder ***Proxy service***. Select the ***Proxy Service*** from the ***Create Resource*** drop down list.



weblogic session | Created 3/31/09 7:46 PM | No Conflicts | 1 Change(s)

default/Proxy service

| | | |
|---|---|---|
| References | 3 Ref(s) | Description<br>- no description - |
| Referenced By | 0 | |

Folders

Enter New Folder Name:

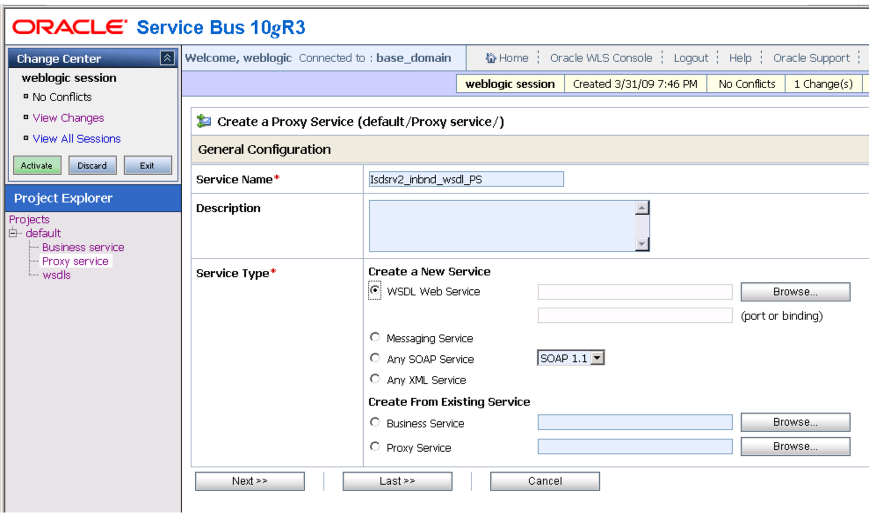
Name

No Folders to display.

Resources

Create Resource: Select Resource Type

Enter a name for the ***Service Name*** and enter appropriate details for the ***Description*** field. Select the ***WSDL Web Service*** for ***Service Type*** and click the ***Browse*** button.



weblogic session | Created 3/31/09 7:46 PM | No Conflicts | 1 Change(s)

Create a Proxy Service (default/Proxy service/)

General Configuration

Service Name* Isdsrv2_inbnd_wsdl_PS

Description

Service Type*

Create a New Service

● WSDL Web Service

(port or binding)

○ Messaging Service

○ Any SOAP Service SOAP 1.1

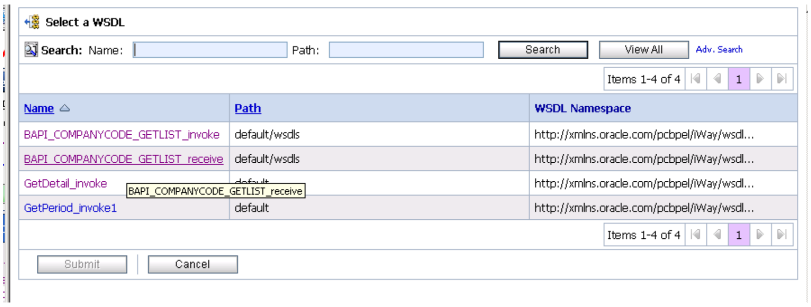
○ Any XML Service

Create From Existing Service

○ Business Service

○ Proxy Service

From the list of WSDLs, select the Inbound Wsdl *BAPI_COMPANYCODE_GETLIST_RECEIVE* and click the ***Submit*** button.



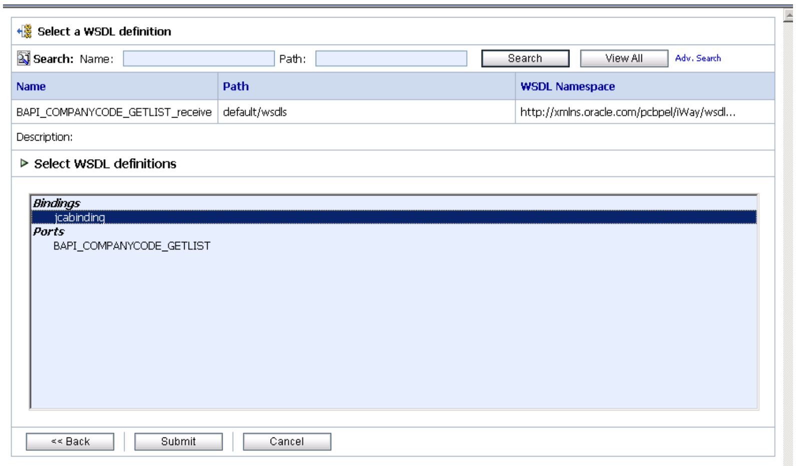
Select a WSDL

Search: Name: Path: Search View All Adv. Search

Items 1-4 of 4

| Name | Path | WSDL Namespace |
|---|---|---|
| BAPI_COMPANYCODE_GETLIST_invoke | default/wsdls | http://xmlns.oracle.com/pcbpel/iWay/wsdl... |
| BAPI_COMPANYCODE_GETLIST_receive | default/wsdls | http://xmlns.oracle.com/pcbpel/iWay/wsdl... |
| GetDetail_invoke | default | http://xmlns.oracle.com/pcbpel/iWay/wsdl... |
| GetPeriod_invoke1 | default | http://xmlns.oracle.com/pcbpel/iWay/wsdl... |

Select ***jcabinding*** for ***Bindings*** under the ***Select WSDL definitions*** and click the ***Submit*** button.



Select a WSDL definition

Search: Name: Path: Search View All Adv. Search

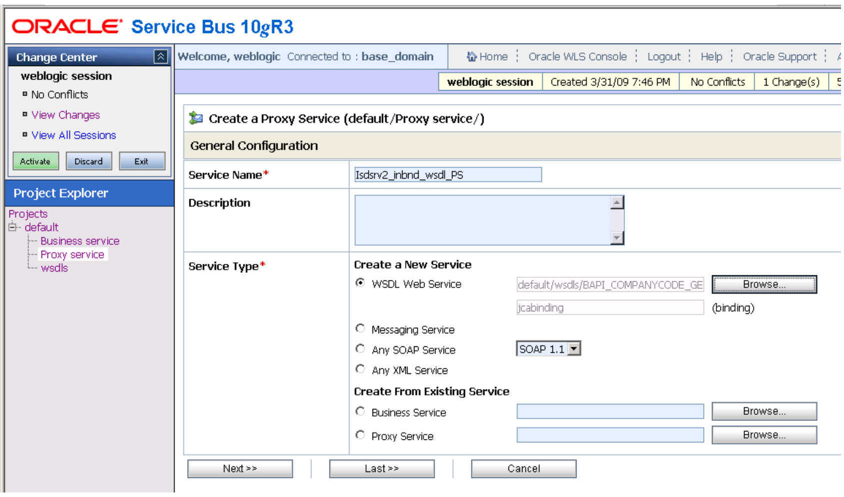
| Name | Path | WSDL Namespace |
|---|---|---|
| BAPI_COMPANYCODE_GETLIST_receive | default/wsdls | http://xmlns.oracle.com/pcbpel/iWay/wsdl... |

Description:

Select WSDL definitions

*Bindings*
jcabinding
*Ports*
BAPI_COMPANYCODE_GETLIST

Now, you will be taken back to the first screen for the Proxy service configuration. Click the ***Next*** button.



