



How To Enable Business Workflow for SAP NetWeaver Gateway 2.0

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Document History

Document Version	Description
1.00	First internal release of this guide
2.00	First official release of this guide that corresponds to the public release of SAP NetWeaver Gateway
2.02	Revised for SAP NetWeaver Gateway 2.0 SP02

Typographic Conventions

Type Style	Description
<i>Example Text</i>	Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Cross-references to other documentation
Example text	Emphasized words or phrases in body text, graphic titles, and table titles
Example text	File and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.
Example text	User entry texts. These are words or characters that you enter in the system exactly as they appear in the documentation.
<Example text>	Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.
EXAMPLE TEXT	Keys on the keyboard, for example, F2 or ENTER.

Icons

Icon	Description
	Caution
	Note or Important
	Example
	Recommendation or Tip

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1. Business Scenario

With SAP NetWeaver Gateway, you can expose your workflow tasks from SAP Business Workflow as lightweight RESTful services. This integration between SAP NetWeaver Gateway and Business Workflow aims at providing a way for your business workflow users to work on the workflow items on any device or platform through SAP NetWeaver Gateway (referred as Gateway in this guide).

2. Background Information

In this How-To Guide, we will show you how to do a Pull scenario with SAP NetWeaver Gateway and Business Workflow. That means, once you have a work item in your Business Workflow inbox, you can access this item and apply actions to the work item via SAP NetWeaver Gateway. This guide will show you the configuration required in SAP NetWeaver Gateway as well as in the SAP backend where your Business Workflow is located for enabling this scenario.

3. Prerequisites

SAP NetWeaver Gateway 2.0 SP02 is used for illustration throughout this How-To Guide. In additions, the following are required to be installed or ready before using this guide:

- Administrator access to a SAP NetWeaver Gateway system.
- A SAP ERP system with Business Workflow (referred as backend in this document) and the corresponding SAP NetWeaver Gateway package (Backend Event Publisher – BEP) installed. Please refer to the installation manual for the requirements of the installation and configuration procedure.
- A workflow is created in the backend. The workflow has to have at least 1 user decision task. Refer to or create a sample workflow described in section 5.1 as a preparation for the guide.
- Configuration for using assertion ticket has already been setup between Gateway and the backend. This is for passing on the logon ticket from Gateway to the backend. For detail on how to setup this up, please refer to the installation and configuration guide in <http://help.sap.com>.
- Firefox with REST Client installed for testing the RESTful services.

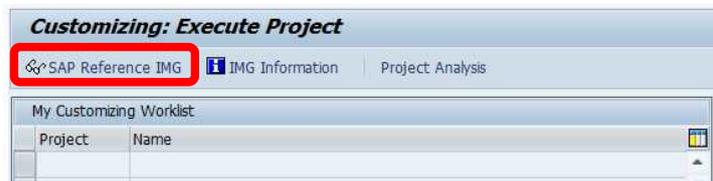
4. Step-by-Step Procedure

There are 5 major steps you will have to go through in order to enable the Gateway scenario for your backend. Sections 4.1 to 4.5 show you how these steps should be done.

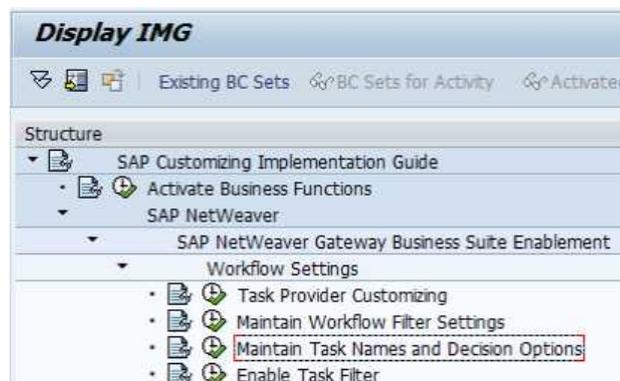
4.1 Preparing your workflow for Gateway scenario

If you don't already have a workflow to work with, please create one. For reference, we will use a sample workflow described in Appendix 5.1. To enable the workflow for Gateway scenario, we will first need to define Workflow Pattern Customization.

1. Logon to the backend system where your business workflow is located.
2. Go to transaction SPRO. Click on the button SAP Reference IMG.

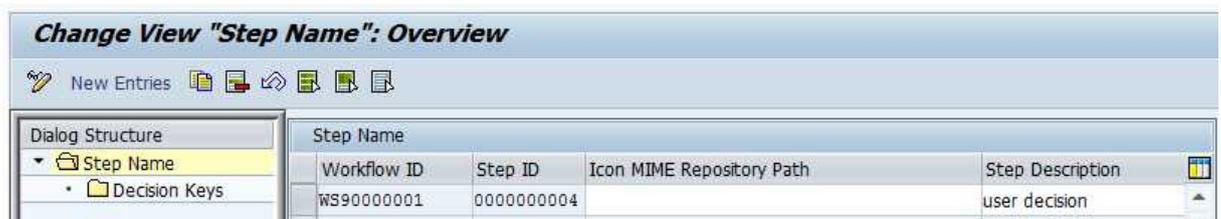


3. Open SAP Customizing Implementation Guide → SAP NetWeaver → SAP NetWeaver Gateway Business Suite Enablement → Workflow Settings. Click on Execute next to Maintain Task Names and Decision Options.



