Oracle FLEXCUBE Process Flow Guide
Oracle FLEXCUBE Universal Banking
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ORACLE

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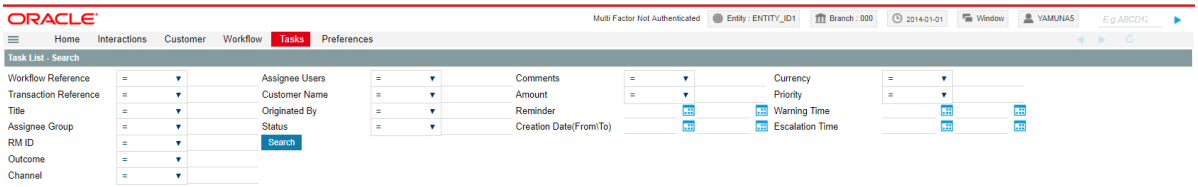
1. Generic Maintenance

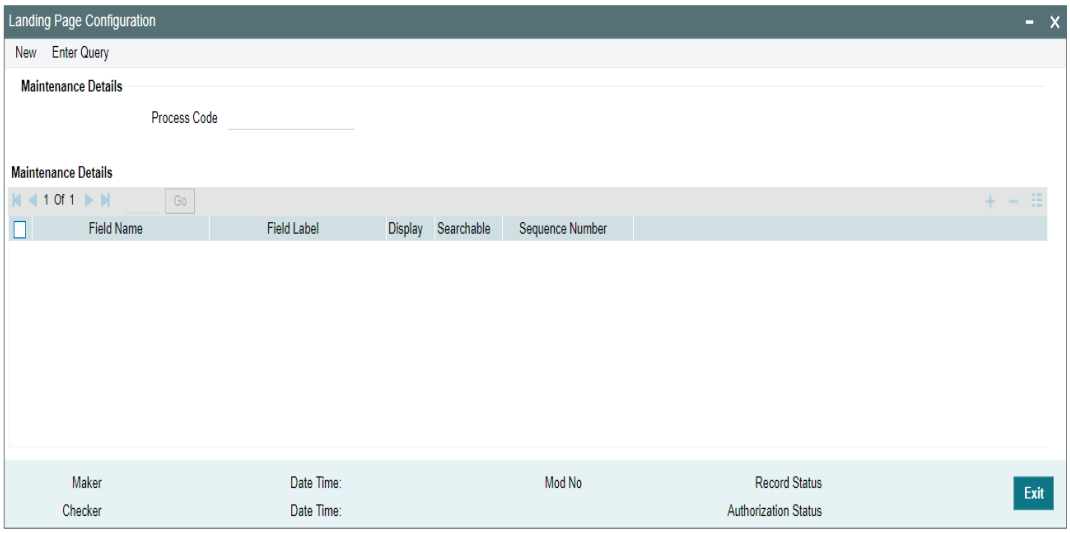
1.1 Configuring Landing Page

The page that is displayed on invoking the application is called as the ‘Landing Page’. As mentioned above, you can launch a search for a particular task on the basis of the fields displayed in the Task List pane under the ‘**All’ sub-menu in the ‘Search’ main menu** item. The fields under this sub-menu (All) are pre-defined in the system and represent all process flows. The search fields under the ‘All’ sub-menu are displayed as shown in the screen below:



You can also choose to maintain additional fields for specific process flows, When you maintain additional fields for search operation for a process flow, the process flow is displayed under the ‘Search’ main menu and all the fields (pre-defined and the additional ones maintained for the process flow) become available for you to search on.

You can define the process-flow specific additional fields in the ‘Landing Page Configuration’ screen, which you can invoke by typing ‘SMDLNDPG’ in the field at the top right corner of the Application tool bar and clicking the adjoining arrow button. The following screen is displayed:



Here, you can capture the following details:

Process Code

Specify the function ID associated with the process work flow for which you are defining additional details.

Field Name

Select the field name which should appear in the Task List pane when you carry out a search for a task under the process flow mentioned above.

Field Label

Specify the name that should be displayed in the Task List pane.

Display

Check this box if the value of the field specified should be displayed as part of task details when you click on a task. This is applicable only when the ‘Process Code’ field is ‘specified as ‘All’.

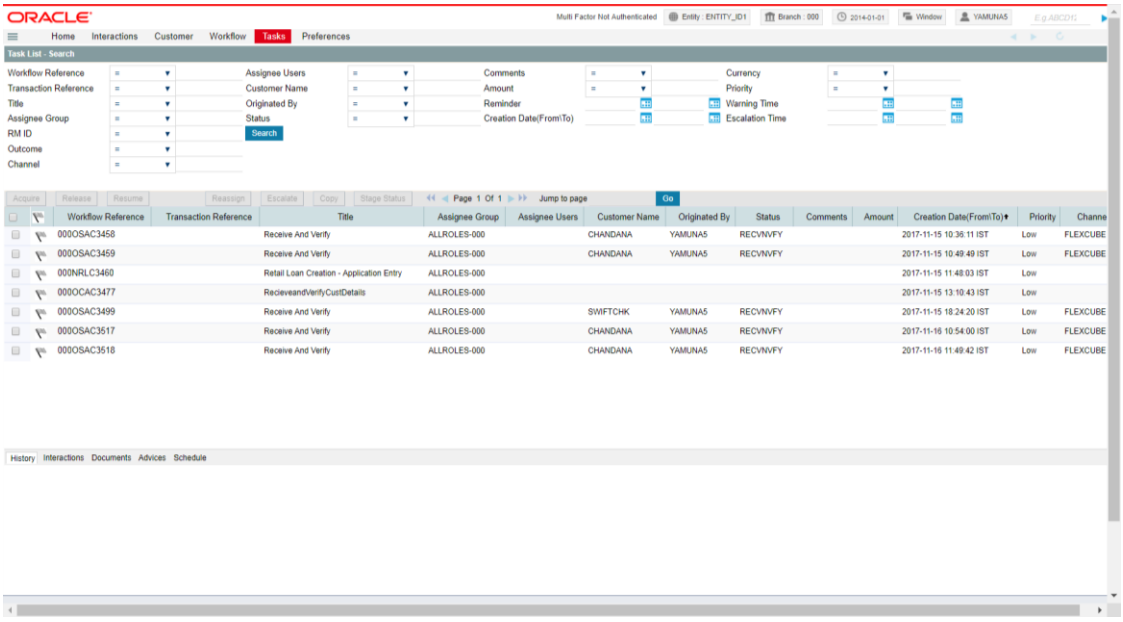
Searchable

Check this box to indicate that the field should be made available for searching tasks. This facility is available for any ‘Process Code’.

Seq No

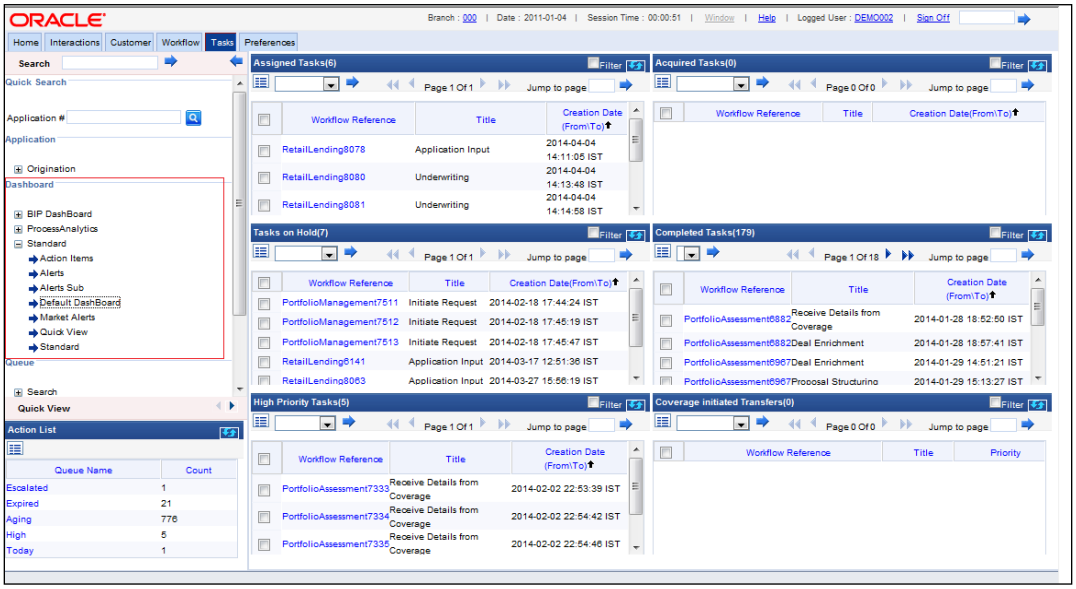
Specify the order of display for the filed.

For instance, if you have maintained the fields ‘Currency’ and Product ID as an additional field for the Export LC process flow, you can see these fields along with the ones available under the ‘All’ sub-menu, when you click the ‘Export LC’ queue under the ‘Search’ main menu item as shown in the screen below:


ORACLE
Multi Factor Not Authenticated
Entity : ENTITY_ID1
Branch : 000
2014-01-01
Window
YAMUNA5
Home
Interactions
Customer
Workflow
Tasks
Preferences
Task List - Search
Workflow Reference
Transaction Reference
Title
Assignee Group
RM ID
Outcome
Channel
Assignee Users
Customer Name
Originated By
Status
Search
Comments
Amount
Reminder
Creation Date(From\To)
Currency
Priority
Warning Time
Escalation Time
Acquire
Release
Resume
Reassign
Escalate
Copy
Stage Status
Page 1 Of 1
Jump to page
Go
Workflow Reference
Transaction Reference
Title
Assignee Group
Assignee Users
Customer Name
Originated By
Status
Comments
Amount
Creation Date(From\To)
Priority
Channe
000OSAC3458 Receive And Verify ALLROLES-000 CHANDANA YAMUNA5 RECVNVFY 2017-11-15 10:36:11 IST Low FLEXCUBE
000OSAC3459 Receive And Verify ALLROLES-000 CHANDANA YAMUNA5 RECVNVFY 2017-11-15 10:49:49 IST Low FLEXCUBE
000NRLC3460 Retail Loan Creation - Application Entry ALLROLES-000 2017-11-15 11:48:03 IST Low
000OCAC3477 RecieveandVerifyCustDetails ALLROLES-000 2017-11-15 13:10:43 IST Low
000OSAC3499 Receive And Verify ALLROLES-000 SWIFTCHK YAMUNA5 RECVNVFY 2017-11-15 18:24:20 IST Low FLEXCUBE
000OSAC3517 Receive And Verify ALLROLES-000 CHANDANA YAMUNA5 RECVNVFY 2017-11-16 10:54:00 IST Low FLEXCUBE
000OSAC3518 Receive And Verify ALLROLES-000 CHANDANA YAMUNA5 RECVNVFY 2017-11-16 11:49:42 IST Low FLEXCUBE
History
Interactions
Documents
Advices
Schedule

1.2 User's Dashboard

Origination module provides a facility to display the customized dashboard to summarize the activities which are pending for the user to perform an action. From the Dashboard, user is allowed to perform various actions like acquire task, release task, process the task, reassign the task based on the accessibility / rights for that specific user and his roles. Dashboard can be defined for specific roles or a specific user level

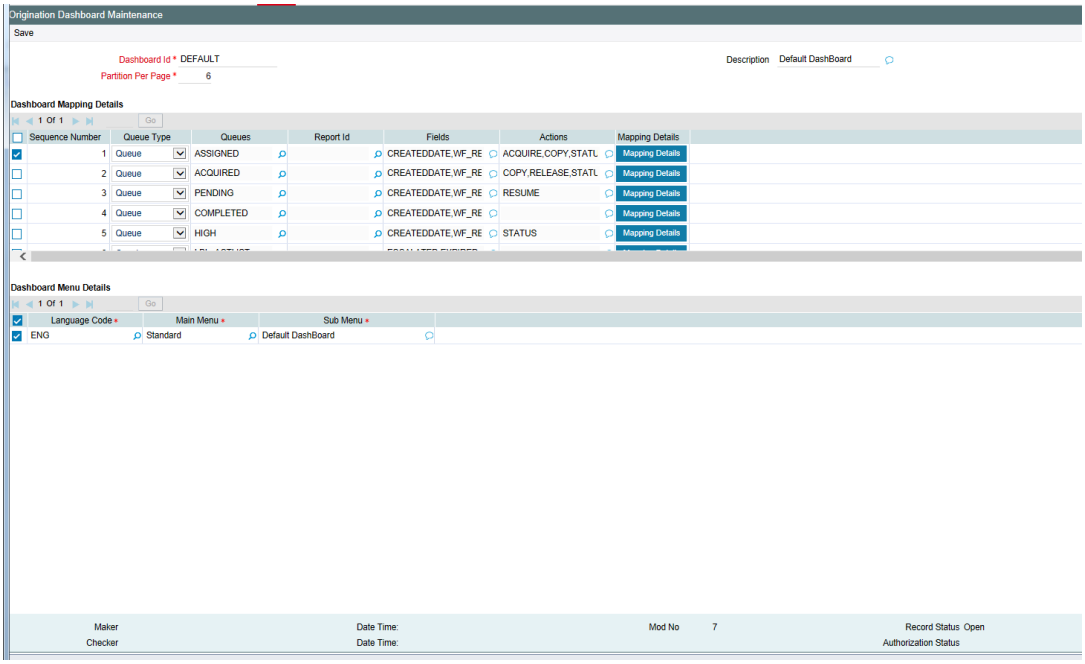


Dashboard entities can be defined to display a BAM report, queue condition, summary of Queue, Task count for a specific queue. Maintenance screen has been provided to configure the dashboard entities which can be part of the user's dashboard and user's access rights to view the dashboard.

System support to define multiple user's dashboard and accessible dashboard is displayed in the Dashboard section of the left tree view Pan. On selecting the specific dashboard, the corresponding linked dashboard entities will be displayed in the Landing page section as show in the above screenshot.