Create a Proxy Service (default/Proxy service/)

General Configuration

Service Name* Isdsrv2_inbnd_wsdl_PS

Description

Service Type*

Create a New Service

● WSDL Web Service default/wsdls/BAPI_COMPANYCODE_GE Browse...

jcabinding (binding)

○ Messaging Service

○ Any SOAP Service SOAP 1.1

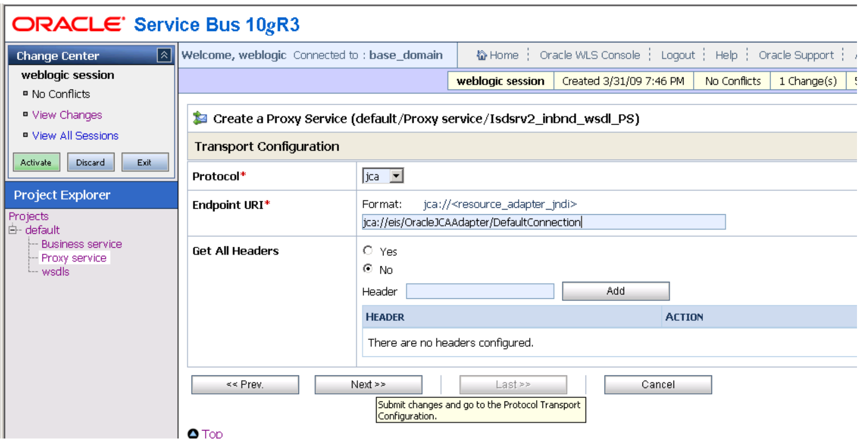
○ Any XML Service

Create From Existing Service

○ Business Service Browse...

○ Proxy Service Browse...

Select ***jca*** for Protocol. For the ***Endpoint URI***, enter the jndi value ***eis/OracleJCAAdapter/DefaultConnection*** and click on ***Add*** button. The value for the jndi has been taken from the inbound wsdl. Click the ***Next*** button now.



Create a Proxy Service (default/Proxy service/Isdsrv2_inbnd_wsdl_PS)

Transport Configuration

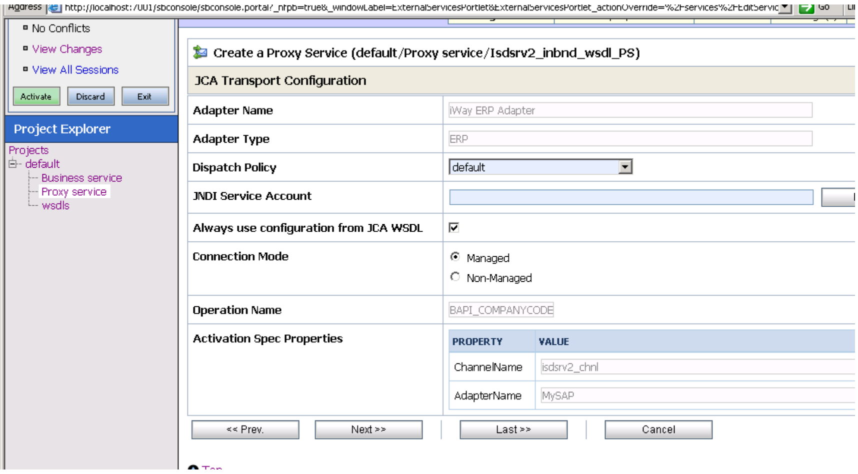
| | |
|---|---|
| Protocol* | jca |
| Endpoint URI* | Format: jca://<resource_adapter_jndi><br>jca://eis/OracleJCAAdapter/DefaultConnection |
| Get All Headers | ○ Yes<br>● No<br>Header [ ] Add |

| HEADER | ACTION |
|---|---|
| There are no headers configured. | |

<< Prev. | Next >> | Last >> | Cancel

Submit changes and go to the Protocol Transport Configuration.

Make sure that the field ***Always use configuration from JCA WSDL*** is selected. The ***connection mode*** is set to ***Managed***. Then click the ***Next*** button.



Address http://localhost:7001/sbconsole/sbconsole.portal?_nfpb=true&_windowLabel=ExternalServicesPortlet&ExternalServicesPortlet_actionOverride=%2Fservices%2FEditServic
Go
No Conflicts
View Changes
View All Sessions
Activate
Discard
Exit
Project Explorer
Projects
default
Business service
Proxy service
wsdls
Top

Create a Proxy Service (default/Proxy service/Isdsrv2_inbnd_wsdl_PS)

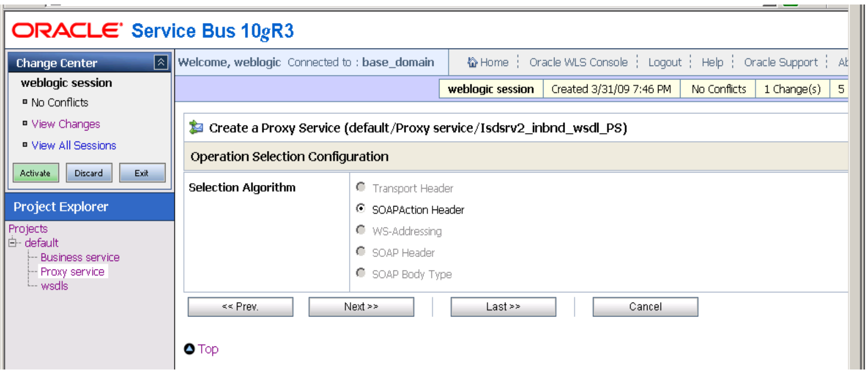
JCA Transport Configuration

| | |
|---|---|
| Adapter Name | iWay ERP Adapter |
| Adapter Type | ERP |
| Dispatch Policy | default |
| JNDI Service Account | |
| Always use configuration from JCA WSDL | ☑ |
| Connection Mode | ● Managed<br>○ Non-Managed |
| Operation Name | BAPI_COMPANYCODE |
| Activation Spec Properties | |

| PROPERTY | VALUE |
|---|---|
| ChannelName | isdsrv2_chnl |
| AdapterName | MySAP |

<< Prev. | Next >> | Last >> | Cancel

Leave the default value and click on ***Next*** button.

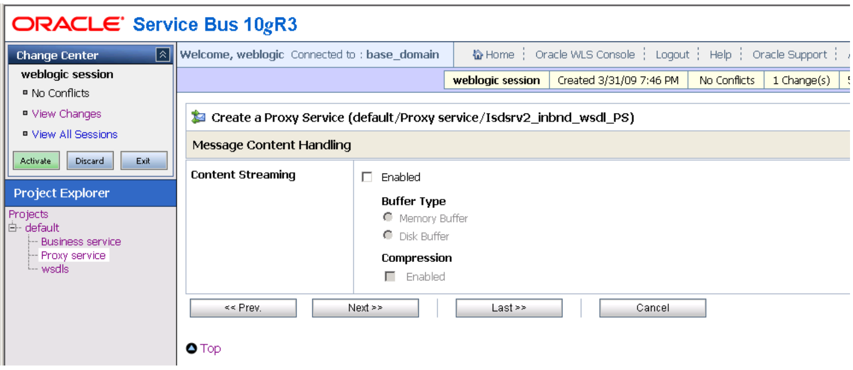


Create a Proxy Service (default/Proxy service/Isdsrv2_inbnd_wsdl_PS)

Operation Selection Configuration

Selection Algorithm
○ Transport Header
● SOAPAction Header
○ WS-Addressing
○ SOAP Header
○ SOAP Body Type

Click the ***Next*** button.

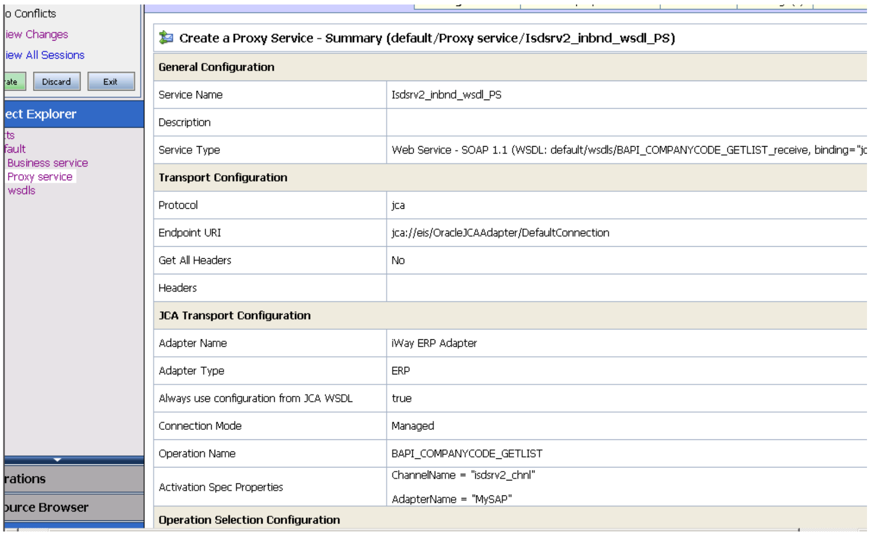


Create a Proxy Service (default/Proxy service/Isdsrv2_inbnd_wsdl_PS)

Message Content Handling

Content Streaming
□ Enabled
Buffer Type
○ Memory Buffer
○ Disk Buffer
Compression
□ Enabled

Verify the details and click the ***Save*** button.