4. On the next screen, click on the button New Entries. Enter the following:
 - Workflow ID: WS90000001 <refer to Appendix of the sample workflow we use>
 - Step ID: 0000000004 <refer to Appendix>
 - Description: User Decision <or any description you want>

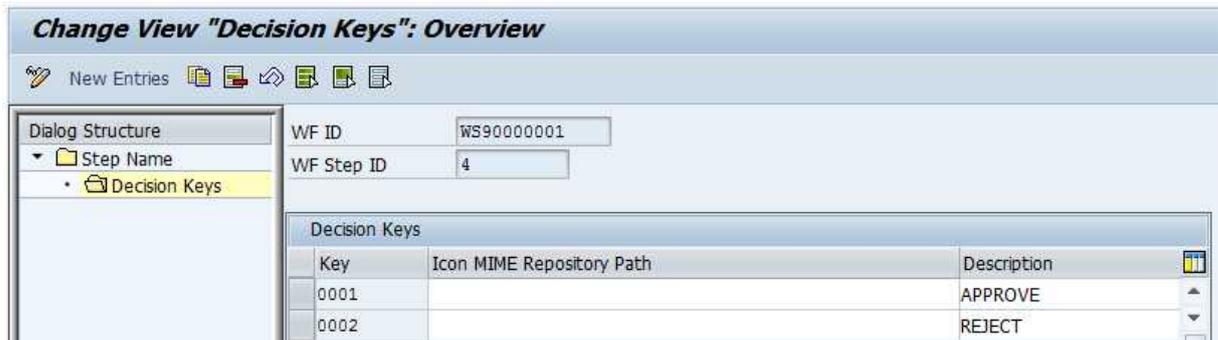
Click on Save.



- Select the row you have just created. Then Double click on Decision Keys. Click on the button New Entries to define the decision keys. We will need to define 2 decision keys here like below.

Key	Description
0001	APPROVE
0002	REJECT

Click on Save.

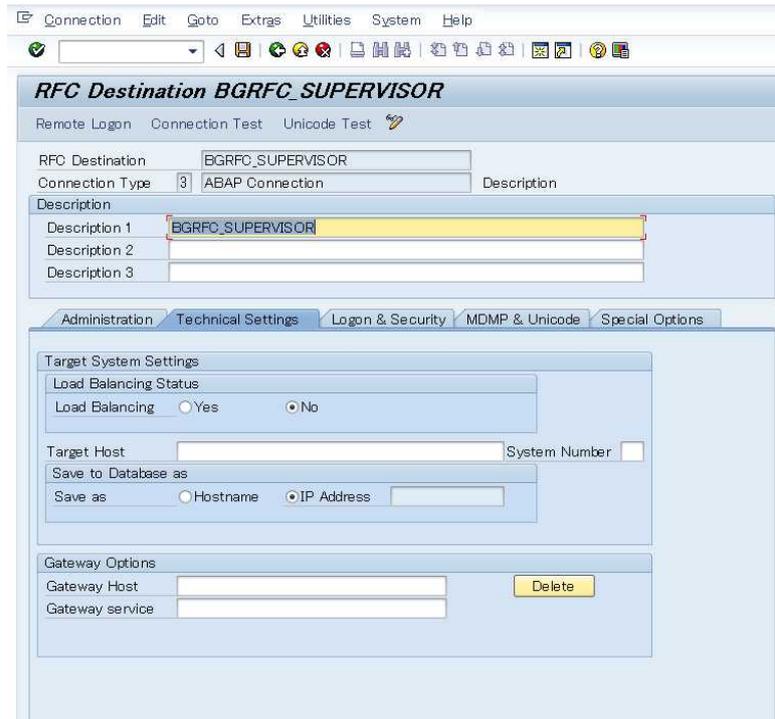


The screenshot shows the SAP Change View 'Decision Keys': Overview. The interface includes a toolbar with 'New Entries' and other icons. On the left, a 'Dialog Structure' pane shows a tree view with 'Step Name' expanded to 'Decision Keys'. The main area contains input fields for 'WF ID' (WS90000001) and 'WF Step ID' (4). Below these is a table titled 'Decision Keys' with columns 'Key', 'Icon MIME Repository Path', and 'Description'. The table contains two rows: one with Key '0001' and Description 'APPROVE', and another with Key '0002' and Description 'REJECT'.

4.2 Defining communication between Gateway and Backend

Before we can define the communication between Gateway and the Backend system, we have to setup bgRFC in the backend. The following steps guide you how to configure standard bgRFC configuration in Backend System.

- Logon to the backend system, go to transaction SM59.
- Define Supervisor Destination BGRFC_SUPERVISOR with connection Type "3" or "L".



Note:

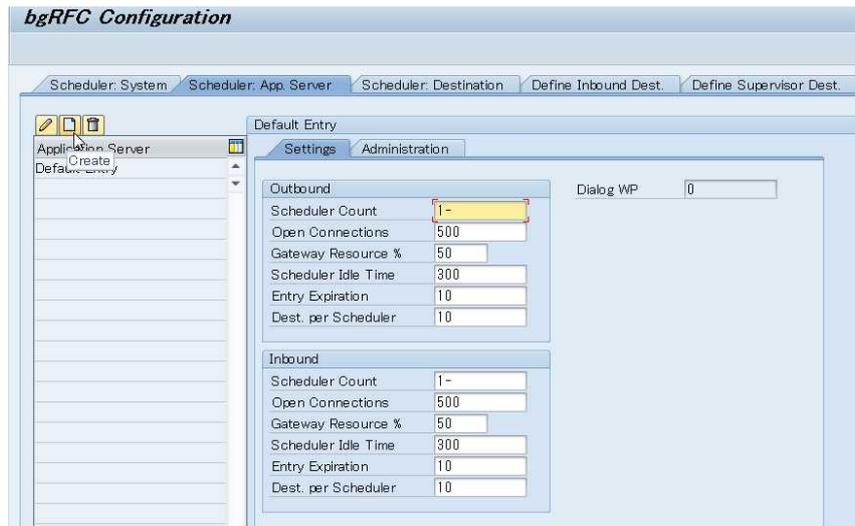
If you choose “3”, please choose No for load-balancing and do not enter any value for Target host and System number.