1.2.1 Dashboard Maintenance:

Dashboard maintenance screen allows the user to configure the entities which can be part of the user's dashboard. You can launch the maintenance screen by selecting the "Origination->Maintenance->Dashboard" in the left pan or use the "ORDDSHMT" function id in the fast path menu.



In this screen, you are required to specify the following details:

Dashboard Id

Specify a unique identification code for the dashboard.

Dasboard Descirption

Specifiy the detailed description for the dashboard

Main Menu

Sepcify the main menu under which the dashboard needs to be displayed.

Language Code

Specify the language code

Sequence Number

Specify the sequence order number to display the entieies in the dasboard. Systrem will dispaly the entities in the specified order.

Queue Type

Specify the type of the entities which has been associated with the dashboard.The supported entities are BAM reports, Queue, summary and count

- BAM reports : select this option when a BAM report is associated
- Queue : select this option when a Queue id is associated
- Summary : select this option when a Queue summary is associated
- Count : select this option when a queue count summary is associated

Queues

Specify the valid queue id which has been already defined in the queue defintion. It is applicable only queue type as Queue, summary and count.

Report Id

Sepcify the valid Report id which has been already defined in the BAM report. It is applicatble only queue type as BAM report.

Fields

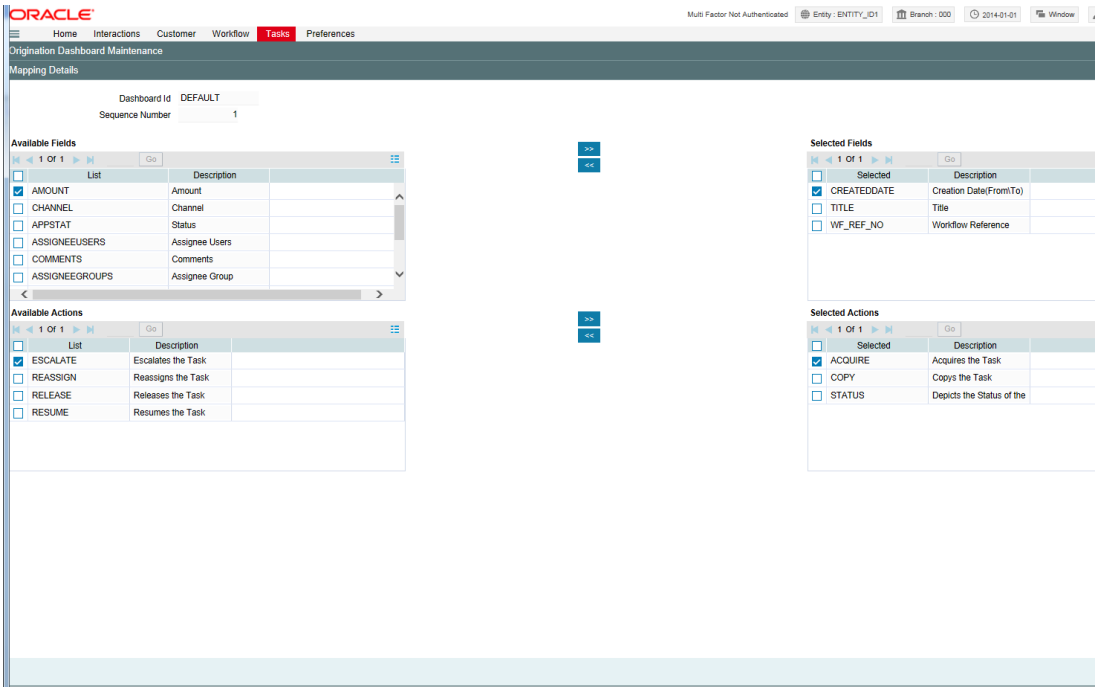
Specify the fileds which needs to displayed in the dashboard view

Actions

Speficy the action which can be performed from the dashboard. Acqurie task, release task, reassign task, hold task, resume task, renew task are available to associate.

Mapping fields

System launches a new window to specify / customize the fields and actions which can be performed in the dashboard as shown below



In this screen, you are required to specify the following details:

Available Fields

System displays the list of field attributes which are available to opt in the dashboard. You can select the fields from the list by using the “>” “<” buttons. The selected fields will be moved to “Selected fields” section.

Available Actions

System displays the list of action which are available to opt in the dashboard. You can select the fields from the list by using the “>” “<” buttons. The selected fields will be moved to “Selected action” section

Selected Fields

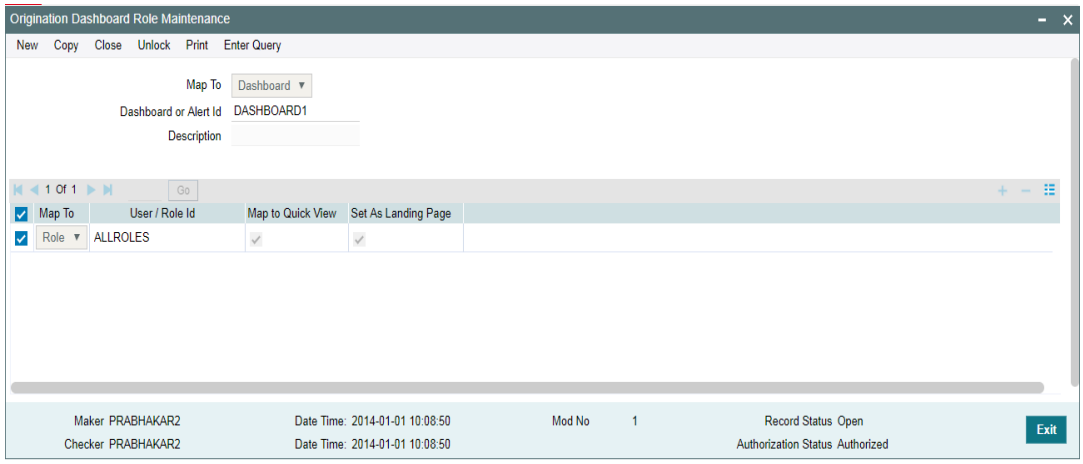
User selected fields from the available fields. The selected fields will be displayed in the dashboard.

Selected Actions

User selected actions from the available fields. The selected action will be available in the dashboard to perform.

1.2.2 Dashboard Role Maintenance:

Dashboard role maintenance allows you to specify the users who can access the dashboard from the dashboard menu section. System allows selecting specific role / user from the selection window to provide access to the dashboard. In case a role is selected, the users who are associated to those specific roles can view the dashboard and perform the action. You can launch the maintenance screen by selecting the “Origination->Maintenance->Dashboard Role” in the left pan or use the “ORDDSHRL” function id in the fast path menu.



In this screen, you are required to specify the following details:

Dashboard Id

Specify the dashboard identification to define the access rights

Description

Dashboard description. It is populated when a dasboard id is selected

Map to

Specify the associate / mapping attribute for the dashboard.

- Role – In case a role is assciated / mapped to the dashboard
- User – in case a user is associated / mapped to the dashboard

User / Role Id

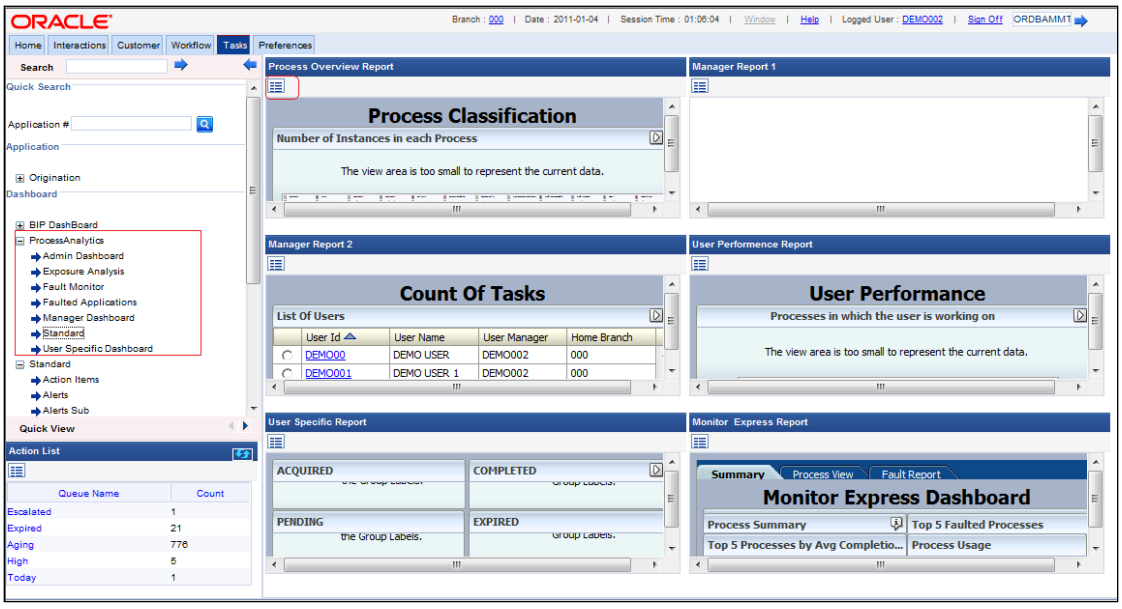
Specify the user id / role id from the LOV to mapp / associate the dashboard. In case users has been selected, the dashboard is accessible only for that specific users. In case role has been selected, the dashbord is accessible to all users who are associated to that specific role

Default

Specify the dashboard as default dashboard to that specific user / role.

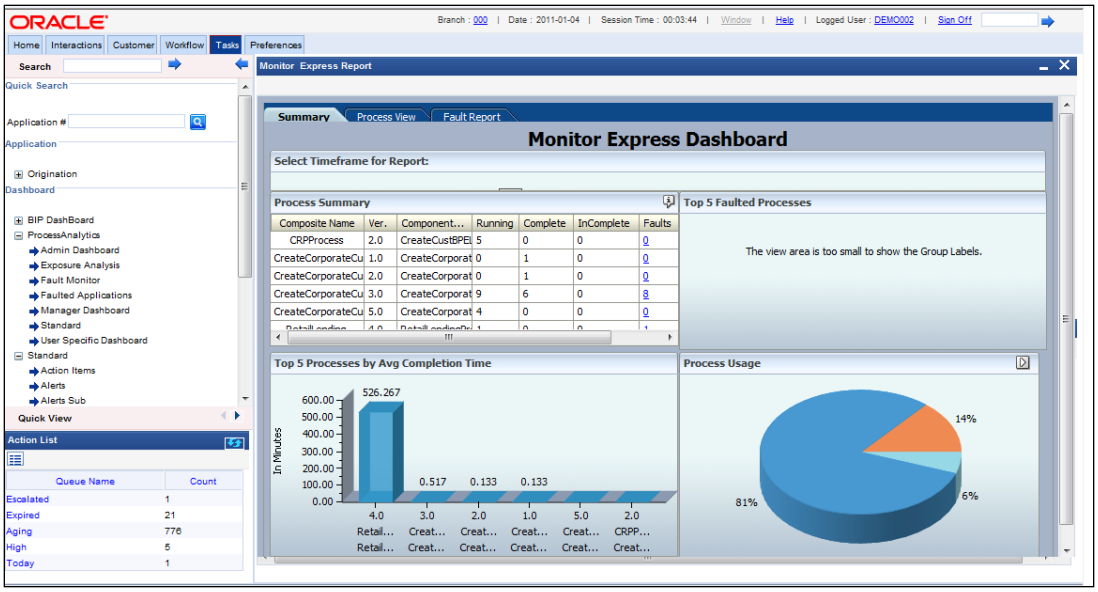
1.3 BAM Dashboard

Origination module provides a facility to business administrator to monitor the task status and process specific statistical information through the customized BAM (Business activity monitoring) reports. Multiple user defined BAM reports are grouped in BAM dashboard and available to view and analysis the statistical data to improve the business.



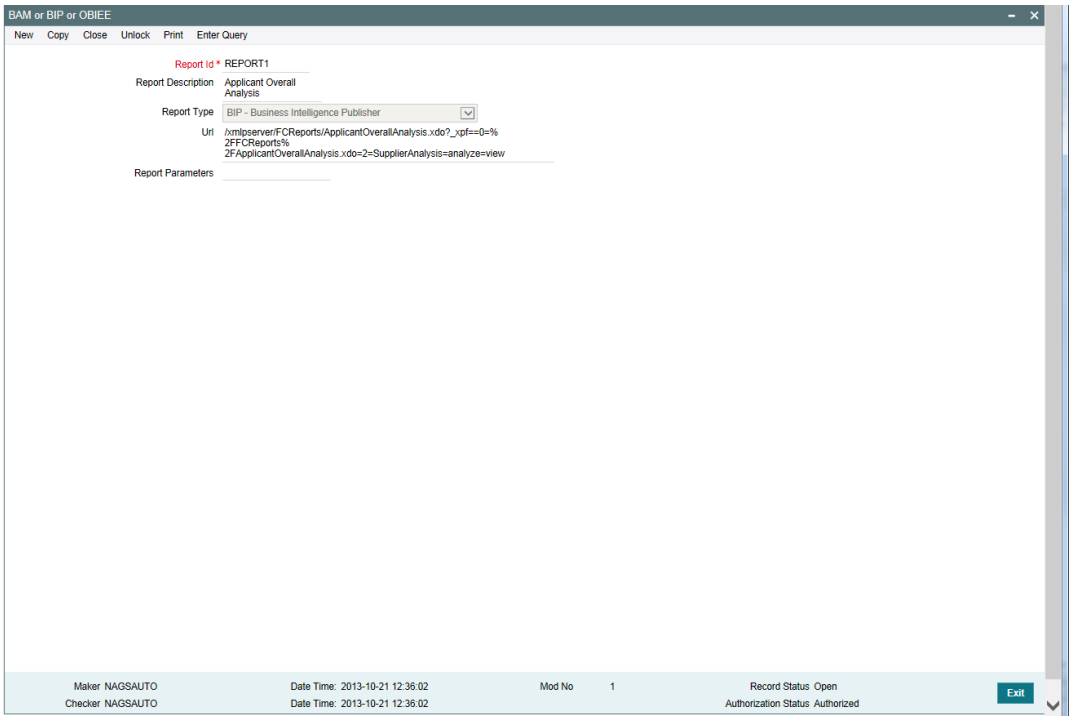
The accessible dashboards are available in the “Dashboard” section under “Process Analysis”. The selected BAM dashboard will be displayed in the “Landing Page” window.