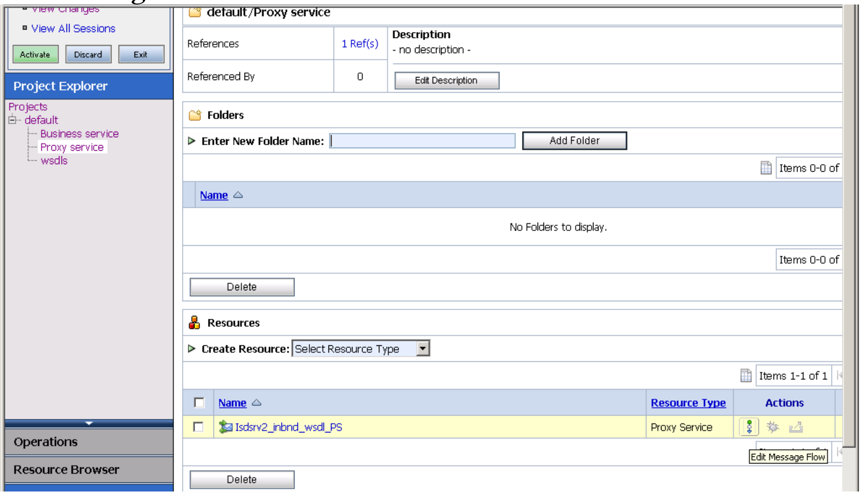


Create a Proxy Service - Summary (default/Proxy service/Isdsrv2_inbnd_wsdl_PS)

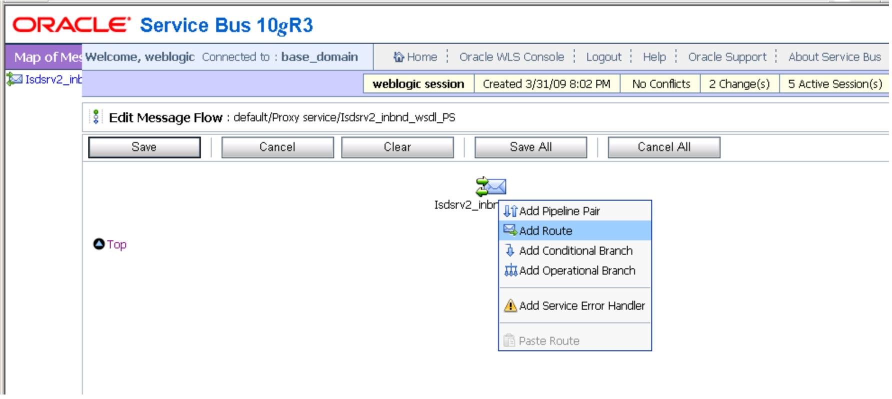
| | |
|---|---|
| **General Configuration** | |
| Service Name | Isdsrv2_inbnd_wsdl_PS |
| Description | |
| Service Type | Web Service - SOAP 1.1 (WSDL: default/wsdls/BAPI_COMPANYCODE_GETLIST_receive, binding="jc |
| **Transport Configuration** | |
| Protocol | jca |
| Endpoint URI | jca://eis/OracleJCAAdapter/DefaultConnection |
| Get All Headers | No |
| Headers | |
| **JCA Transport Configuration** | |
| Adapter Name | iWay ERP Adapter |
| Adapter Type | ERP |
| Always use configuration from JCA WSDL | true |
| Connection Mode | Managed |
| Operation Name | BAPI_COMPANYCODE_GETLIST |
| Activation Spec Properties | ChannelName = "isdsrv2_chnl"<br>AdapterName = "MySAP" |
| **Operation Selection Configuration** | |

### Configuring the Pipeline

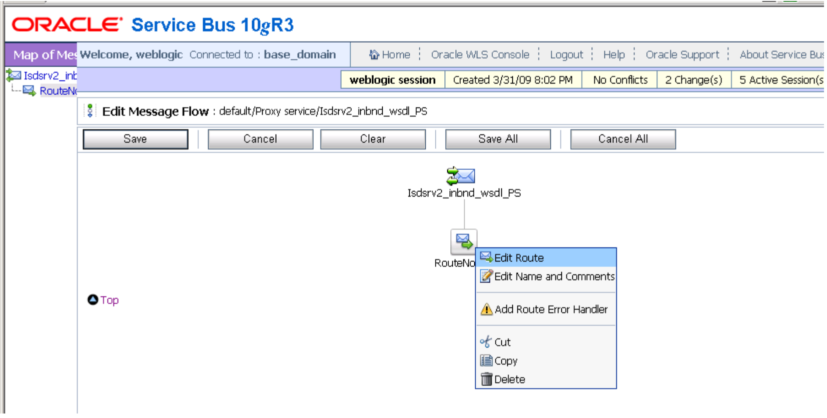
Select the Proxy Service that has been created already and click on the Action for ***Edit Message flow.***



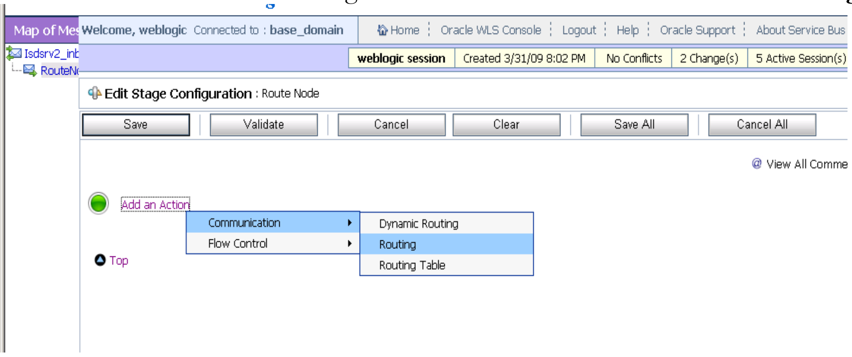
A new page opens for ***Edit Message flow***. Select the proxy service and right click to ***Add Route*** in the Proxy Service.



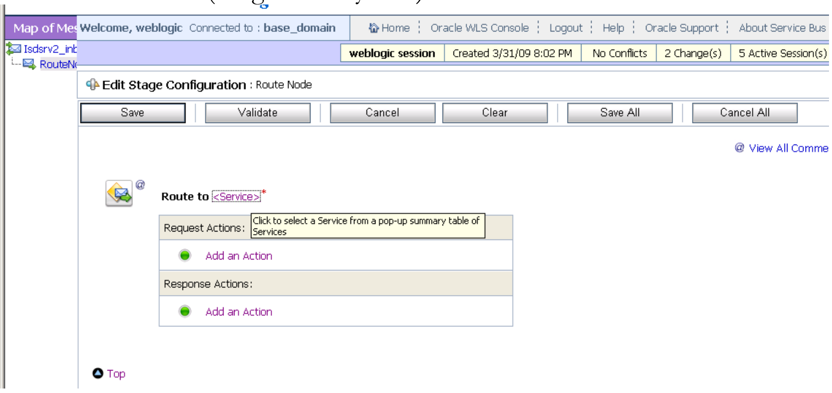
Select the ***RouteNode*** and right click to select ***Edit Route.***



Select the ***Add an Action*** and right click to select ***Communication -> Routing.***

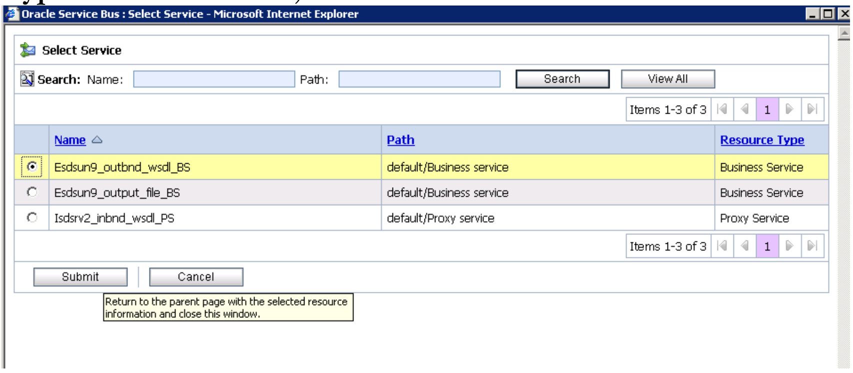


Now, click the <***Service***> link to select the wsdl based business service created for outbound wsdl (Target SAP system).