If you choose “L”, the reference for the logical connection should be “NONE” or initial (blank).

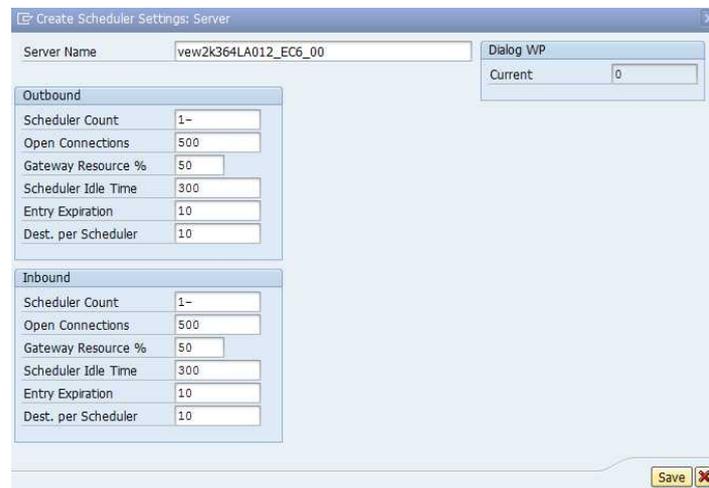
3. Enter user, password for the logon info. Be reminded that the user you enter needs to at least have authorizations in the SAP_BC_BGRFC_SUPERVISOR role or is assigned with the role.



6. Go to transaction SBGRFCCONF.
7. On the *Scheduler App Server* tab, click on *Create*.



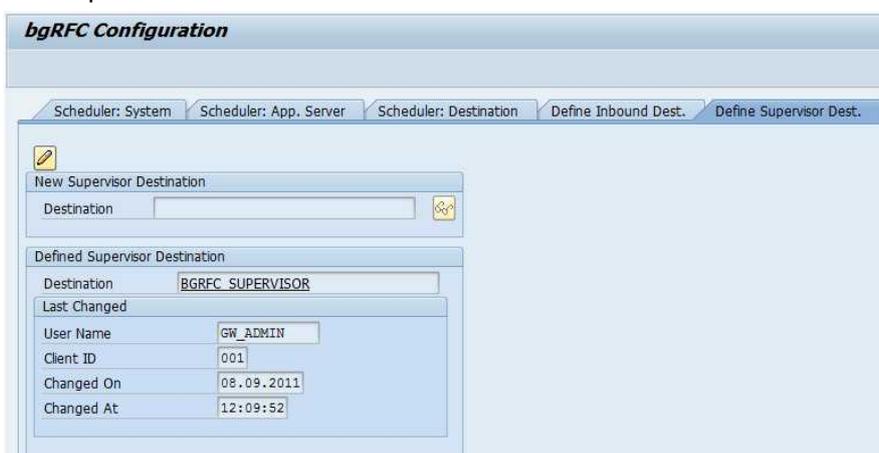
8. Enter a server name with F4 help and save.



Note:

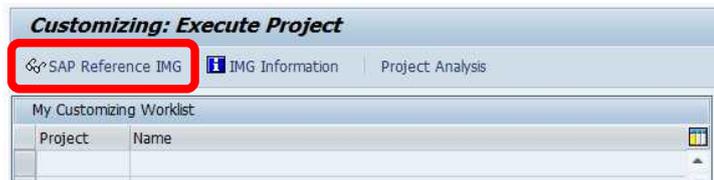
Either inbound or outbound scheduler requires 3 dialog work processes per each scheduler. This workflow scenario only requires Outbound scheduler.

9. On *Supervisor Destination* tab, click on Change Button and enter the RFC Destination created in step 1. Then press the save button.

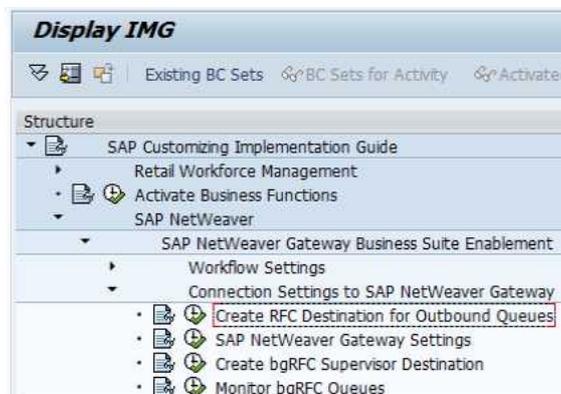


In the next steps, you will need to configure the Backend Event Publisher (BEP) in the backend system to define the connection between the Backend and Gateway through bgRFC.

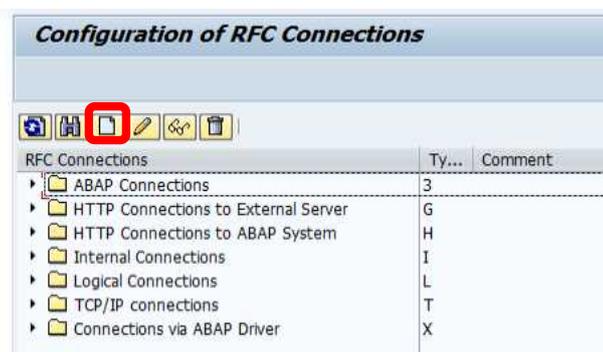
10. Still in the backend system, go to transaction SPRO and click on the button SAP Reference IMG.



11. Open SAP Customizing Implementation Guide → SAP NetWeaver → SAP NetWeaver Gateway Business Suite Enablement → Connection Settings to SAP NetWeaver Gateway. Click on Execute next to Create RFC Destination for Outbound Queues.