User can view the individual reports by clicking the “Blow UP” button available in the dashboard BAM reports. The maximized “Monitoring express dashboard” is shown below.



1.3.1 BAM Report Maintenance:

BAM report maintenance screen allows the user to configure and associate the predefined BAM report to the Origination menu. You can launch the maintenance screen from the menu by selecting “Origination->Maintenance->BAM” or use the “ORDBAMMT” function Id to launch the screen from the fast path.



In this screen, you are required to specify the following details:

Report Id

Specific a unique reference for the BAM report.

Report Description

Specify a detailed description for the BAM report. It will be displayed in the report header while configuring the report in the BAM dashboard

Url

Specify the valid BAM report URL which will be launched while selecting the report

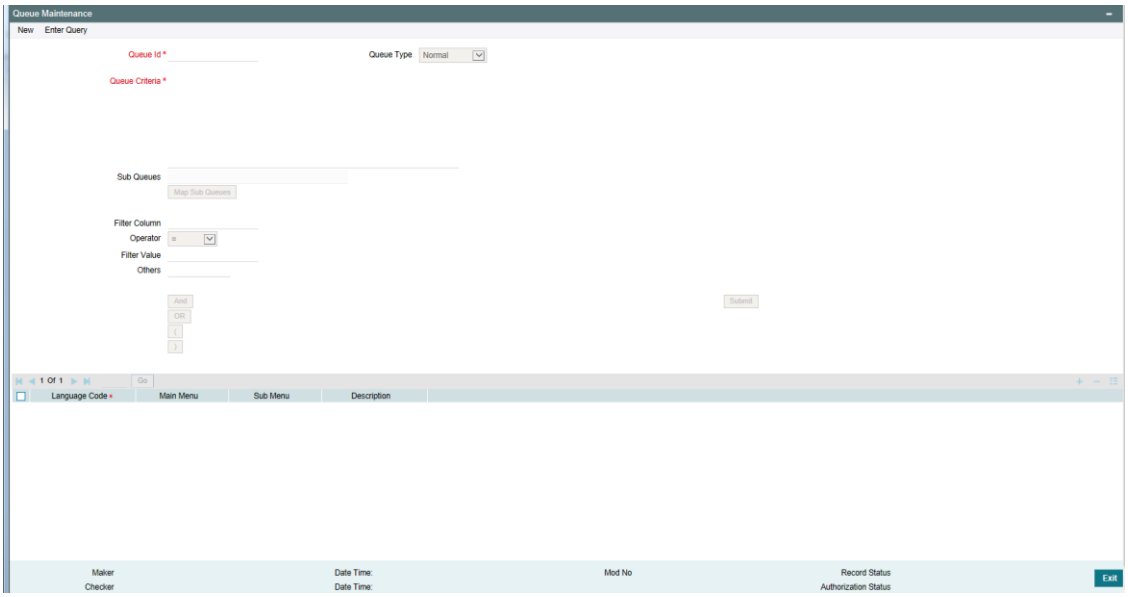
Report Parameters

Specify the parameters which are used for the BAM report.

1.4 Configuring Queues

A queue represents a set of human tasks that are grouped on the basis of the common characteristics they share. For instance, you could have groups based on whether the tasks have been completed, deleted or the type of transaction.

You can define the basis for grouping for each queue in the ‘Queue Maintenance’ screen. To invoke this screen, type ‘SMDQUEMT’ in the field at the top right corner of the Application tool bar and click the adjoining arrow button. The following screen is displayed:



In this screen, you are required to specify the following details:

Queue ID

Specify a unique identification code for the queue.

Queue Type

Indicate the type of tasks that should be displayed for the queue you are defining. Select one of the following values from the adjoining drop-down list:

- Editable tasks: Tasks where the user will be allowed to modify existing data.
- Read-only Tasks: Tasks where the user can only view existing information.
- Normal Tasks – All the tasks for which the user has rights (editable/read-only)
- Supervisor – All tasks pertaining to the all the subordinates of the user.
- Current stage – The current stage of a process instance in which the user has performed at least one task.

Queue Criteria

Specify the criteria to be used to filter all tasks. The criteria specified here and the queue type you have indicated earlier determine the tasks that are displayed under each queue.

You can also associate Function IDs to queues by specifying them here. If you do so, only those Function IDs that have been associated can be accessed by the user. If there is no such association in the criteria, all Function IDs will be made available for the queue.

Filter Column

Indicate the basis for filtering the tasks.

Operator

Indicate the operator.

Filter Value

Specify the value to be considered for filtering.

Others

If ‘Filter Value’ chosen is ‘Others’, you can specify the value here.

Language Code

Indicate the language code to be used for the queue ID.

Main Menu

Indicate the name of the group under which the queue should be placed.

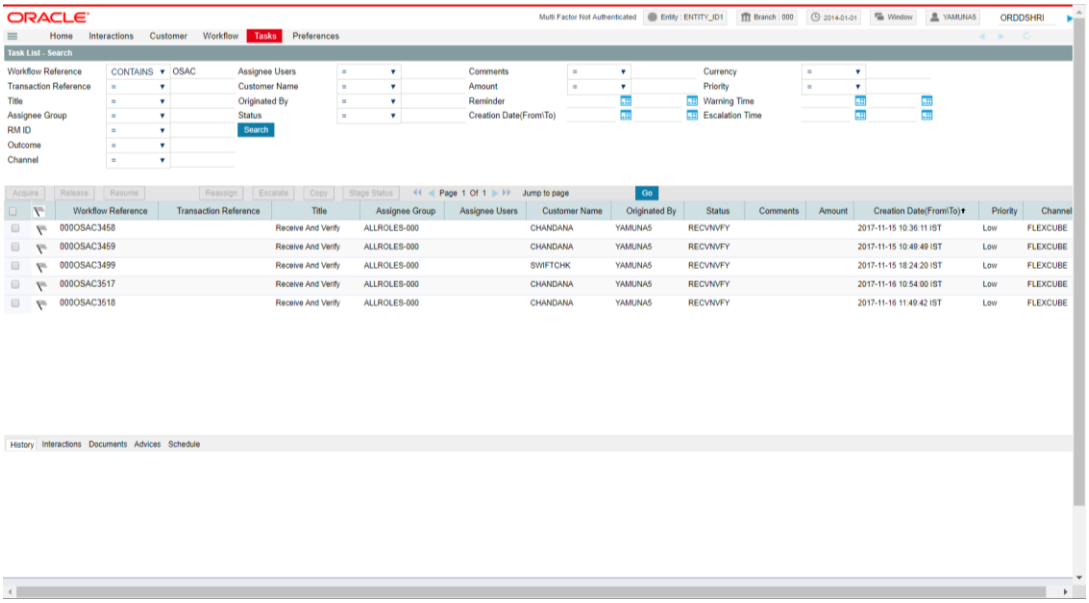
Sub-Menu

Specify the name for the queue. This will appear under the Main Menu.

Description

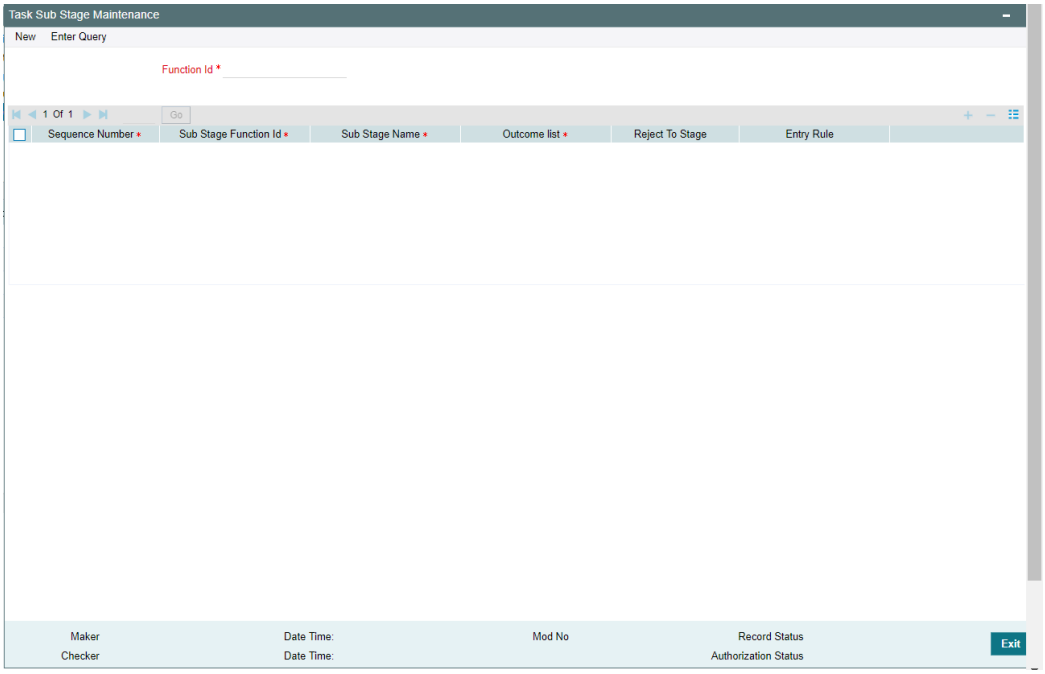
Specify a relevant description that will be displayed when you point the mouse on the Sub-Menu.

Workflow places the tasks that meet the criteria specified for each queue as shown below:



1.5 Configuring Sub-Stages

In the BPEL workflow layer, there are several points at which human tasks are generated. These tasks can be further divided into sub-stages which have entry conditions, exit outcomes etc. You can capture these details in the 'Task Sub Stage Maintenance' screen. You can invoke this screen by typing 'SMDSUBST' in the field at the top right corner of the Application tool bar and clicking the adjoining arrow button. The following screen is displayed:



You are required to maintain the following details in this screen:

Function ID

Specify the Function ID associated with the human task for which you are defining sub-stages. The adjoining option list displays all valid function IDs available in the system. You can select the appropriate one.

Seq No

The system displays the sequence number for the current sub-stage.

Sub Stage Function Id

Specify the Function ID for the sub-stage. The adjoining option list displays all valid function IDs available in the system. You can select the appropriate one. The roles and the screen displayed for the sub-stage are fetched accordingly. This can be the same as the main Function ID for the task.

Sub Stage Name

Specify a unique name for the sub-stage.

Outcome List

Specify the possible outcomes allowed for this sub-stage. You can have any of the following:

- MOVENXT: If this is chosen, the current Function ID screen will be closed and the process will move on to the next sub-stage in sequential order
- AUTOMOVENXT: If this option is selected, the task will go to the next stage. The next sub-stage will be acquired automatically (provided the user has the relevant rights). The Function ID of the next sub-stage will be displayed in the screen.
- MOVEPREV: If this is chosen, the task will be moved to the previous stage mentioned or to the sub-stage sequence number specified in the 'Reject To Stage' field.

To facilitate this configuration, you need to map the first sub-stage to the Function ID of the human task. Also, you will be allowed to select only the 'MOVEPREV' option for the last sub-stage you have defined.

Entry Rule

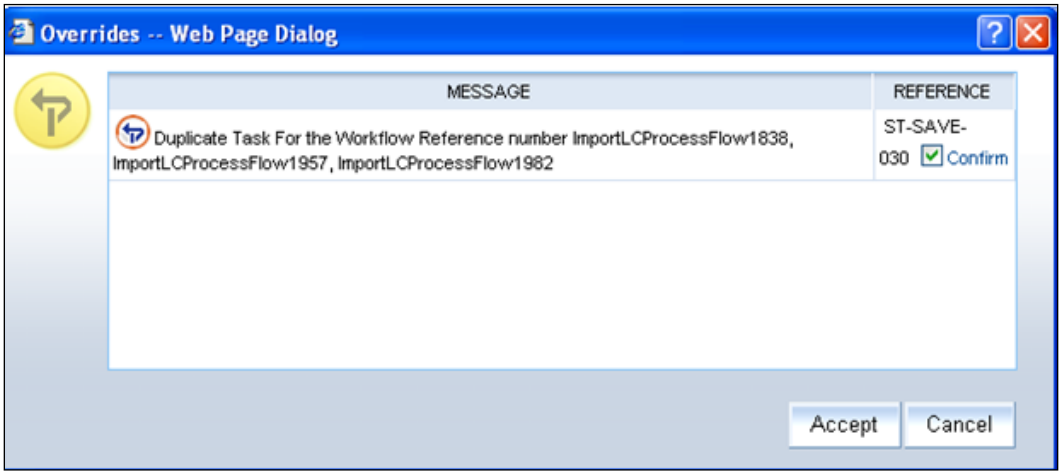
Specify the conditions that need to be fulfilled for this sub-stage to be initiated. The specification is done in the same syntax as that for the queue configuration. If the criteria specified are satisfied, then the transaction comes to this sub-stage. If not, it moves to the next sub-stage.

Reject To Stage

This is the sub-stage to which a task is sent to in case the task is rejected at any point in the sub-stage process. If you do not specify any value for this, a rejected task will be sent to the previous level.