Click to select a Service from a pop-up summary table of Services

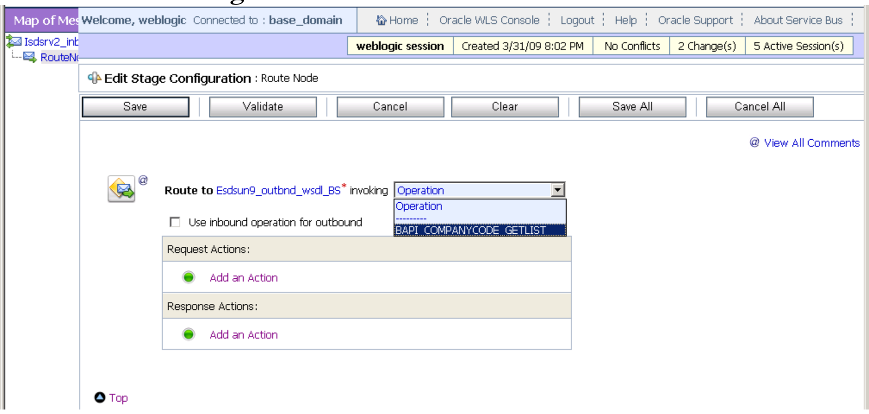
Select the Business Service that was created earlier (section **Creation of Wsdl Type Business Service**) and click the ***Submit*** button.



| | Name | Path | Resource Type |
|---|---|---|---|
| ● | Esdsun9_outbnd_wsdl_BS | default/Business service | Business Service |
| ○ | Esdsun9_output_file_BS | default/Business service | Business Service |
| ○ | Isdsrv2_inbnd_wsdl_PS | default/Proxy service | Proxy Service |

Return to the parent page with the selected resource information and close this window.

Now, select the operation as BAPI_COMPANYCODE_GETLIST from the drop down list for ***invoking***.

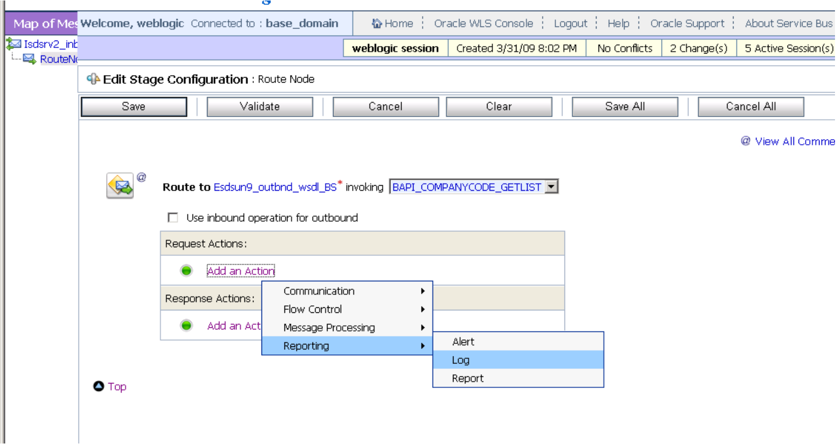


Edit Stage Configuration : Route Node

Route to Esdsun9_outbnd_wsdl_BS* invoking Operation

Operation
---------
BAPI_COMPANYCODE_GETLIST

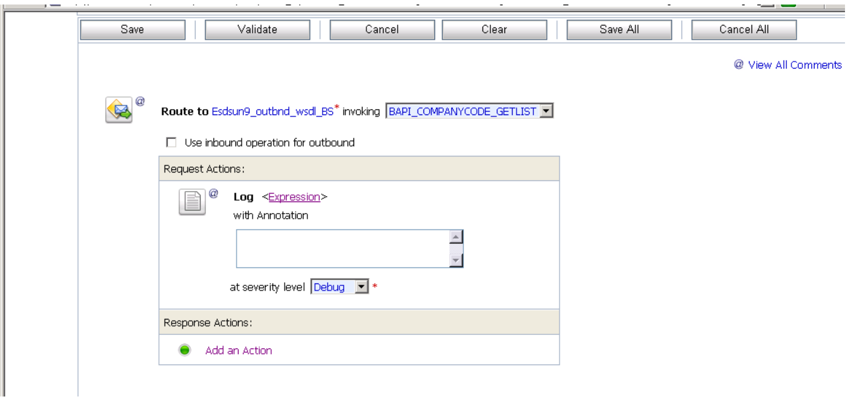
Select ***Add an Action*** in the ***Request Action*** and right click to select ***Reporting -> Log***.



Edit Stage Configuration : Route Node

Route to Esdsun9_outbnd_wsdl_BS* invoking BAPI_COMPANYCODE_GETLIST

Select the link for ***Expression.***

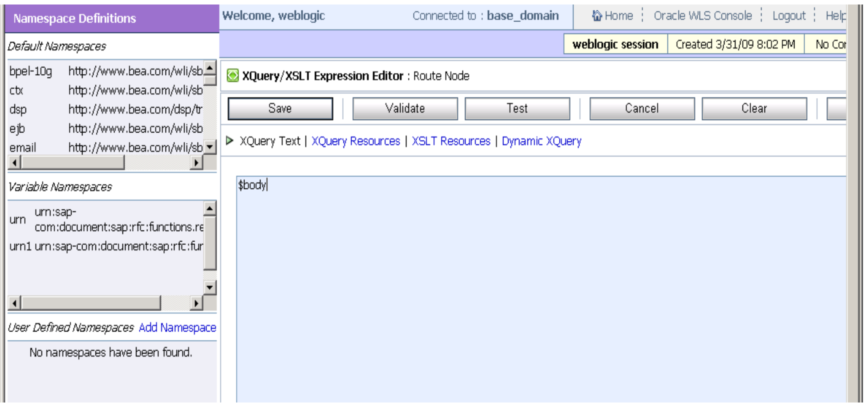


Route to Esdsun9_outbnd_wsdl_BS* invoking BAPI_COMPANYCODE_GETLIST

Log <Expression>
with Annotation

at severity level Debug *

In the ***XQuery Expression Editor*** Page type $body and click on ***Validate*** button to validate the action and Click on ***Save*** button to save the action.