12. This will bring us to the RFC Destination transaction (i.e. SM59). In the window of Configuration of RFC Connections, click on the Create button.



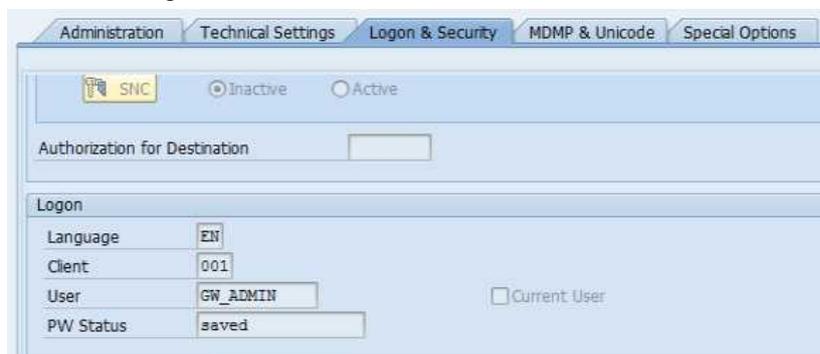
13. We now need to create a bgRFC destination. Enter the followings to the corresponding fields.
 - RFC Destination: BEP_BGRFC_DEST <or any name you want>
 - Connection Type: 3
 - Description 1: bgRFC for Backend Event Publisher <or your own description>
 Then hit Enter.



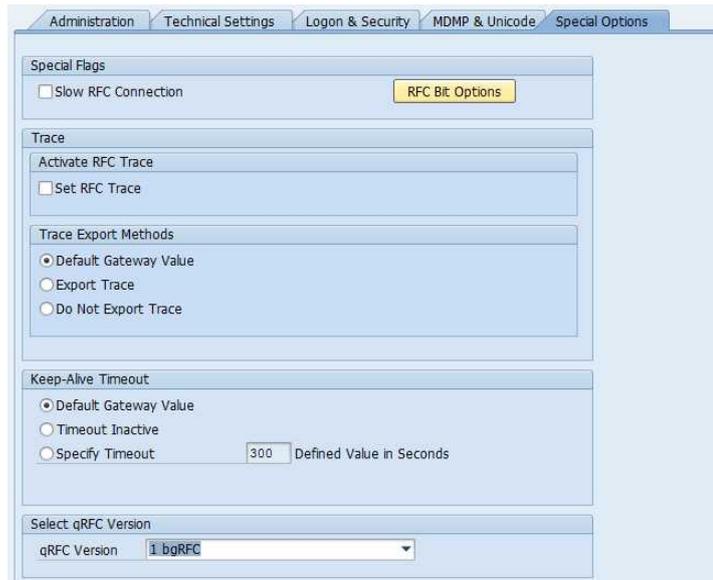
14. Under the tab Technical Settings, enter the host info of the system where Gateway is located.
 - Target Host: < hostname of the Gateway box >
 - System Number: < system # of the Gateway box >



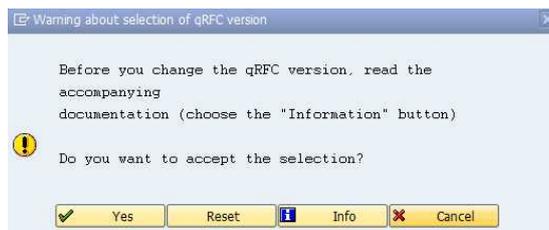
15. Click on the tab Logon & Security. Enter the Logon info for logging on to the Gateway box. Click on Save to save the changes.



16. Click on the tab Special Options. Under the area of Select qRFC Version, select 1 bgRFC for qRFC Version.



- Click Save. A dialog of "Warning about selection of qRFC version" will be displayed. Click on Yes to proceed.



- On the bottom of the screen, you should see a message "Destination BEP_BGRFC_DEST saved". Click on the button Connection Test to test the destination. A successful test should look like below.

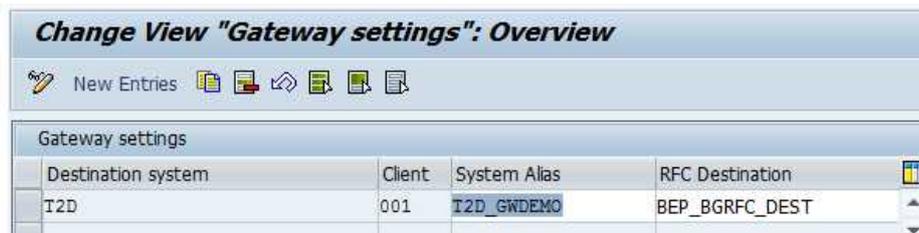
RFC - Connection Test	
Connection Test BEP_BGRFC_DEST	
Connection Type SAP Connection	
Action	Result
Logon	5 msec
Transfer of 0 KB	1 msec
Transfer of 10 KB	1 msec
Transfer of 20 KB	1 msec
Transfer of 30 KB	2 msec

- Go to transaction SPRO and click on SAP Reference IMG. Open SAP Customizing Implementation Guide → SAP NetWeaver → SP NetWeaver Gateway Business Suite Enablement → Connection Settings to SAP NetWeaver Gateway. Click on Execute next to SAP NetWeaver Gateway Settings.



20. In the window of Change View “Gateway Settings”: Overview, click on New Entries. Then enter the followings in the corresponding fields.