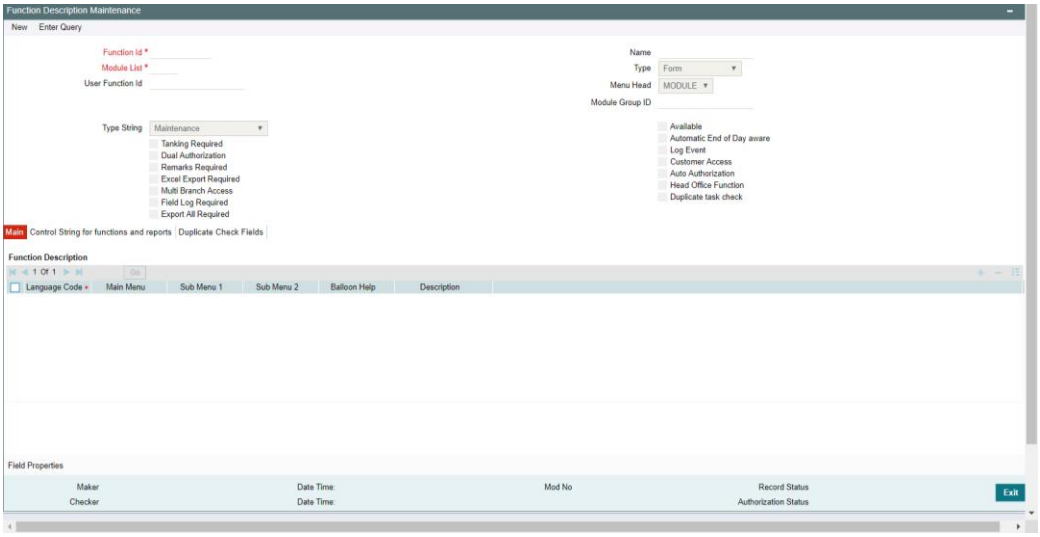
1.6 Checking Duplicate Transactions

During initiation of a process flow, when you enter and save the data, the system checks for duplicate transactions among all authorized and unauthorized tasks carried out on the same day. This check is performed based on a list of fields maintained for every transaction type. If duplicate transactions exist, the system will display an override message containing the Workflow reference numbers of all the matching tasks, as shown below:



You can however, override the message and continue with the current process.

You can define the fields that need to be matched for duplication in the 'Function Description Maintenance' screen. You can invoke this screen by typing 'SMDFNDSC' in the field at the top right corner of the Application tool bar and clicking the adjoining arrow button.



In this screen, you are required to indicate the following details to facilitate checking for duplicate transactions:

Duplicate Check

Check this box to ensure that a validation is carried out to track duplication of transactions.

Field Name

Specify the field that should be the basis on which transaction duplication is checked.

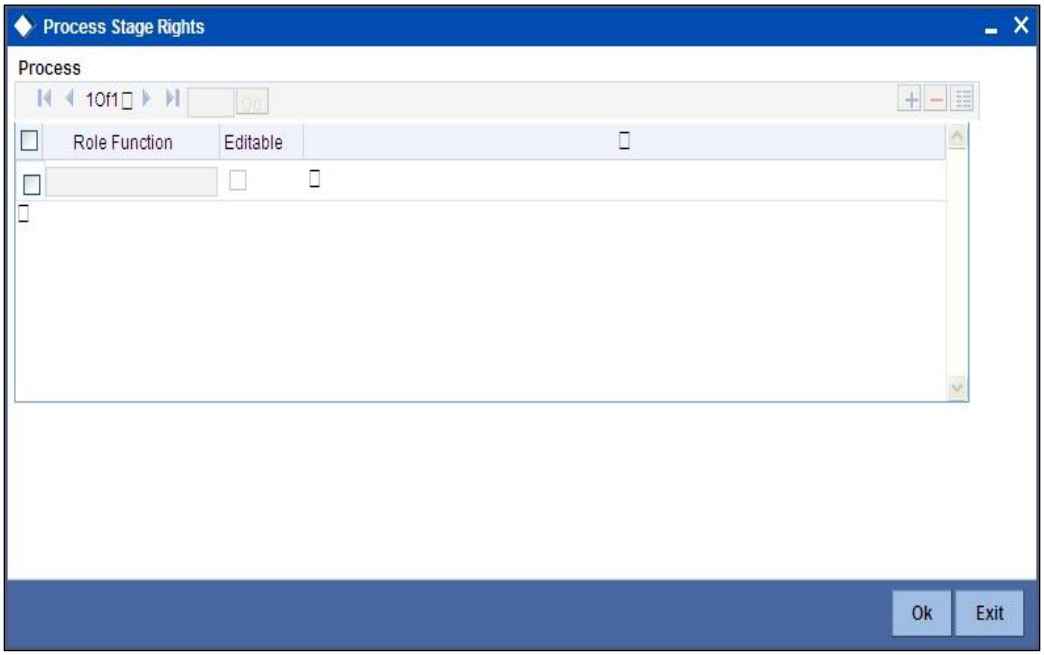
Enabled

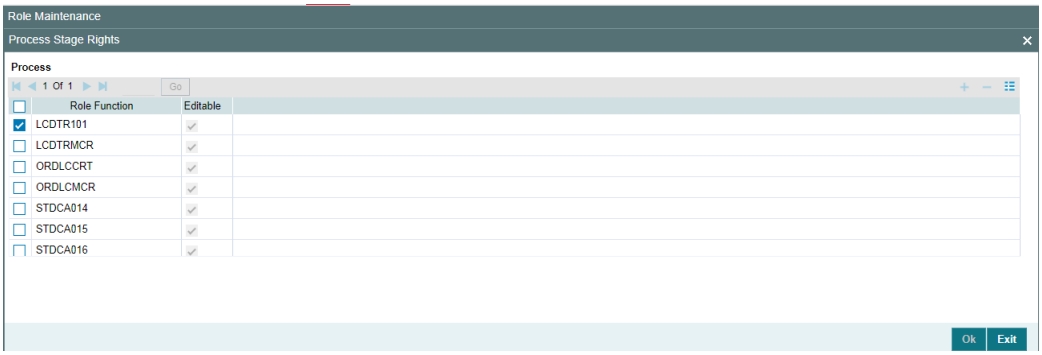
Check the box against each field whose values you want the system to compare across transactions.

1.7 Enabling User Rights

As mentioned earlier, each human task has a Function ID and the roles assigned to the Function ID are inherited by the task when it is initiated. A user, with access rights to the Function ID for the task, can either view the details of the task or perform edit operations on it.

You can define these rights in the 'Process Stage Rights' screen. To invoke this screen, type 'SMDROLDF' in the field at the top right corner of the Application tool bar and click the adjoining arrow button. In the 'Role Maintenance' screen that is displayed, click 'Process Rights' button. The following screen is displayed:





Specify the following details in the screen:

Role Function

Specify the Function ID for which you wish to define rights. The adjoining option list displays all valid function IDs available in the system. You can select the appropriate one.

Editable

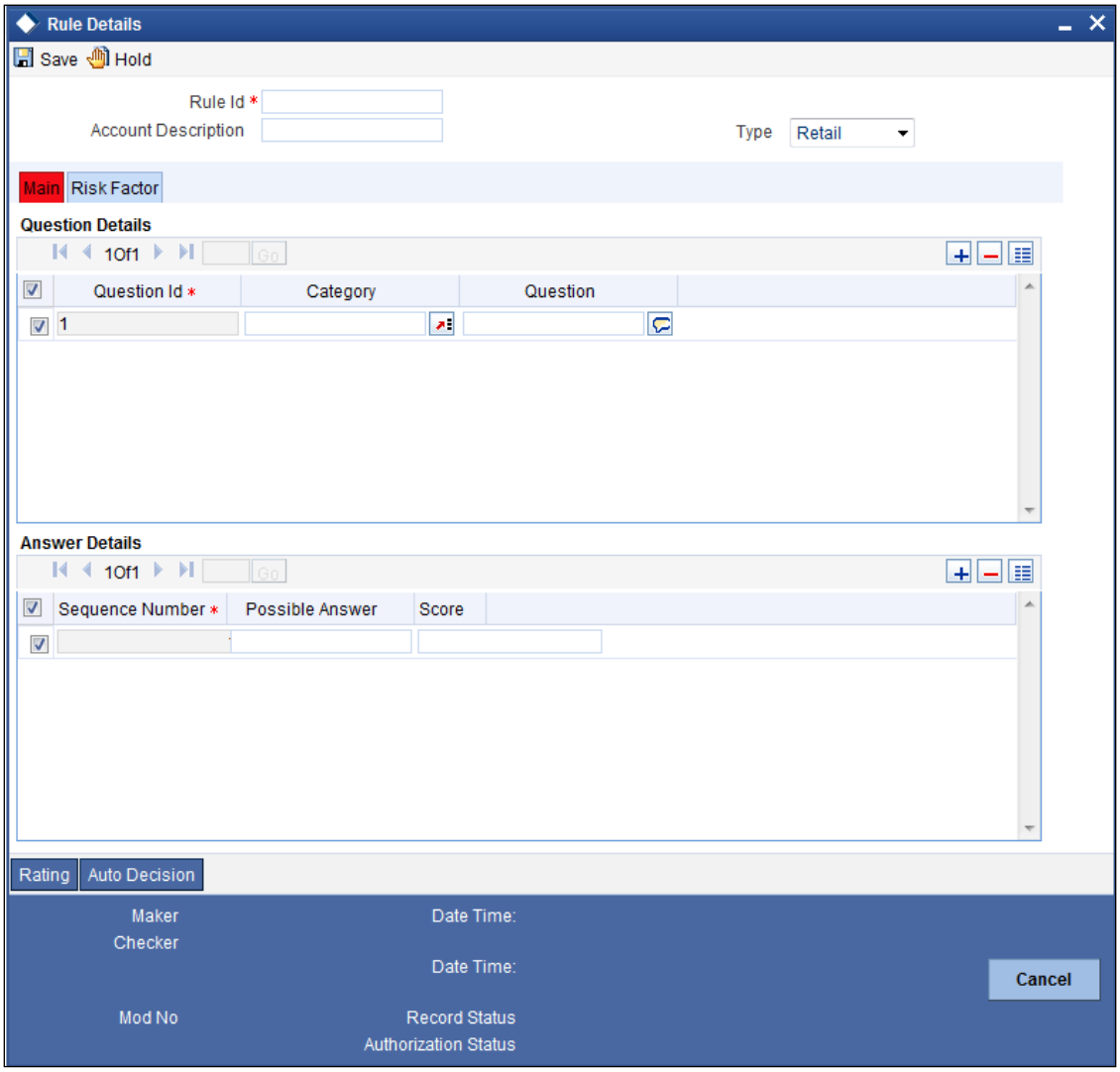
Check this box if you wish to allow editing of data for this task/Function ID. If you do not check this box, the user can only view details for the role function specified earlier.

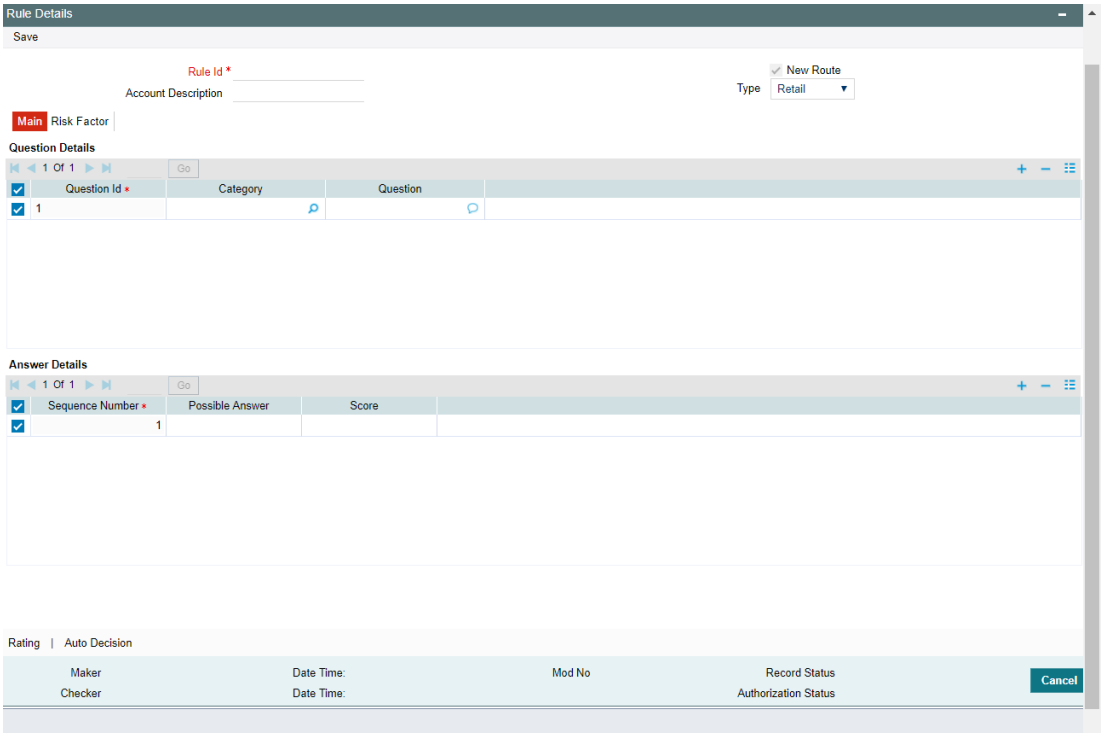
You can, therefore, use this screen to allow only editing or only modifying rights for a user for different role functions.

1.8 Maintaining Credit Rating Rules

You can maintain a set of questions along with a possible set of answers with associated scores, to assess the credit rating of a prospective loan customer. You can also calculate the risk factor associated with the loan and arrive at a credit grade based on the scores obtained.

You can maintain these details in 'Rule Details' screen. You can invoke this screen by typing 'ORDRULMT' in the field at the top right corner of the Application tool bar and clicking the adjoining arrow button.





You can specify the following details in this screen:

Rule Id

Specify a unique identification for the credit rating rule.

Account Description

Specify a suitable description for the credit rating rule.