Default Namespaces

| | |
|---|---|
| bpel-10g | http://www.bea.com/wli/sb |
| ctx | http://www.bea.com/wli/sb |
| dsp | http://www.bea.com/dsp/tr |
| ejb | http://www.bea.com/wli/sb |
| email | http://www.bea.com/wli/sb |

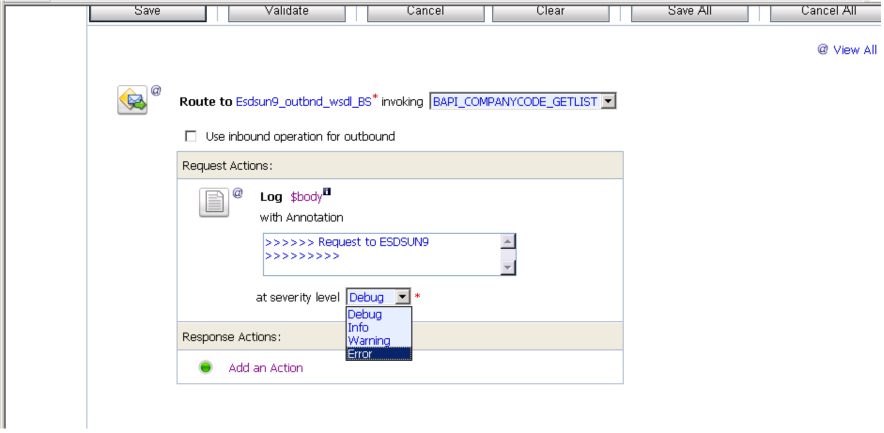
Variable Namespaces

| | |
|---|---|
| urn | urn:sap-com:document:sap:rfc:functions.re |
| urn1 | urn:sap-com:document:sap:rfc:fur |

No namespaces have been found.

```
$body
```

Select ***Error*** for the ***at severity level*** from the drop down list.



Route to Esdsun9_outbnd_wsdl_BS* invoking BAPI_COMPANYCODE_GETLIST

□ Use inbound operation for outbound

Request Actions:

Log $body

with Annotation

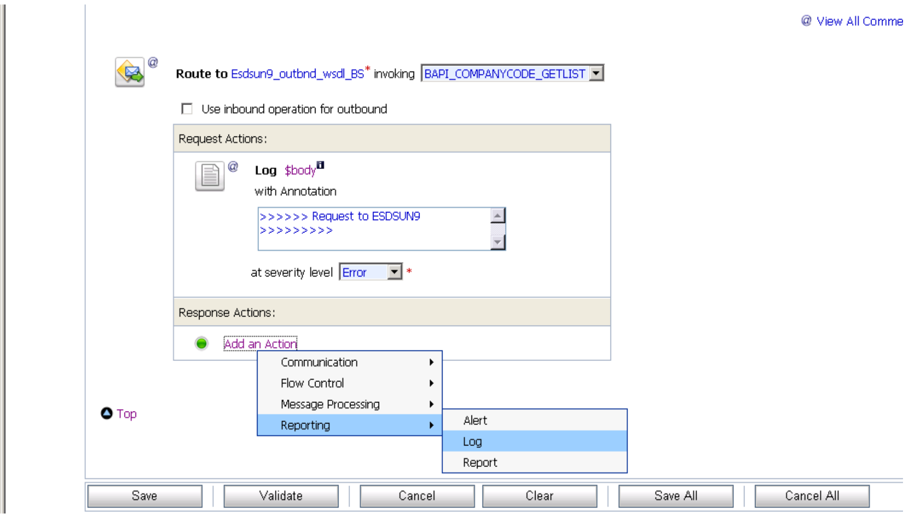
>>>>>> Request to ESDSUN9 >>>>>>>>>

at severity level Debug *

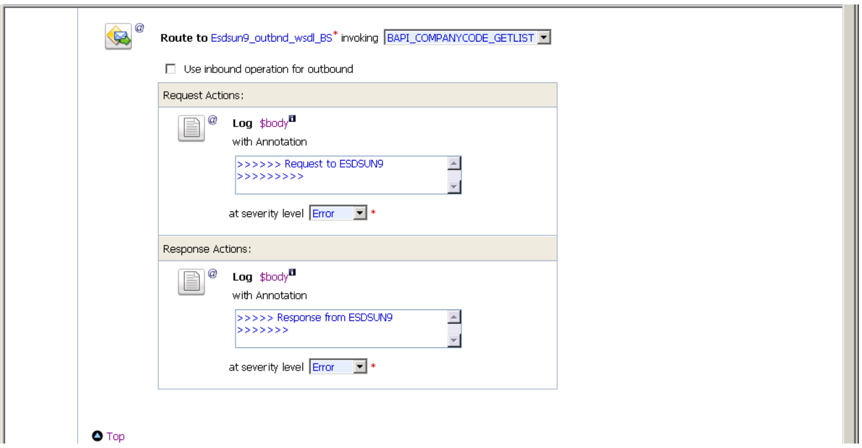
Debug
Info
Warning
Error

Response Actions:

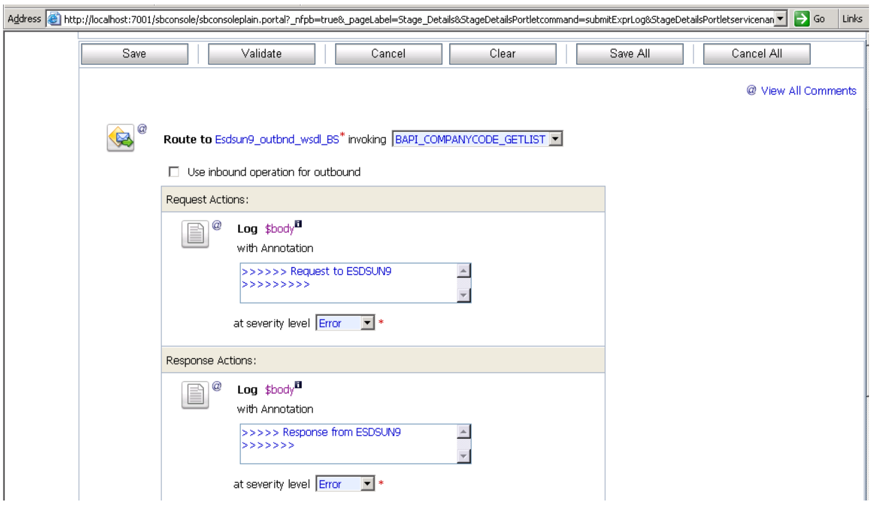
Select ***Add an Action*** in the ***Response Action*** and right click to select ***Reporting -> Log***.



The screen will look as like shown below:


Route to Esdsun9_outbnd_wsdl_BS* invoking BAPI_COMPANYCODE_GETLIST
□ Use inbound operation for outbound
Request Actions:
Log $body
with Annotation
>>>>>> Request to ESDSUN9 >>>>>>>>>
at severity level Error *
Response Actions:
Log $body
with Annotation
>>>>> Response from ESDSUN9 >>>>>>>
at severity level Error *
Top

Now, click the ***Validate*** and then the ***Save*** button.



Address http://localhost:7001/sbconsole/sbconsoleplain.portal?_nfpb=true&_pageLabel=Stage_Details&StageDetailsPortletcommand=submitExprLog&StageDetailsPortletservicenan

Route to Esdsun9_outbnd_wsdl_BS* invoking BAPI_COMPANYCODE_GETLIST

□ Use inbound operation for outbound

Request Actions:

Log $body

with Annotation

```
>>>>>> Request to ESDSUN9
>>>>>>>>>
```

at severity level Error *

Response Actions:

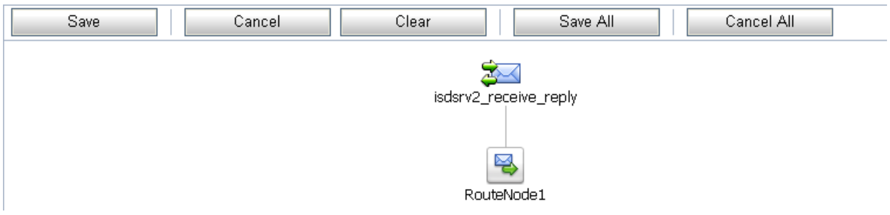
Log $body

with Annotation

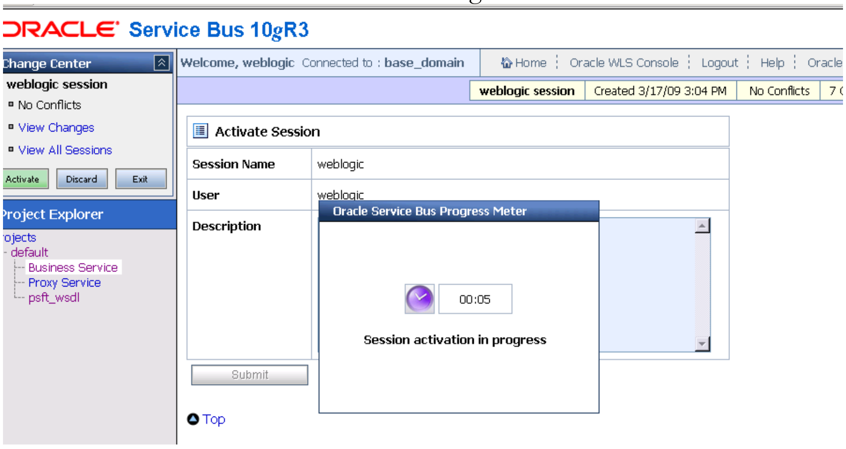
```
>>>>> Response from ESDSUN9
>>>>>>>
```

at severity level Error *

Now, select the ***save*** button to save the ***Edit Message Flow***.