- Destination System: T2D < i.e. System ID of your Gateway box >
- Client: 001 < i.e. Client Number in your Gateway box >
- System Alias: T2D_GWDEMO < an unique alias name >
- RFC Destination: BEP_BGRFC_DEST < the bgRFC destination created in step 11 of this section >



21. Click on Save. Create your Customizing Request when prompted.

22. Go back to transaction SPRO and open SAP Reference IMG.

23. Open SAP Customizing Implementation Guide → SAP NetWeaver → SAP NetWeaver Gateway Business Suite Enablement → Backend Event Publisher Administration. Click on the Activity icon next to Event Definition.



24. In the Change View “Event Definition”: Overview window, select Event definition under Dialog Structure and click on the button New Entries.

25. Enter the following in the Event definition table.

- Event ID: WORKFLOW
- Active: < check this to enable the event for Gateway >
- Event Description: < enter your description >



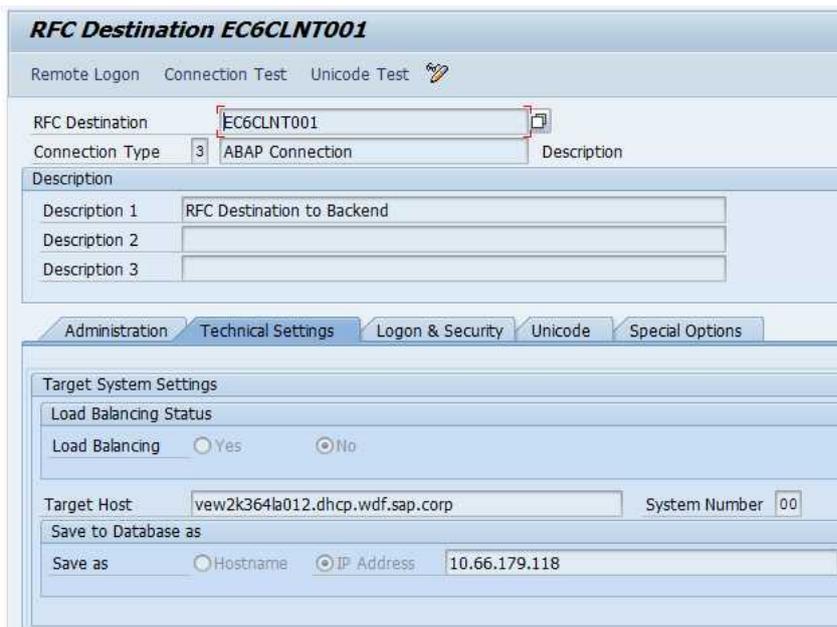
26. Click on Save. Create a Customizing Request when prompted.

4.3 Setting up Subscription from Gateway to Backend

Now we can have Gateway subscribe to the backend system so that it can retrieve the workflow items later on.

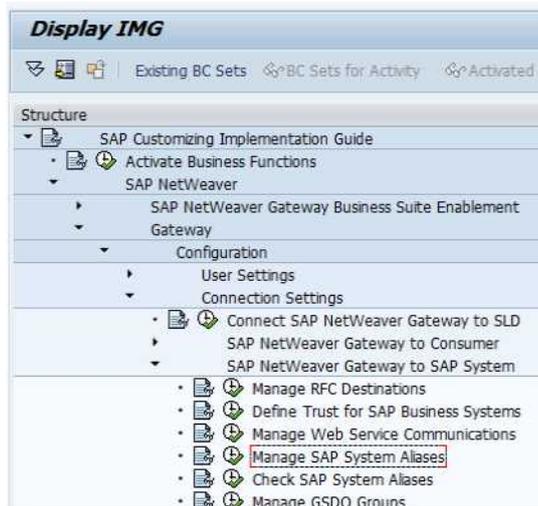
1. Logon to the Gateway box. Then go to transaction SM59. You will need to create a RFC destination to the backend system of Business Workflow if you don't have one yet. Create a destination with the info below (you can skip this part if the destination has already been created during your installation):
 - RFC destination: <Backend SID>CLNT<client #> (in this case, EC6CLNT001)
 - Connection Type: 3
 - Target Host: < hostname to your Workflow backend >
 - System Number: < system # of your Workflow backend >

Save and test the connection to make sure it works.



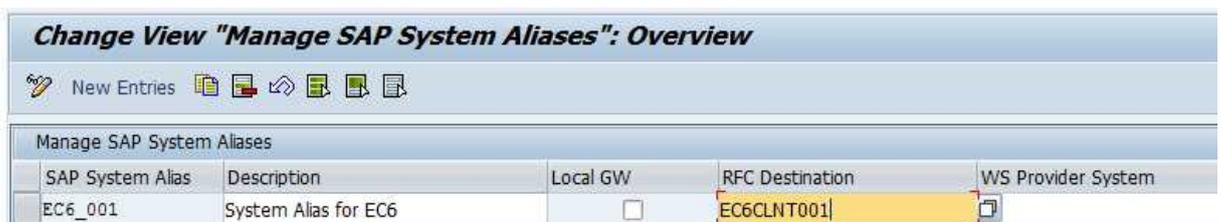


2. Go to transaction SPRO and open SAP Reference IMG.
3. Open SAP Customizing Implementation Guide → SAP NetWeaver → Gateway → Configuration → Connection Settings → SAP NetWeaver Gateway to SAP System. Click on the Execute icon next to Manage SAP System Alias.