Type

Select the type of the loan from the following options available:

- Retail
- Corporate

1.8.1 Main Tab

You can maintain the following details in this tab:

Question Details

Question Id

The question Id is automatically generated by the system.

Category

Select the category to which the question belongs from the option list provided.

Question

Specify the question to be asked to the prospective customer to derive the credit rating score.

Answer Details

Sequence Number

The sequence number is automatically generated by the system.

Possible Answer

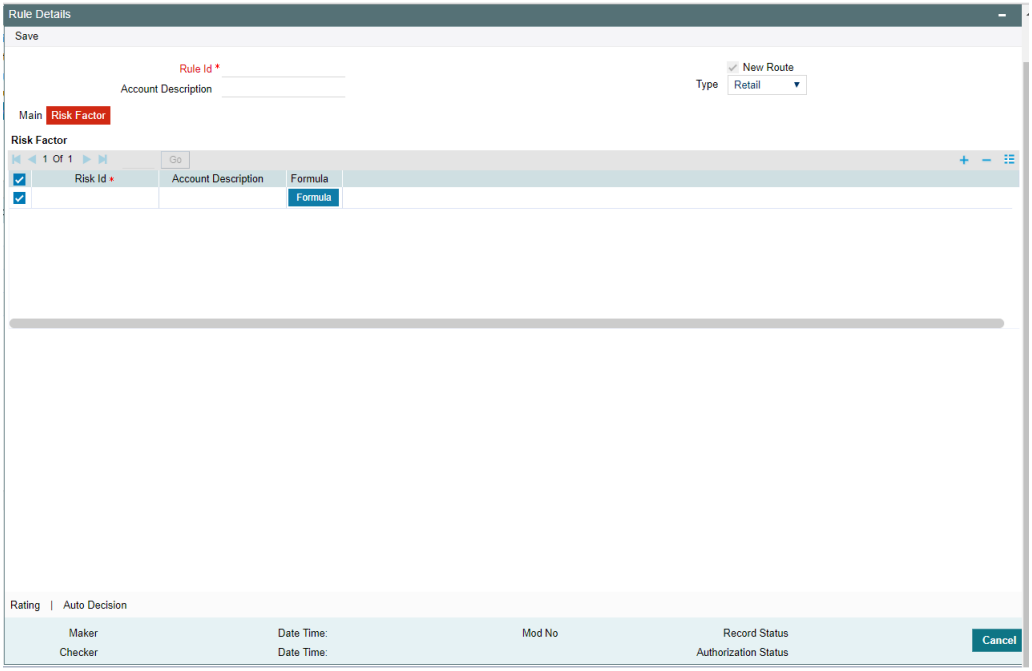
Specify a set of possible answers to be associated with a question.

Score

Specify the score associated with an answer.

1.8.2 Risk Factor Tab

You can specify the risk details associated with the loan and also indicate the formula for calculating the credit score in this tab.



You can specify the following details here:

Risk Id

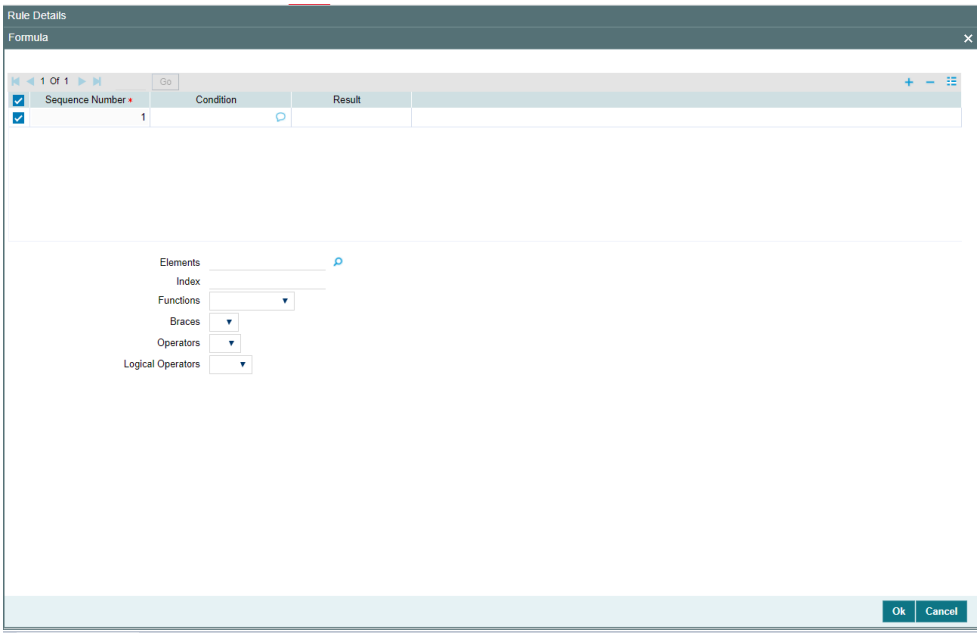
Specify a unique identifier for the credit risk being maintained.

Description

Specify a suitable description for the credit risk.

1.8.2.1 Specifying Formula Details

You can specify the formula to calculate the credit score by clicking the ‘Formula’ button corresponding to a credit risk entry in Risk Factor tab. The ‘Formula’ screen is displayed where you can specify the condition for calculating the credit score associated with a risk condition.



You can specify the following details here:

Sequence Number

The sequence number is automatically generated by the system.

Condition

The condition specified using the Elements, Functions, Operators etc. gets displayed here.

Result

Specify the result to be associated with the condition specified.

Elements

Specify the data elements to be used to define the formula for credit score calculation or select the element from the option list provided.

Functions

Select the mathematical function to be used to define the formula from the drop-down list provided.

Braces

Select the opening or the closing brace from the drop-down list provided, to define the credit score calculation formula.

Operators

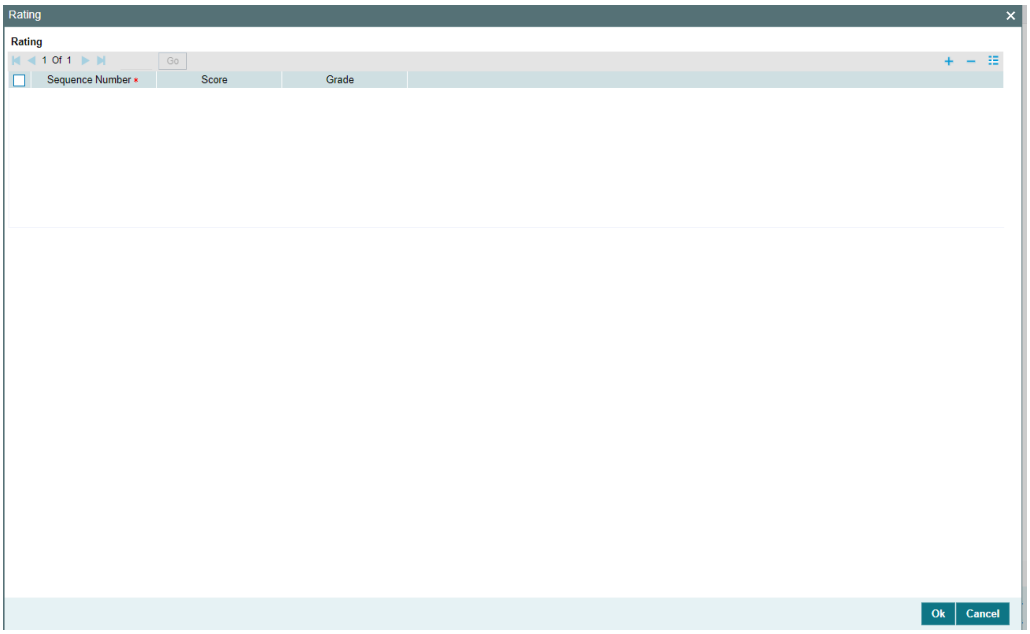
Select the mathematical operator to be used to define the credit score calculation formula. You can select '+', '-', '*', or '/'.

Logical Operators

Select the logical operator to be used to define the credit score calculation formula. You can select '<', '>', '=', '<>', '>=', '<=', 'AND' or 'OR'.

1.8.3 Specifying Credit Grades

You can maintain different credit grades based on the credit scores obtained. Click 'Rating' button in Rule Details screens to invoke the 'Rating' screen, where you can maintain these details.



You can specify the following details here:

Sequence Number

The sequence number is automatically generated by the system.

Score

Specify the score associated with a credit risk.

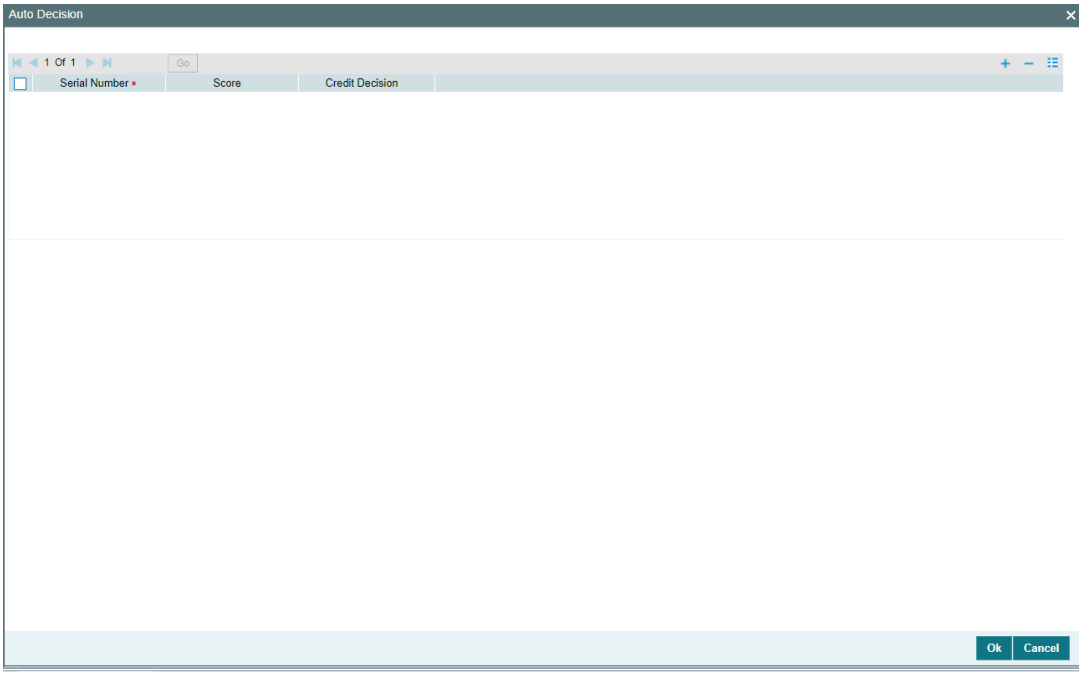
Grade

Specify the credit grade based on the score obtained.

1.8.4 Specifying Auto Decision Details

While creating a loan, you need to decide whether the applicant is eligible to receive a loan from the bank. Auto Decision feature in Oracle FLEXCUBE decides whether to approve or reject an application. It also gives the stipulations or reasons for the decision.

To use this feature, you need to maintain the Auto Decision details in 'Auto Decision' screen.



Specify the following details:

Serial Number

The system displays the serial number.

Score

Specify the maximum credit score of the loan applicant for the system to make the corresponding auto decision.

Auto Decision

Specify the auto decision to be made for each credit score. You can maintain the maximum credit scores for each of the following decisions:

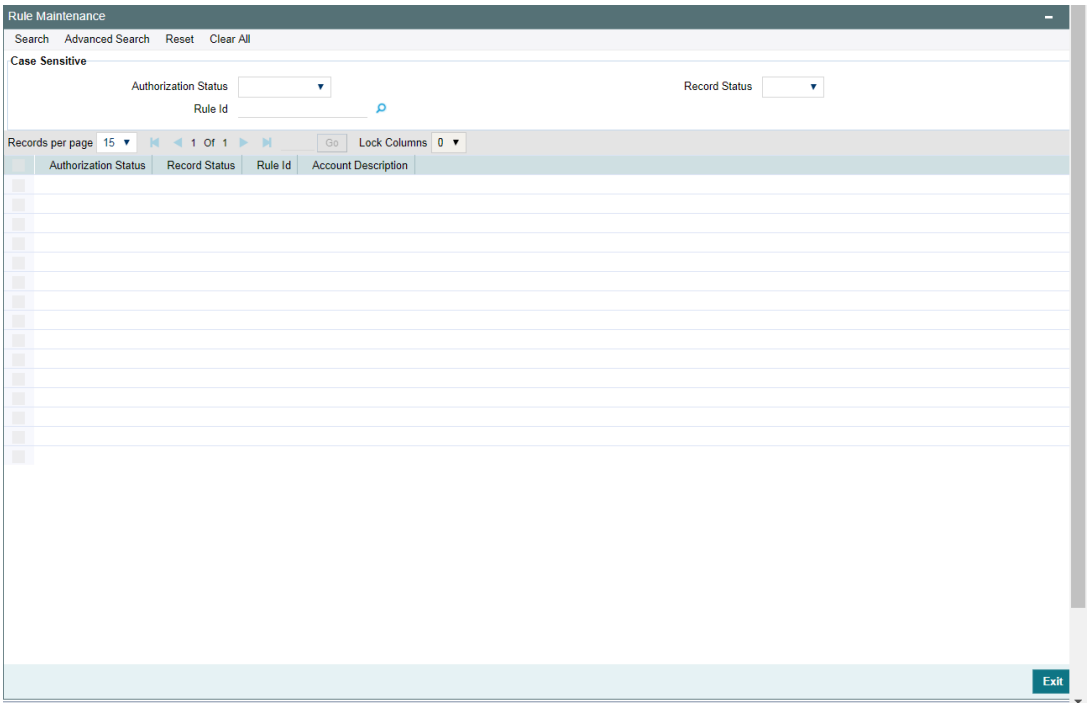
- Auto Approved
- Recommend Approval
- Recommend Reject
- Auto Rejected

While creating a loan, based on the applicant's credit score and auto decision mapping maintained in here, the system decides whether to approve, reject, recommend approval or recommend rejection of the application.