Now click the ***Activate*** button under the ***Change Center*** and click ***Submit*** button in the OSB console to save the changes



weblogic session

- No Conflicts
- View Changes
- View All Sessions

Welcome, weblogic Connected to : base_domain

weblogic session | Created 3/17/09 3:04 PM | No Conflicts | 7 (

Activate Session

| | |
|---|---|
| Session Name | weblogic |
| User | weblogic |
| Description | |

00:05

Session activation in progress

## SAP Event Configuration

An event in SAP is defined as an occurrence of a status change in an object. The event is created when the relevant status change occurs. Either the user or SAP must implement event creation. An event is created from a specific application program (the event creator) and then "published" system-wide.

An unlimited number of receivers can respond to the event with their own "response mechanisms". An event is usually defined as a component of an object type.

SAP ***pseudo events*** are events that are not published by the SAP Event manager, but are called from an ABAP program or Remote Function call (using the Destination parameter).

### Client and Server Programs

***Remote Function Call (RFC)*** programs for non-SAP systems can function as either the caller or the called program in an RFC communication. The two types of RFC programs are:

- RFC Client
- RFC Server

The RFC client is the instance that calls the RFC library to execute the function that is provided by an RFC server. The functions that can be executed remotely are called RFC functions, and the functions provided by the RFC API are called RFC calls.

### SAP Gateway

The SAP Gateway is a secure application server. No connections are accepted unless they were pre-registered previously from the SAP presentation Client. A server connection presents itself to the Gateway and exposes a Program Identifier. If the Program Identifier is found in the list of registered Program IDs, the Gateway server then offers a connection to the server, which accepts a connection.

The Program ID then is linked with an RFC Destination within SAP, which enables SAP Function Modules and ALE documents (IDocs or BAPI IDocs) to be routed to the destination. The RFC Destination functions as a tag to mask the Program ID to SAP users. An RFC server program can be registered with the SAP Gateway and wait for incoming RFC call requests. An RFC server program registers itself under a Program ID at an SAP Gateway and not for a specific SAP system. In SAPGUI, the destination must be defined with transaction SM59, using connection type T and Register Mode. Moreover, this entry must contain information on the SAP Gateway where the RFC server program is registered.

### Registering Your Program ID in SAPGUI

To enable your SAP system to issue the following calls or interfaces to the SAP event adapter, you must register your program ID under an RFC destination.

- Remote Function Calls (RFC)
- Business Application Programming Interfaces (BAPI)
- Intermediate Documents (IDOC)

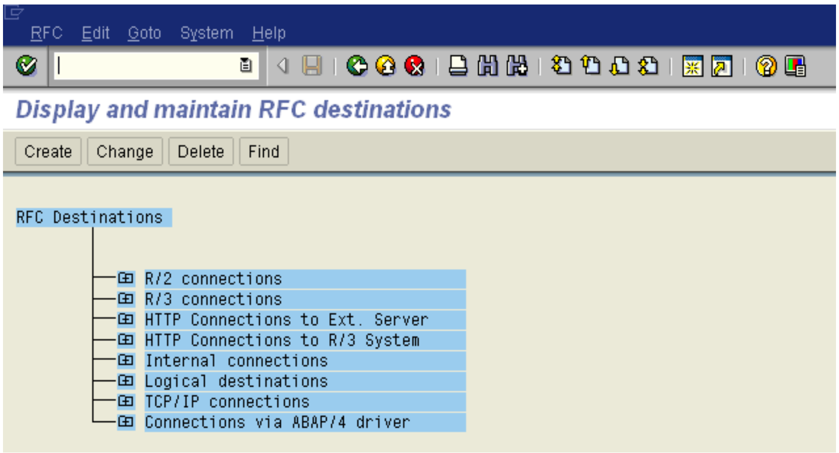
The RFC destination is a symbolic name (for example, BPELDEST) that is used to direct events to a target system, masking the program ID. The Program ID is configured in both SAPGUI and the event adapter.

### How to Register Your Program ID

To register your program ID:
Launch the ***SAP Workbench*** and logon to the SAP system.

Execute the ***SM59*** transaction or Select ***Tools, Administration, Administration, Network,*** and then ***RFC destination***.

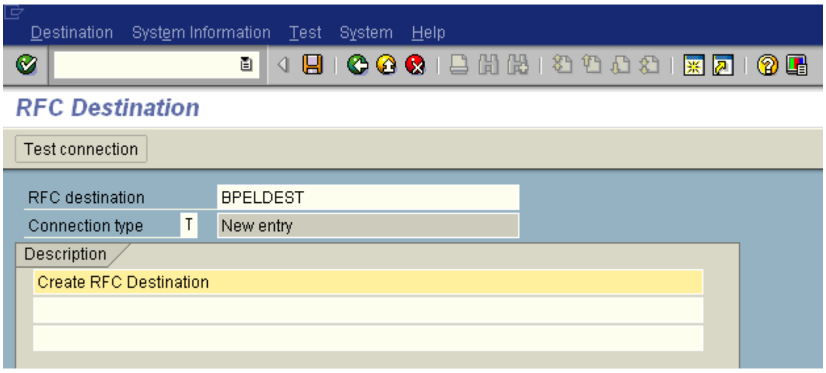
The Display and maintain RFC destinations window opens and displays a list of connections and drivers you can manage as shown in the following image.



Select ***TCP/IP connections***.

Click ***Create***.

The RFC Destination window opens and displays fields where you provide information about the RFC destination as shown in the following image.



RFC destination: BPELDEST

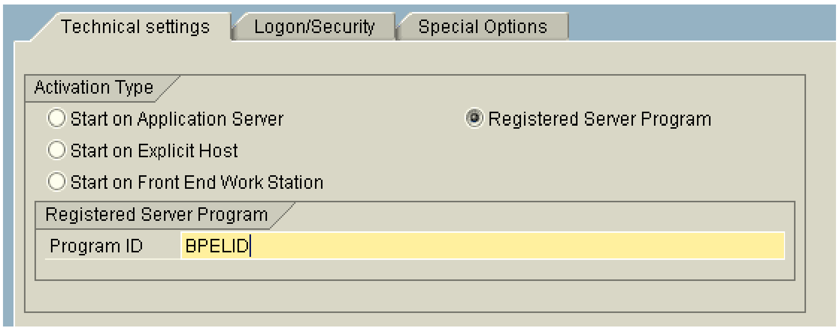
Connection type: T New entry

Description: Create RFC Destination

a. In the ***RFC destination field***, type a name, for example, BPELDEST. The value you type in this field is case-sensitive.
b. In the ***Connection type*** field, type ***T*** (for destination type, TCP/IP).
c. In the ***Description*** field, type a brief description.

Click ***Save*** from the tool bar or select ***Save*** from the Destination menu.

The RFC Destination BPELDEST window opens as shown in the following image.



○ Start on Application Server
○ Start on Explicit Host
○ Start on Front End Work Station
● Registered Server Program

Program ID: BPELID

a. For the Activation Type, Select the radio button for ***Registered Server Program.***
b. In the ***Program field***, type BPELID.