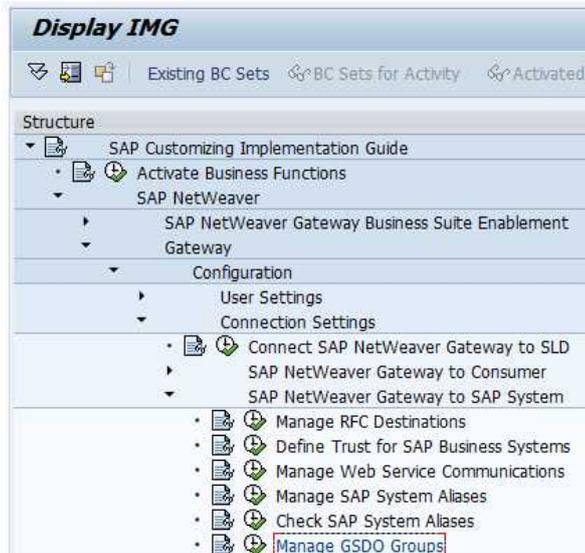
4. Click on the button New Entries. Define a SAP system alias with info below:
 - SAP System Alias: EC6_001 < or any unique name you want >
 - Description: < any description >
 - RFC Destination: < choose the RFC destination defined in step 1 >

Click on Save.

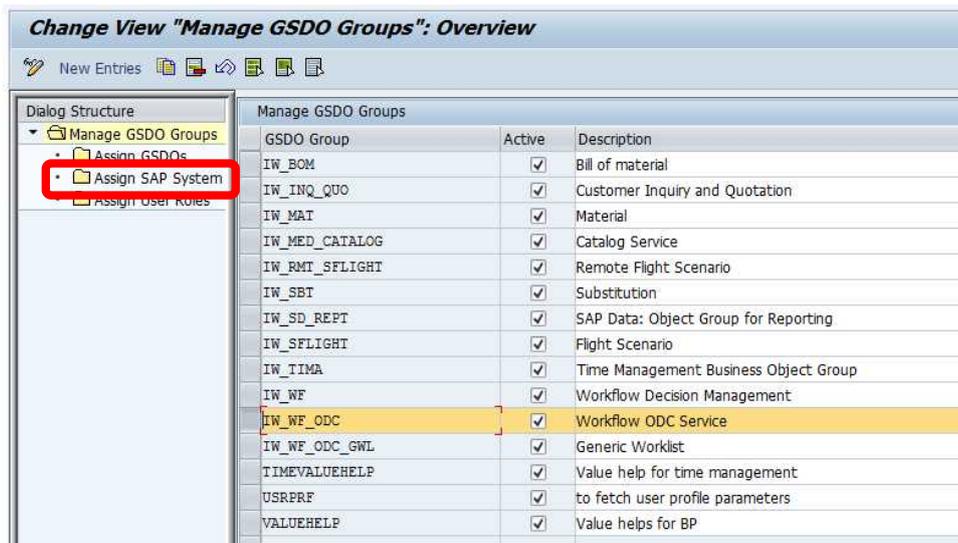


5. Go to transaction SPRO and open SAP Reference IMG.

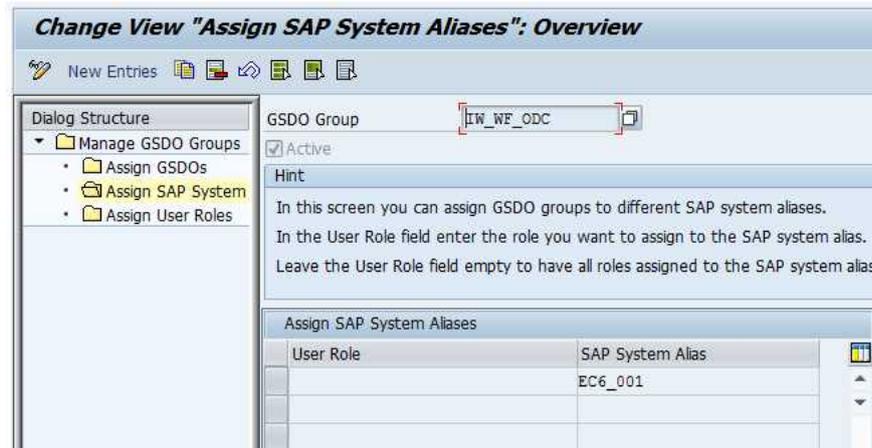
6. Explore SAP Customizing Implementation Guide → SAP NetWeaver → Gateway → Configuration → Connection Settings → SAP NetWeaver Gateway to SAP System. Click on the Activity icon next to Manage GSDO Groups.



7. In the table, select the row IWF_WF_ODC. Then under Dialog Structure, double click on Assign SAP System.



8. Click on New Entries. Add the system alias to your backend like below. Then click on Save.



4.4 Executing Workflow items through RESTful services

At this point, the configurations required are basically done. We can now test the workflow operations through the RESTful services from Gateway.

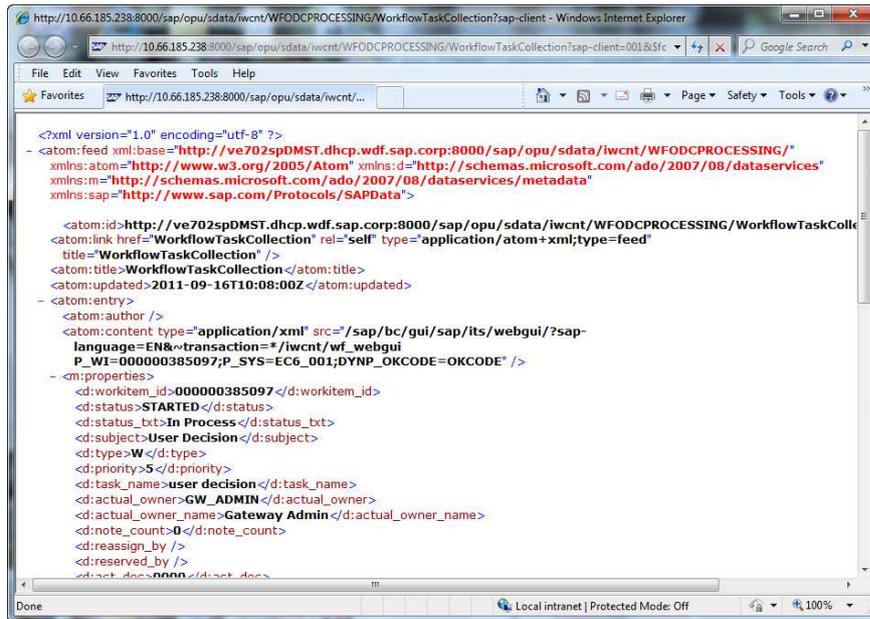
1. To get a list of Tasks created in the workflow, issue a GET request to the following URL to the Gateway box:

```
http://< Hostname of Gateway box >:< HTTP port of Gateway box >
/sap/opu/sdata/iwcnt/WFODCPROCESSING/WorkflowTaskCollection?sap-
client=< Client # >&$format=xml
```