1.9 Viewing Credit Rule Summary

You can view a summary of the credit rules in 'Rule Maintenance' screen. You can also query for a particular record based on desired search criteria.

You can invoke this screen by typing 'ORSRULMT' in the field at the top right corner of the Application tool bar and clicking the adjoining arrow button.



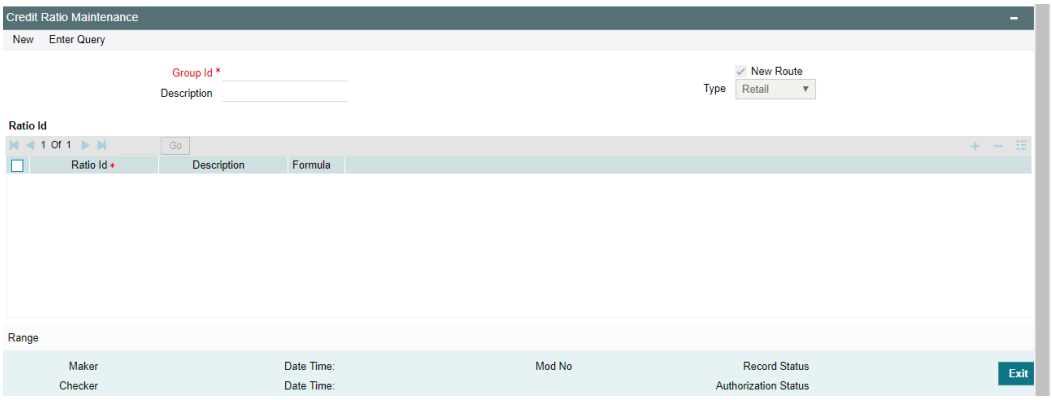
You can specify any of the following details to search for a record:

- Authorization Status
- Record Status
- Rule Id

Click 'Search' button to search for a record based on the search criteria specified. You can double click a desired record to view the detailed screen.

1.10 Maintaining Credit Ratios

You can maintain the rules to calculate the credit ratios in ‘Credit Ratio Maintenance’ screen. You can invoke this screen by typing ‘ORDRATMT’ in the field at the top right corner of the Application tool bar and clicking the adjoining arrow button.



You can specify the following details in this screen:

Group Id

Specify a unique identification code for the ratio group.

Description

Specify a suitable description for the ratio group.

Type

Specify the type of the loan. You can choose one of the following loan types:

- Retail
- Corporate

Ratio Id

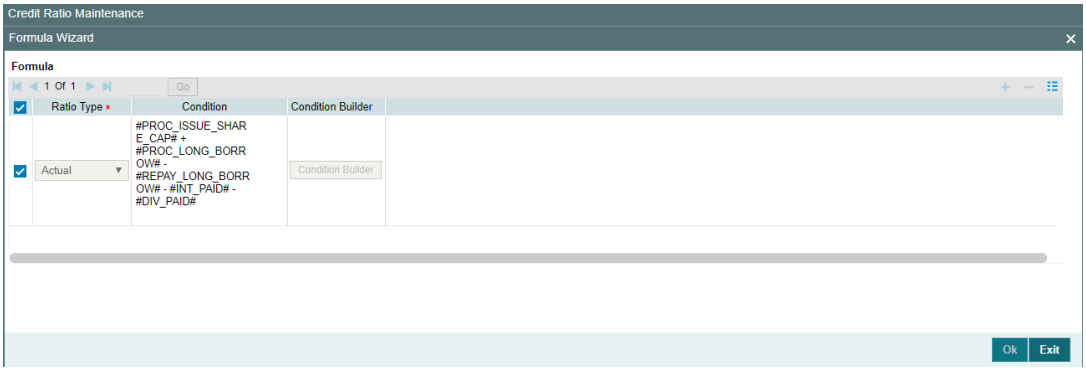
Specify a unique identification for the credit ratio being maintained.

Description

Specify a suitable description for the credit ratio.

1.10.1 Specifying Formula Details

You can specify the formula to calculate the credit ratio by clicking the 'Formula' button corresponding to a ratio Id. The 'Formula' screen is displayed where you can specify the condition for calculating the credit ratio associated with a ratio Id.



You can specify the following details here:

Ratio Type

Select the type of the ratio being maintained, from the drop down list provided. The following options are available:

- Stated Before
- Stated After
- Actual Before
- Actual After

Condition

The condition specified using the Elements, Functions, Operators etc. gets displayed here.

Elements

Specify the data elements to be used to define the formula for credit ratio calculation or select the element from the option list provided.

Functions

Select the mathematical function to be used to define the formula from the drop-down list provided.

Braces

Select the opening or the closing brace from the drop-down list provided, to define the credit ratio calculation formula.

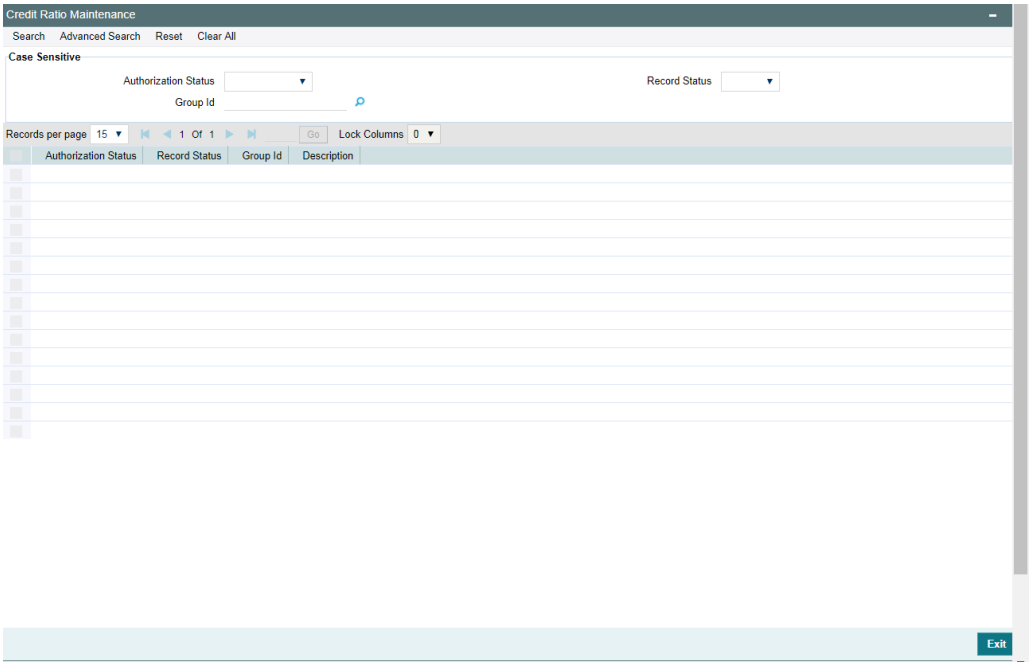
Operators

Select the mathematical operator to be used to define the credit ratio calculation formula. You can select '+', '-', '*', or '/'.

1.11 Viewing Credit Ratio Summary

You can view a summary of the credit ratios in ‘Credit Ratio Maintenance’ screen. You can also query for a particular record based on desired search criteria.

You can invoke this screen by typing ‘ORSRATMT’ in the field at the top right corner of the Application tool bar and clicking the adjoining arrow button.



You can specify any of the following details to search for a record:

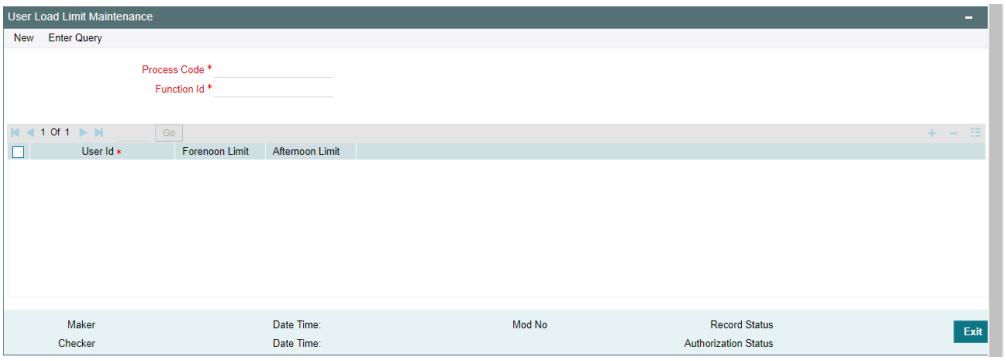
- Authorization Status
- Record Status
- Group Id

Click ‘Search’ button to search for a record based on the search criteria specified. You can double click a desired record to view the detailed screen.

1.12 User load limit Maintenance

Origination module allows the Business administrator to define the load limit for users based on the complexity of the task and the capability of the user. System internally assigns the task to the available user based on the maintenance.

You can launch the maintenance screen from the menu by selecting “Origination->Maintenance->User Load Limit” or use the “ORDLODDT” function Id to launch the screen from the fast path.



In this screen, you are required to specify the following details:

Process code

Specify the process code to which the user load limit is going to be maintained

Function Id

Specify the function id to which the user load limit is going to be maintained for the above mentioned process code

User id

Specify the user code to whom the load limit is going to be maintianed

Forenoon Limit

Specify the task limit whcih can be assigned to the user in in the forenoon session

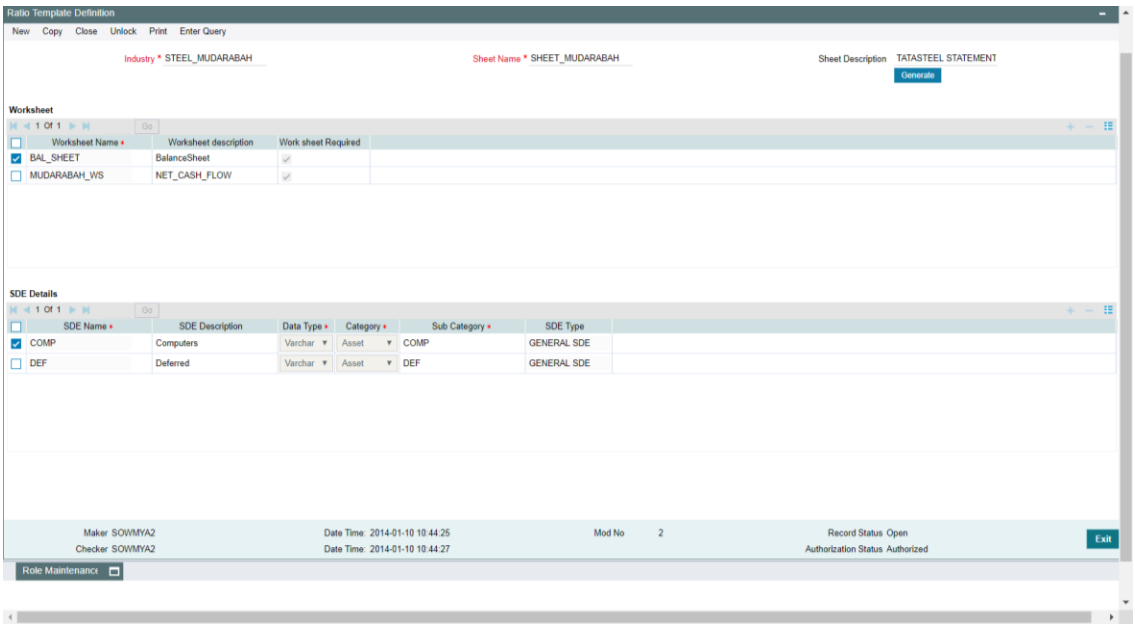
Afternoon Limit

Specify the task limit whcih can be assigned to the user in in the afternoon session

1.13 Raito template definition – Maintenance

Origination module has the capability of computing the ratio elements based on the financial details provided by the customer in a preformatted excel document. You can define multiple excel document template format using SDE elements for industry and financial statement combination.

After the successful definition, press the “Generate” button to generate the financial template document.



In this screen, you are required to specify the following details:

Industry

Specify the unique industry code to which the Ration template is defined

Sheet name

Sepcify the excel template name to which the Ration template is defined

Sheet description

Specify the excel template detailed description

Worksheet name

Sepcify the excel sheet name to which the Ration template is defined

Worksheet description

Specify the excel sheet detailed description

Worksheet required

Specify the flag to indidcate the worksheet is requried to be part of the excel sheet

SDE Name

Select the System defined element,from the LOV, which is used to compute the financial ratio

SDE description

SDE detailed description.

Data type

Specify the data type of the SDE element. Number, Date and Varchar are supported data types.

Category

Specify the category of the SDE element. The major categories Asset, Liability, income and expense are supported.