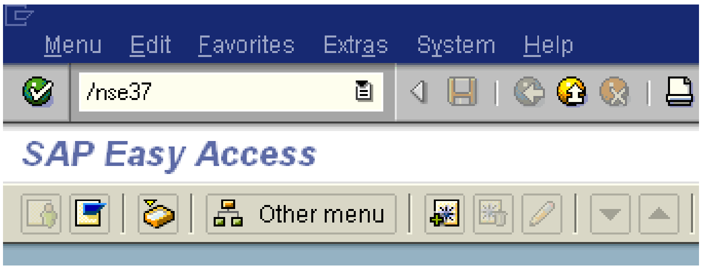
Click *Save* from the tool bar or select ***Save*** from the Destination menu.

Ensure your channel is running.

To verify that the SAP system and the OSB Adapter for mySAP ERP are communicating, click ***Test connection***.

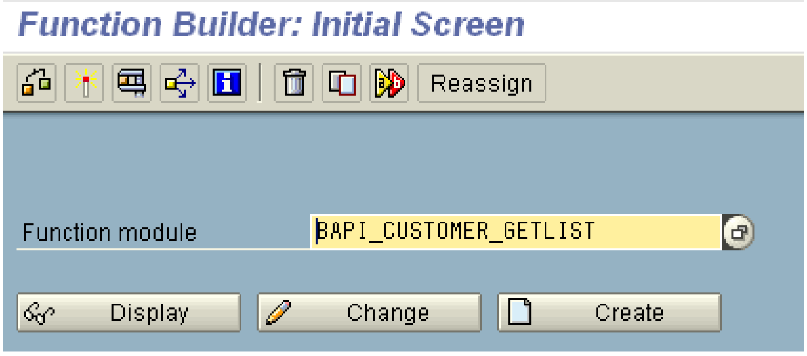
**RFC Function module should have been enabled for Remotely-callable**

Access the menu ***SE37*** from SAP GUI. In the SAP Server, the ***SE37*** transaction enables you to send RFCs (Remote Function Calls) or BAPIs (Business Application Programming Interfaces) to any RFC destination.



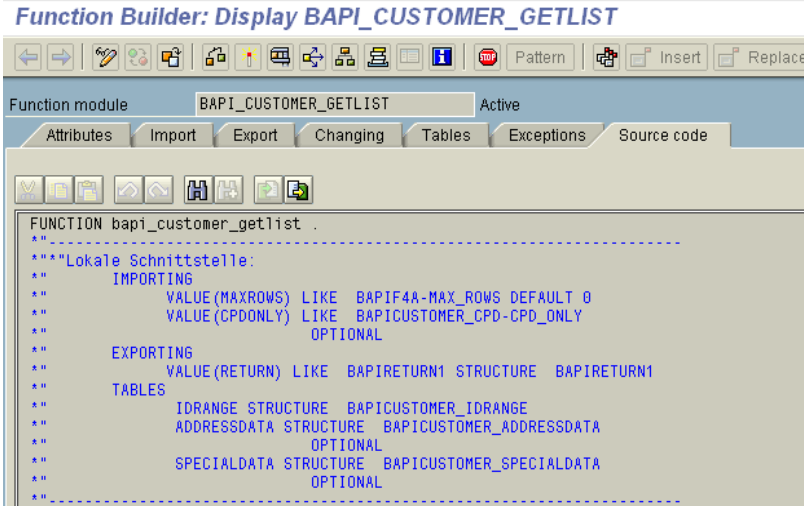
/nse37

Enter BAPI_CUSTOMER_GETLIST for the ***Function module*** and select the ***Display*** button.



Function module BAPI_CUSTOMER_GETLIST

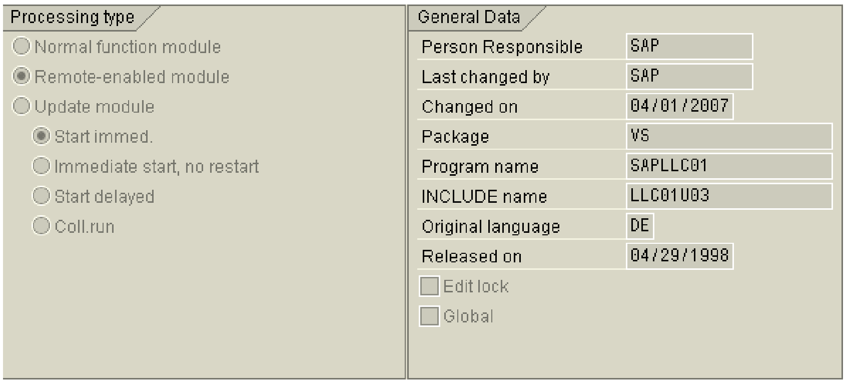
Following screen is shown. Select the tab ***Attributes***.



Function module BAPI_CUSTOMER_GETLIST Active

```
FUNCTION bapi_customer_getlist .
*"----------------------------------------------------------------------
*"*"Lokale Schnittstelle:
*"       IMPORTING
*"             VALUE(MAXROWS) LIKE  BAPIF4A-MAX_ROWS DEFAULT 0
*"             VALUE(CPDONLY) LIKE  BAPICUSTOMER_CPD-CPD_ONLY
*"                             OPTIONAL
*"       EXPORTING
*"             VALUE(RETURN) LIKE  BAPIRETURN1 STRUCTURE  BAPIRETURN1
*"       TABLES
*"              IDRANGE STRUCTURE  BAPICUSTOMER_IDRANGE
*"              ADDRESSDATA STRUCTURE  BAPICUSTOMER_ADDRESSDATA
*"                             OPTIONAL
*"              SPECIALDATA STRUCTURE  BAPICUSTOMER_SPECIALDATA
*"                             OPTIONAL
*"----------------------------------------------------------------------
```

Under the ***Processing type***, you would see the following:



Processing type

○ Normal function module
● Remote-enabled module
○ Update module
  ● Start immed.
  ○ Immediate start, no restart
  ○ Start delayed
  ○ Coll.run

General Data

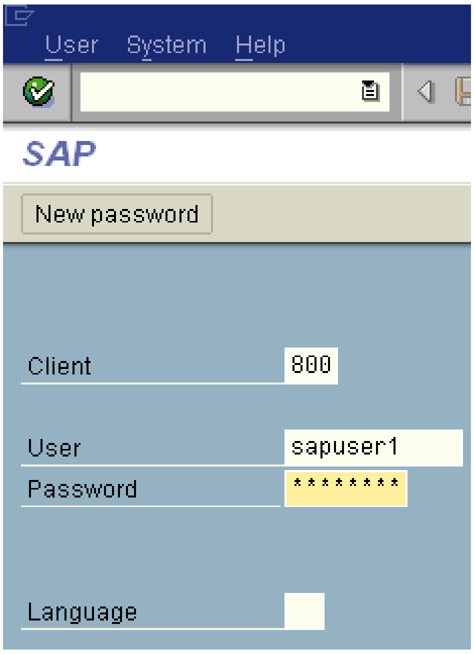
| | |
|---|---|
| Person Responsible | SAP |
| Last changed by | SAP |
| Changed on | 04/01/2007 |
| Package | VS |
| Program name | SAPLLC01 |
| INCLUDE name | LLC01U03 |
| Original language | DE |
| Released on | 04/29/1998 |

□ Edit lock
□ Global

Make sure that the radio button for the ***Remote-enabled module*** is selected.

### Triggering the event

Login to SAP GUI.