For Example:

[http://10.66.185.238:8000/sap/opu/sdata/iwcnt/WFODCPROCESSING/WorkflowTaskCollection?sap-client=001&\\$format=xml](http://10.66.185.238:8000/sap/opu/sdata/iwcnt/WFODCPROCESSING/WorkflowTaskCollection?sap-client=001&$format=xml)

You should be able to get a collection of tasks like below.



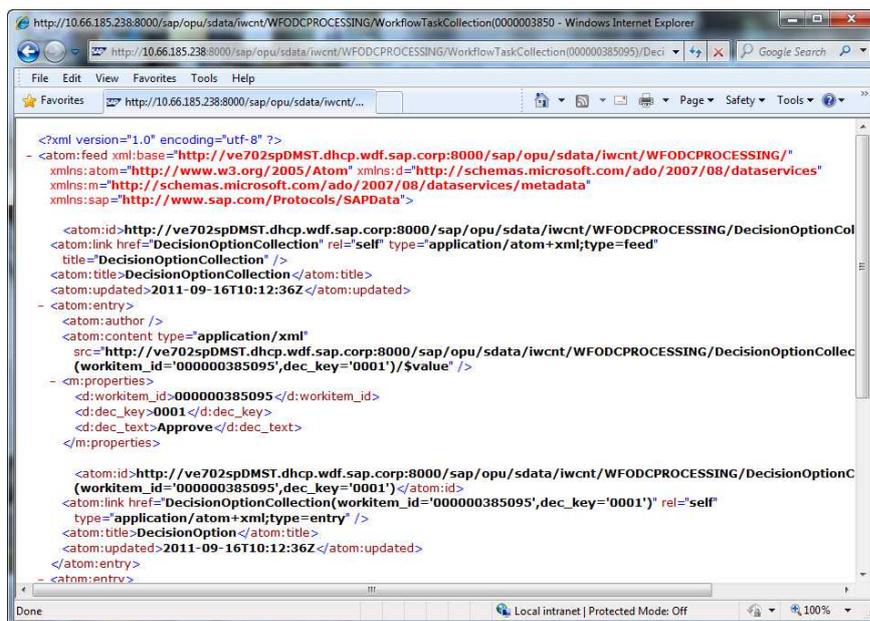
- To get a decision list of a particular work item, you can issue a GET request to the following URL:

`http://< Hostname of Gateway box >:< HTTP port of Gateway box > /sap/opu/sdata/iwcnt/WFODCPROCESSING/WorkflowTaskCollection(< workitem_id >)/DecisionOptions/?format=xml`

For example:

[http://10.66.185.238:8000/sap/opu/sdata/iwcnt/WFODCPROCESSING/WorkflowTaskCollection\(000000385095\)/DecisionOptions/?format=xml](http://10.66.185.238:8000/sap/opu/sdata/iwcnt/WFODCPROCESSING/WorkflowTaskCollection(000000385095)/DecisionOptions/?format=xml)

You will get a list of decision available for this work item like below.



3. To apply a decision (e.g. approve) to the work item, you can issue a POST request to the URL below.

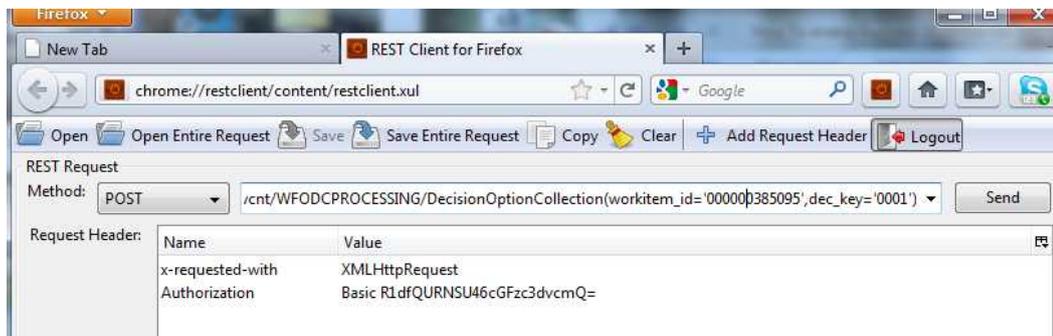
```
http://< Hostname of Gateway >:< HTTP port of Gateway >  
/sap/opu/sdata/iwcnt/WFODCPROCESSING/DecisionOptionCollection(workitem  
_id='< workitem_id >',dec_key='< dec_key >')
```

For example:

[http://10.66.185.238:8000/sap/opu/sdata/iwcnt/WFODCPROCESSING/DecisionOptionCollection\(workitem_id='000000385095',dec_key='0001'\)](http://10.66.185.238:8000/sap/opu/sdata/iwcnt/WFODCPROCESSING/DecisionOptionCollection(workitem_id='000000385095',dec_key='0001'))

We suggest you use Firefox REST Client to test this operation. In the POST request header, you will need 2 headers:

1. Authorization: < click on the Login button to add your login info >
2. Header x-requested-with with value XMLHttpRequest



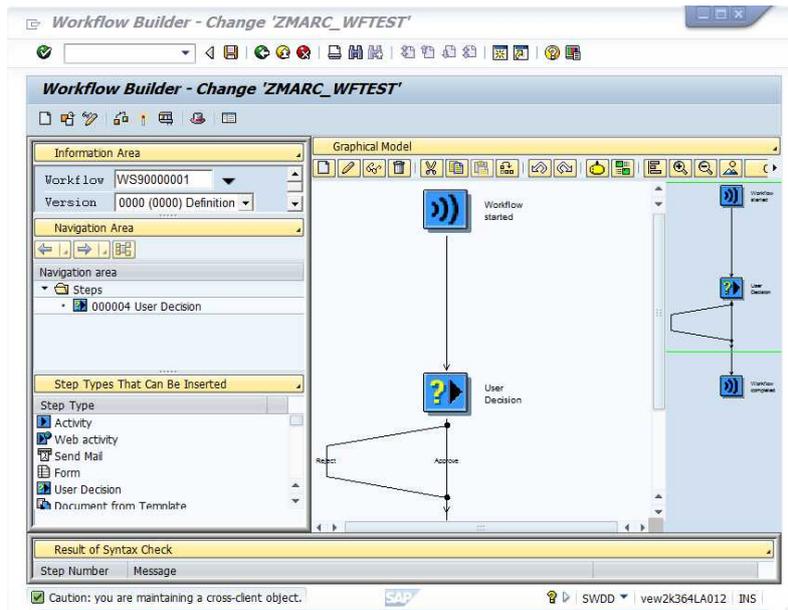
For any other operations you may want to apply to the RESTful services of your workflow, please refer to the online help (SAP NetWeaver Gateway Workflow Guide) from <http://help.sap.com>.

5. Appendix

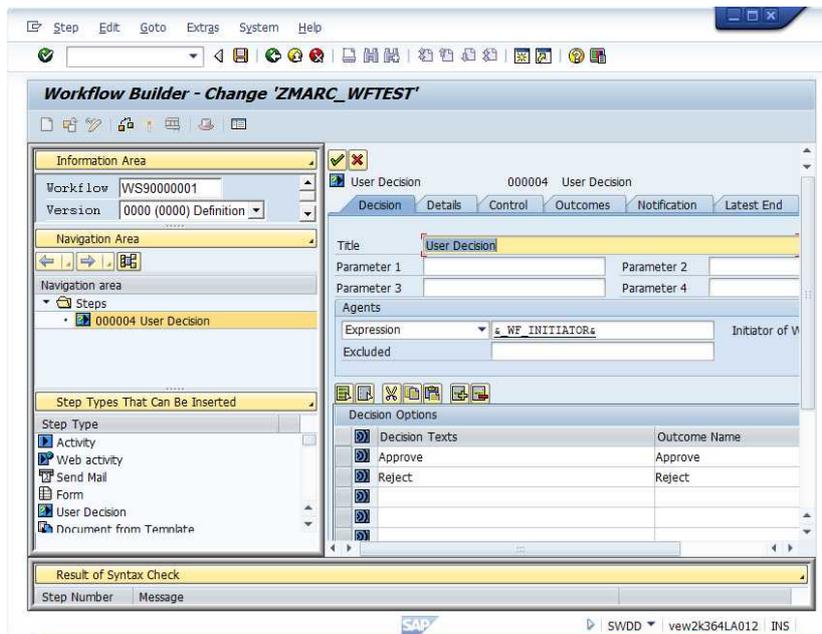
5.1 Sample Workflow used in this How-To Guide

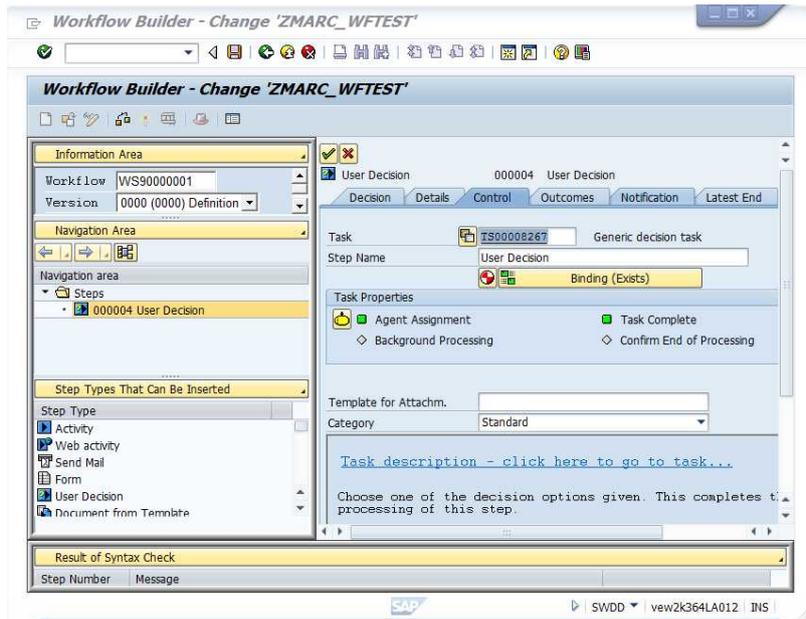
Through this How-To Guide, we use the following sample workflow to explain how the Gateway scenario works. Below you can find the detail about this sample workflow.

Design of the workflow: 1 User Decision step. Step ID is 000004. Workflow ID is WS90000001.



Task ID of the user decision step is TS00008267.





www.sdn.sap.com/irj/sdn/howtoguides