Sub category

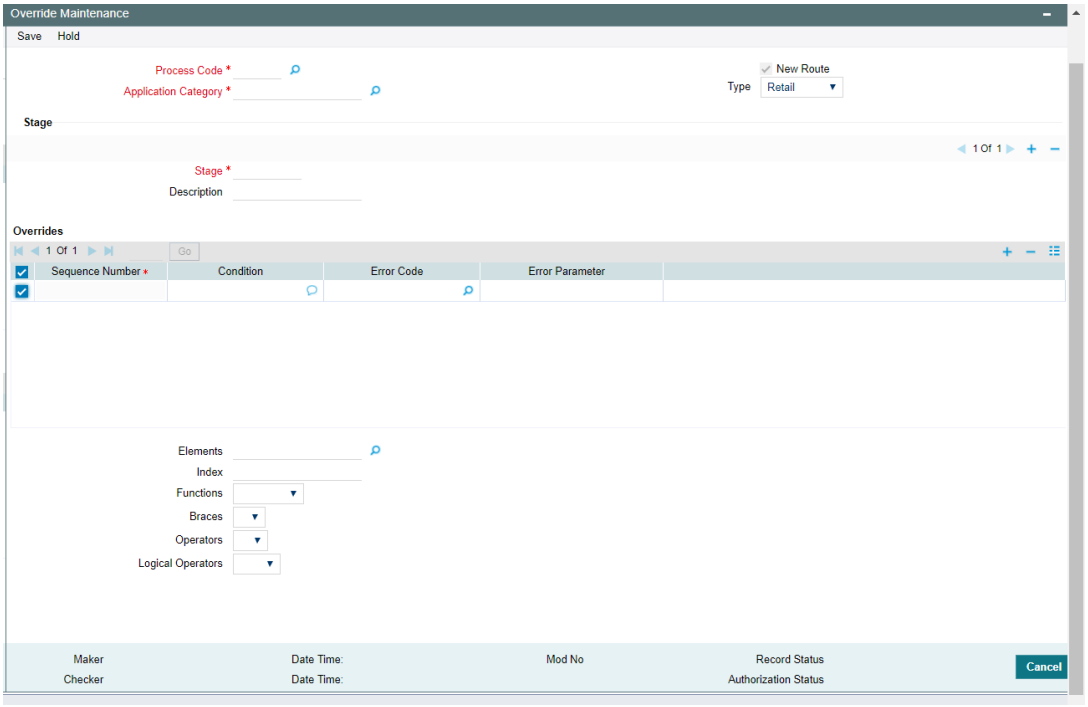
Specify the sub category of the SDE element . it will be used to group the SDE elements

SDE type

Display field to display the type of the System defined element.

1.13.1 Maintaining Override Details

You can maintain the formulae to verify if overrides need to be generated dynamically, in 'Override Maintenance' screen. You can invoke this screen by typing 'ORDOVDMT' in the field at the top right corner of the Application tool bar and clicking the adjoining arrow button.



You can specify the following details in this screen:

Process Code

Specify the process code of the process for which you wish to maintain override conditions or select the process code from the option list provided.

Application Category

Specify the category to which the loan application belongs or select the application category from the option list provided.

Type

Select the type of the loan from the following options available:

- Retail
- Corporate

Stage

Select the stage of the loan origination process from the option list provided. The various stages can be Application Entry, Application Verification, Underwriting, Loan Approval etc.

Description

Specify a suitable description for the loan origination stage.

Overrides

Here, you can capture the details of the conditions to be checked for generating override messages.

Sequence Number

The sequence number is automatically generated by the system.

Condition

The condition specified using the Elements, Functions, Operators etc. gets displayed here.

Error Code

Specify the error code to be used to generate the override message or select the error code from the option list provided.

Error Parameter

Specify the error parameter to be substituted in the override messages.

Elements

Specify the data elements to be used to define the conditions for generating override messages or select the element from the option list provided.

Functions

Select the mathematical function to be used to define the condition from the drop-down list provided.

Braces

Select the opening or the closing brace from the drop-down list provided, to define the conditions for generating override messages.

Operators

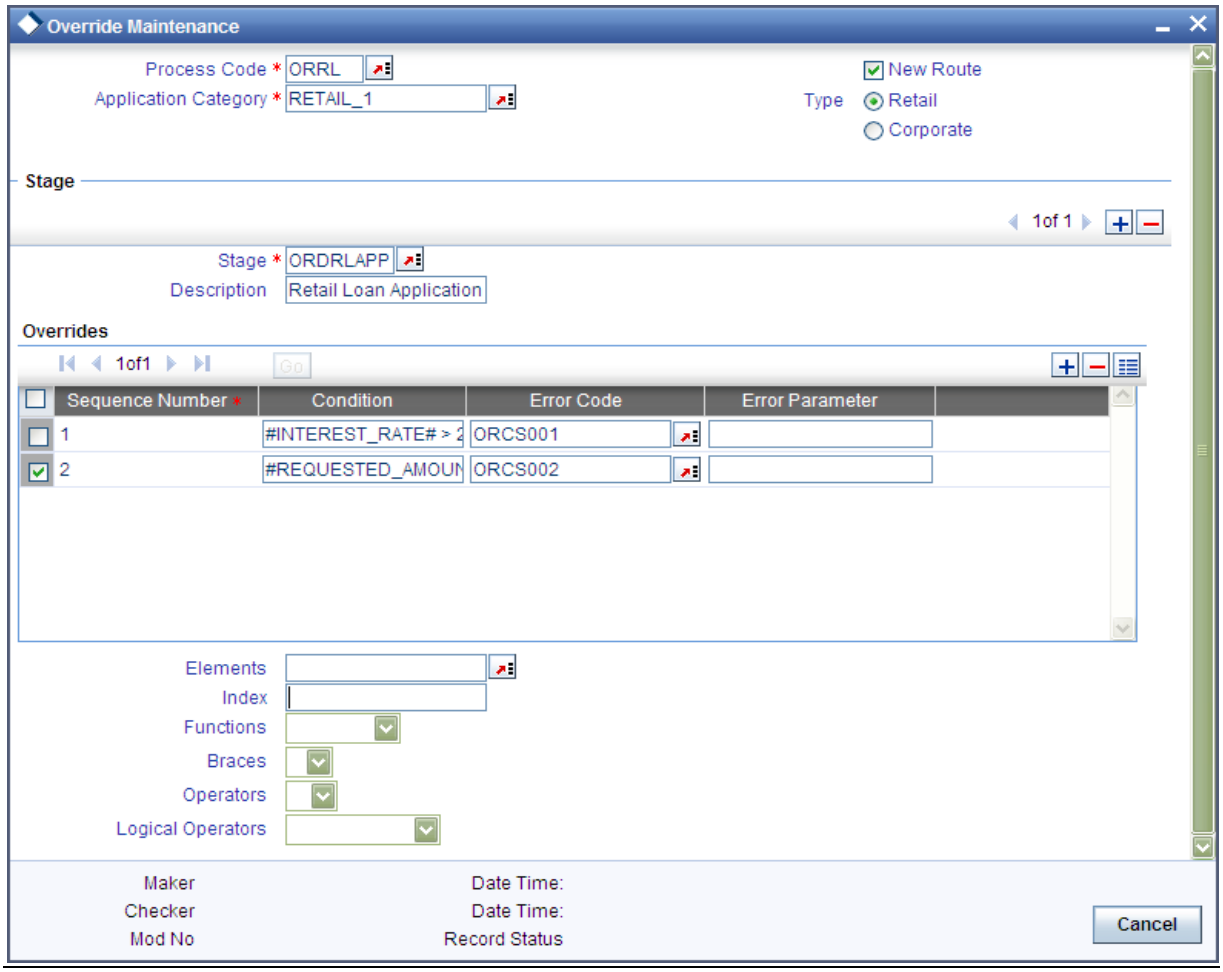
Select the mathematical operator to be used to define the conditions for generating override messages. You can select '+', '-', '*', or '/'.

Logical Operators

Select the logical operator to be used to define the conditions for generating override messages. You can select '<', '>', '=', '<>', '>=', '<=', 'AND' or 'OR'.

1.13.2 Maintaining Override Formulae

- The element corresponding to the fields in the screen can be fetched from the LOV for the field "Element".
- The possible data, or the data limits can be provided in the field "Condition".
- The formula can be drafted in the required way to manage credit guidelines and edits by making use of a predefined number of functions, arithmetic and logical operators.
- Existing error codes can be fetched using the LOV attached to the field, or a new error code can be configured using the Error Maintenance screen (CSDERMSG), if necessary.



For Example:

- A new error code can be configured using the screen CSDERMSG. This error code can also be set as an override if necessary, by maintaining the error-type as 'O'.
- In the Override maintenance screen(ORDOVDMT), the process code 'ORRL' can be selected from the LOV for Retail Lending for the field "Process Code".
- A related application category, say 'RETAIL_1' is selected from the LOV for the field "Application Category".
- The override maintenance is done for all stages of the process flow. Starting with application entry stage, the process code 'ORDRLAPP' is selected from the LOV for the field "Stage".
- The Override condition can be maintained using the Formula-Assistance block as shown below.

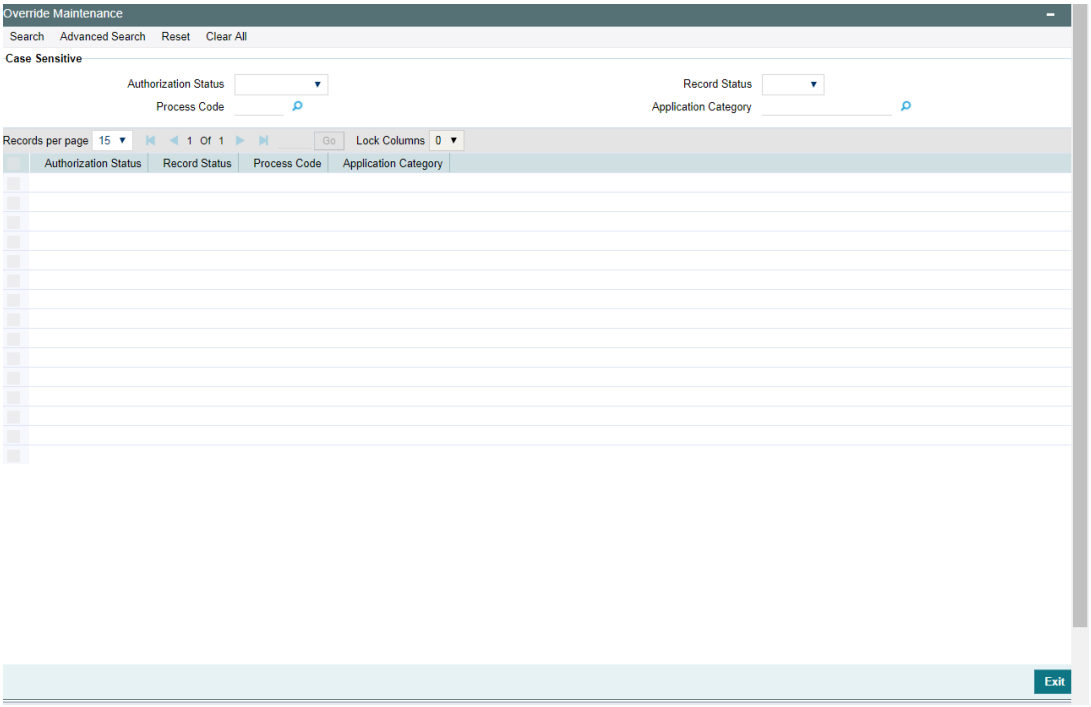
Seq. No.	Condition	Error Code	Error Parameter
1	#INTEREST_RATE# > 25.5 OR #INTEREST_RATE# <= 5.5	ORCS001	

2	#REQUESTED_AMOUNT# >10,000,000 AND #REQUESTED_AMOUNT# <15,000,000	ORCS002	

1.14 Viewing Override Summary

You can view a summary of the overrides in 'Override Maintenance' screen. You can also query for a particular record based on desired search criteria.

You can invoke this screen by typing 'ORSOVDMT' in the field at the top right corner of the Application tool bar and clicking the adjoining arrow button.



You can specify any of the following details to search for a record:

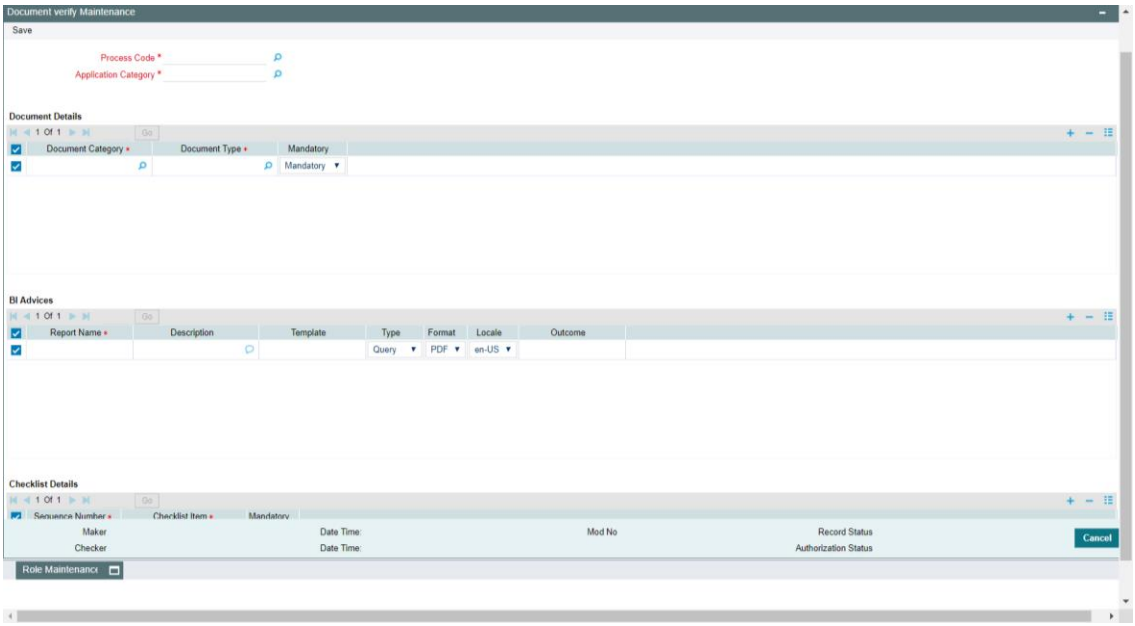
- Authorization Status
- Record Status
- Process Code
- Application Category

Click 'Search' button to search for a record based on the search criteria specified. You can double click a desired record to view the detailed screen.

1.15 Maintaining Document Details

You can maintain the list of documents that are required during the loan origination process, in 'Documents Verify Maintenance' screen. Document checklists are maintained for an application category and for the various stages in the origination process. You can also maintain the details of the Advices that need to be generated on completion of a stage in the process.