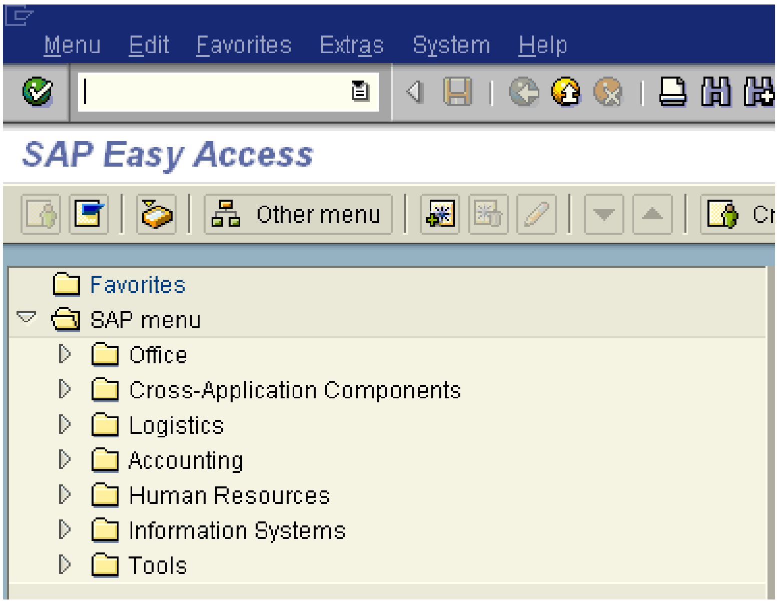
Client 800

User sapuser1

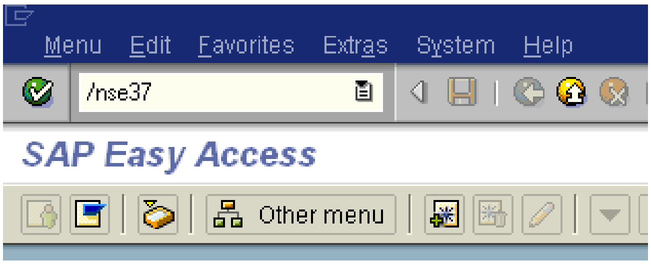
Password ********

Language

You will see the following screen of SAP.

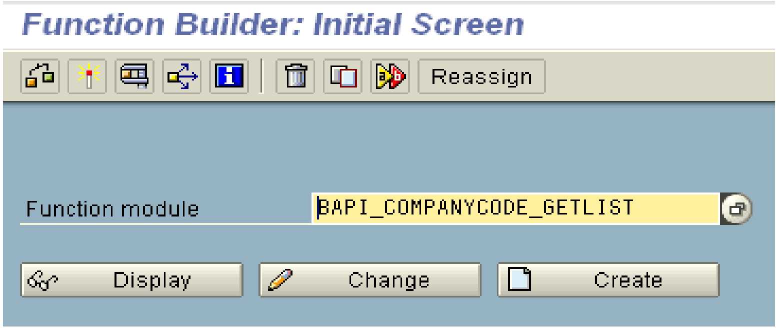


Select the function ***SE37*** from the menu.



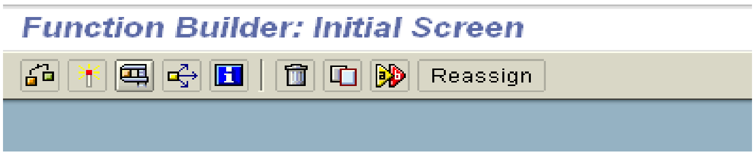
/nse37

You would see the following screen. Select BAPI_COMPANYCODE_GETLIST for the ***Function module***.

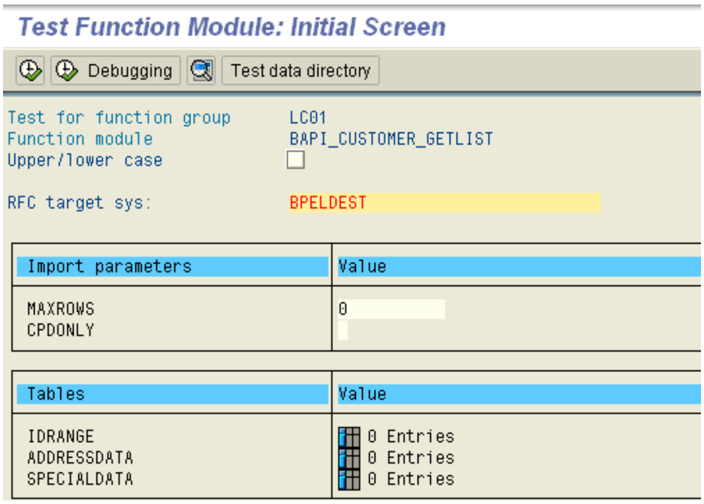


Function module BAPI_COMPANYCODE_GETLIST

Select the ***single test (F8)*** in the below options.



That will take you to the following Function module test screen. Enter the appropriate ***RFC target system*** value as shown below:



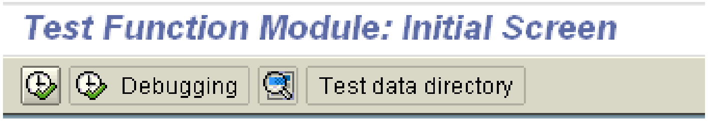
```
Test for function group     LC01
Function module             BAPI_CUSTOMER_GETLIST
Upper/lower case            □

RFC target sys:             BPELDEST
```

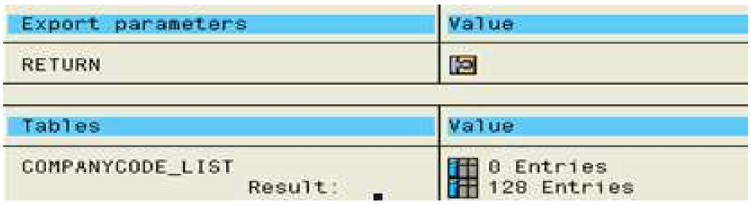
| Import parameters | Value |
|---|---|
| MAXROWS | 0 |
| CPDONLY | |

| Tables | Value |
|---|---|
| IDRANGE | 0 Entries |
| ADDRESSDATA | 0 Entries |
| SPECIALDATA | 0 Entries |

Select the ***Execute (F8)*** button in the test function module screen.



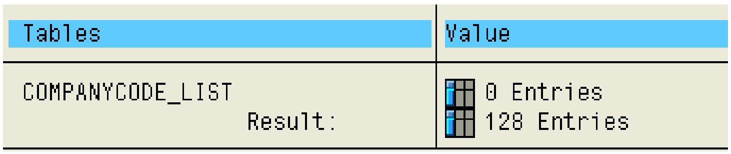
You will see the ***Result*** for the execution.



| Export parameters | Value |
|---|---|
| RETURN | |

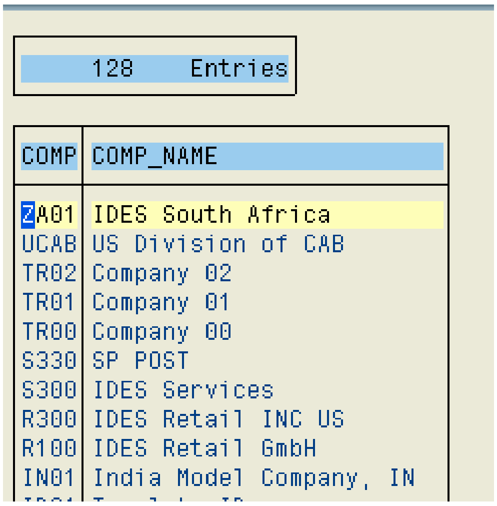
| Tables | Value |
|---|---|
| COMPANYCODE_LIST<br>Result: | 0 Entries<br>128 Entries |

Click the value for the ***Result*** in the screen.



| Tables | Value |
|---|---|
| COMPANYCODE_LIST<br>Result: | 0 Entries<br>128 Entries |

This will show the results of the operation.



128 Entries

| COMP | COMP_NAME |
|---|---|
| ZA01 | IDES South Africa |
| UCAB | US Division of CAB |
| TR02 | Company 02 |
| TR01 | Company 01 |
| TR00 | Company 00 |
| S330 | SP POST |
| S300 | IDES Services |
| R300 | IDES Retail INC US |
| R100 | IDES Retail GmbH |
| IN01 | India Model Company, IN |

This completes the article for working with the synchronous events with MySAP adapter with the Oracle Service Bus.

## CONCLUSION

Working with SAP R/3 synchronous events through OSB MySAP adapter is simple and elegant.  Adapter provides a tightly coupled way of integrating SAP R/3 events with OSB.

## REFERENCES

Oracle® Service Bus for MySAP User Guide 10*g* Release 3
Oracle® Service Bus User Guide 10*g* Release 3.

OracleAS MySAP adapter synchronous events with SAP R/3

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