You can invoke ‘Documents Verify Maintenance’ screen by typing ‘ORDDOCMT’ in the field at the top right corner of the Application tool bar and clicking the adjoining arrow button.



You can specify the following details in this screen:

Process Code

Specify the process code of the process for which you wish to maintain override conditions or select the process code from the option list provided.

Application Category

Specify the category to which the loan application belongs or select the application category from the option list provided.

Stage

Select the stage of the loan origination process from the option list provided. The various stages can be Application Entry, Application Verification, Underwriting, Loan Approval etc.

Stage Title

Specify a suitable description for the loan origination stage.

Document Details

Document Category

Specify the category to which the document belongs or select the document category from the option list provided.

Document Type

Specify the type of the document or select the document type from the option list provided.

Mandatory

Select the option to indicate whether the document is mandatory or not. You can select any of the following options from the drop-down list provided:

- Mandatory
- Overridden
- Others

BI Advices

Report Name

Specify the name of the advice report to be generated on completion of the process stage.

Template

Specify the template to be used to generate the advice report.

Format

Select the format in which the advice report needs to be generated from the drop-down list provided. The following options are available:

- PDF
- RTF

Locale

Select the locale information to be used for generating the advices from the drop-down list. The following options are available:

- en-US

Out come

Specify the outcome for which the report needs to be generated.

Checklist Details

Sequence Number

The system displays the sequence number.

Checklist Item

Specify the checklist to be maintained.

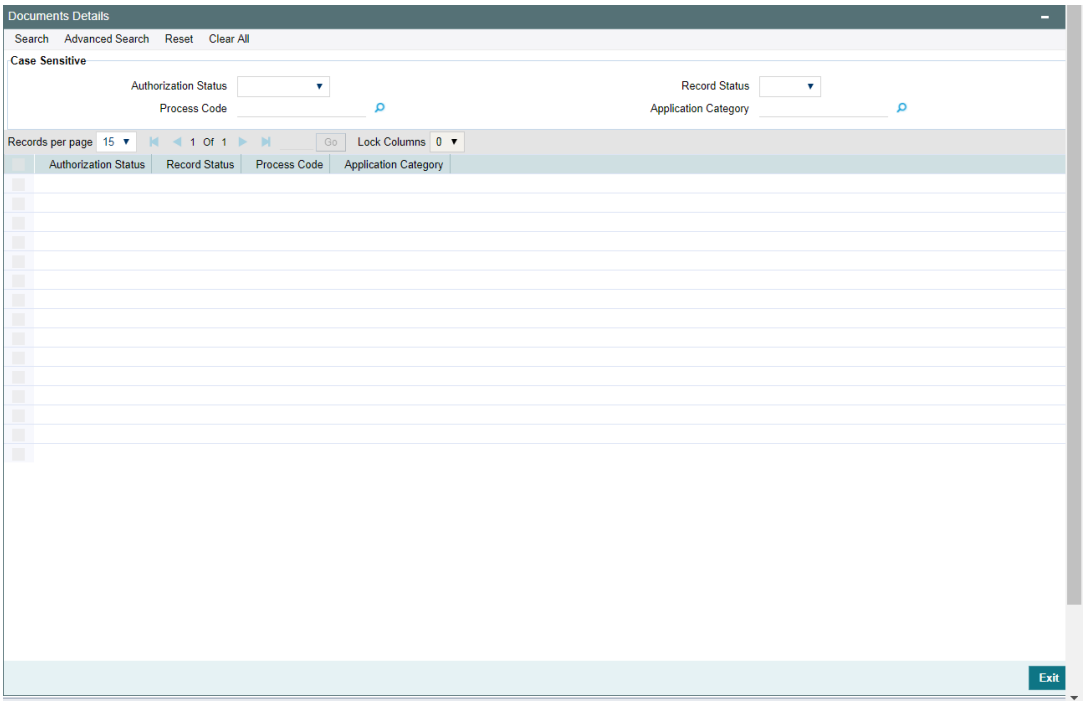
Mandatory

Check this box to indicate whether the checklist is mandatory or optional.

1.16 Viewing Document Checklist Summary

You can view a summary of the document checklists and advices in ‘Document Details’ screen. You can also query for a particular record based on desired search criteria.

You can invoke this screen by typing ‘ORSDOCMT’ in the field at the top right corner of the Application tool bar and clicking the adjoining arrow button.



You can specify any of the following details to search for a record:

- Authorization Status
- Record Status
- Process Code
- Application Category

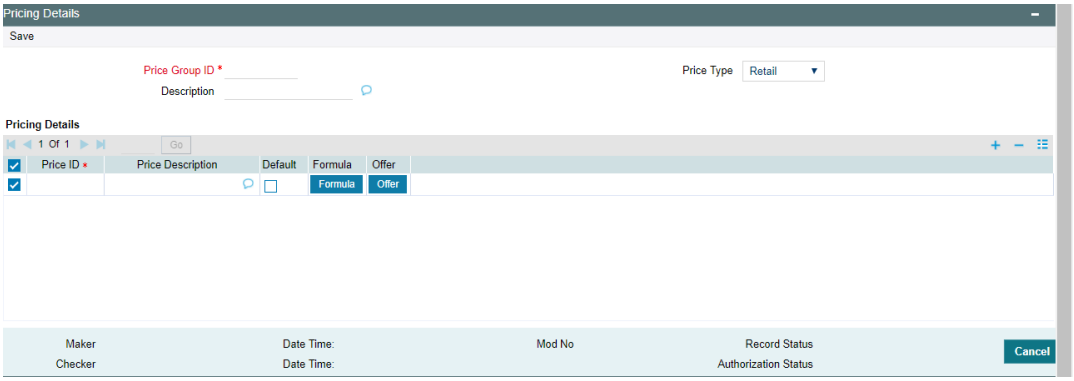
Click ‘Search’ button to search for a record based on the search criteria specified. You can double click a desired record to view the detailed screen.

1.17 Maintaining Pricing Details

Oracle FLEXCUBE allows you to maintain pricing groups and apply a suitable pricing rule to an application category during retail loan origination. The pricing rule automatically selects the best matched loan offer for the loan application from the available offers for the application category.

You need to maintain pricing groups and define the price IDs and formulae for the group using ‘Pricing Maintenance’ screen.

To invoke the screen, type ‘ORDPRCMT’ in the field at the top right corner of the application toolbar and click the adjoining arrow button.



Specify the following details:

Pricing Group ID

Specify a unique name to identify the price group.

Description

Specify a brief description of the price group.

Price Type

Specify the price type associated with the price group. You can choose one of the following price types:

- Corporate
- Retail

Pricing Details

Specify the following details.

Price ID

Specify a unique price ID.

This price ID can be applied to a loan at underwriting stage.

Price Description

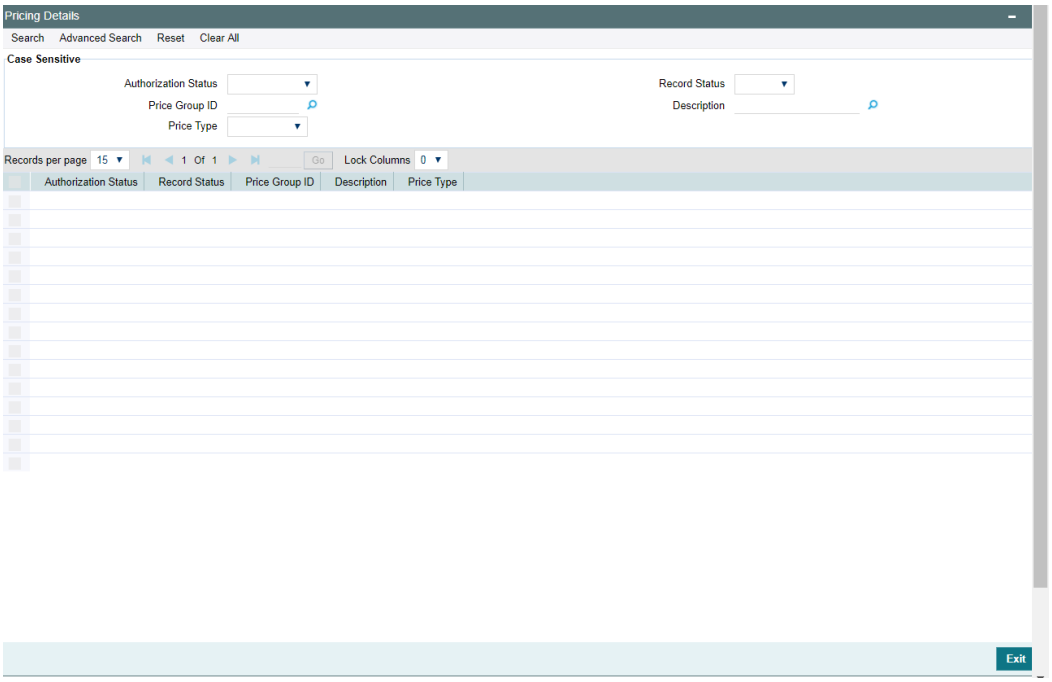
Specify a brief description of the price ID.

Default

Check this box to set this as the default price ID for the price group that you maintain.

1.18 Viewing Pricing Details

You can view the pricing details maintained in the ‘Pricing Details’ screen. To invoke the screen, type ‘ORSPRCMT’ in the field at the top right corner of the application toolbar and click the adjoining arrow button.



In this screen, you can base your queries by providing any or all of the following criteria:

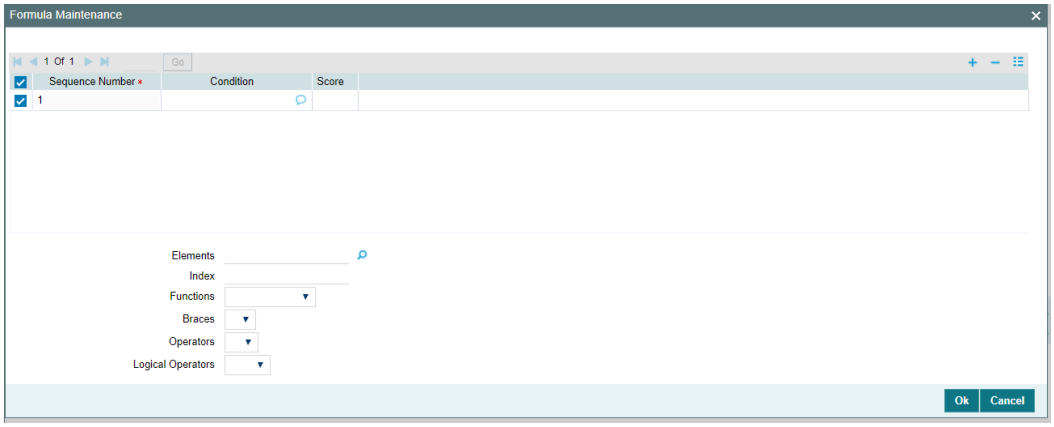
- Application Status
- Price Group ID
- Price Type
- Record Status
- Description

Based on the details provided, system displays the following details:

- Authorization Status
- Record Status
- Price Group ID
- Description
- Price Type

1.18.1 Maintaining Pricing Formula

Click ‘Formula’ button to define the pricing rule for each price ID. You can define the formula using origination system elements in Oracle FLEXCUBE.



Sequence Number

Specify the sequence number.

Condition

Specify the possible data or the data limits here. The supported operators are:

Operator	Description
=	Equals To
>	Greater Than
>=	Greater Than (or) Equals To
<	Less Than
<=	Less Than (or) Equals To

Score

Specify the score for each condition.

Elements

Select the element from the adjoining option list.

If the loan requested details satisfies the condition specified in the pricing maintenance then the corresponding score gets added. If the details do not satisfy the condition then zero will be considered as default score.

Functions

Select the mathematical function to be used to define the formula from the drop-down list provided.

Braces

Select the opening or the closing brace from the drop-down list provided, to define the credit score calculation formula.

Operators

Select the mathematical operator to be used to define the credit score calculation formula. You can select '+', '-', '*', or '/'.

Logical Operators

Select the logical operator to be used to define the credit score calculation formula. You can select '<', '>', '=', '<>', '>=', '<=', 'AND' or 'OR'.

Based on the formula and the loan application category, the system automatically applies a price ID to the application. You can apply a different price ID that matches the application only at the Underwriting Stage.

If you change a price ID selected by the system and reapply a different price ID, the system changes the score of the pricing rule. The score determines the price ID to be automatically applied.

For Example:

Consider the elements "TENOR", "INTEREST_RATE" and REQUESTED_AMOUNT are taken for formulation.

Element	Condition	Score
TENOR (months)	>120<180	25
INTEREST_RATE	>13.6<=14.5	25
REQUESTED_AMOUNT (USD)	>10,000,000<15,000,000	50

For a pricing ID with the above scoring formula, each Loan-offer is checked against this formula. For the first offer, if every condition is satisfied, a total score of 100 is given for that offer. In case the offer fails to satisfy any condition, say condition 2 fails, then a score of 0 would be given instead of 25. On summing up the individual scores, a total score of 75 would be given for that loan-offer. The same scoring method would be followed for the remaining Loan-offers maintained for that application category.

1.18.2 Maintaining Pricing Offer

Click 'Pricing' button to define the pricing rule for each price ID for the user to pick up the offer for the loan.

You can specify the following details here:

Sequence Number

System generates the sequence number.

Score From

Specify the start credit score to pick the offer for the loan.

Score Up To

Specify the end credit score to pick the offer for the loan.

Rate

Specify the rate to be picked up for the score.

No of Instalments

Specify the number of instalments for the offer.

Frequency

Specify the frequency of the offer.

Units

Select the frequency unit from the adjoining drop-down list. You can select one of the following:

- Daily
- Weekly
- Monthly
- Quarterly
- Half Yearly
- Yearly
- Bullet

For Example:

Consider the elements mentioned for Pricing formula are taken for calculation.

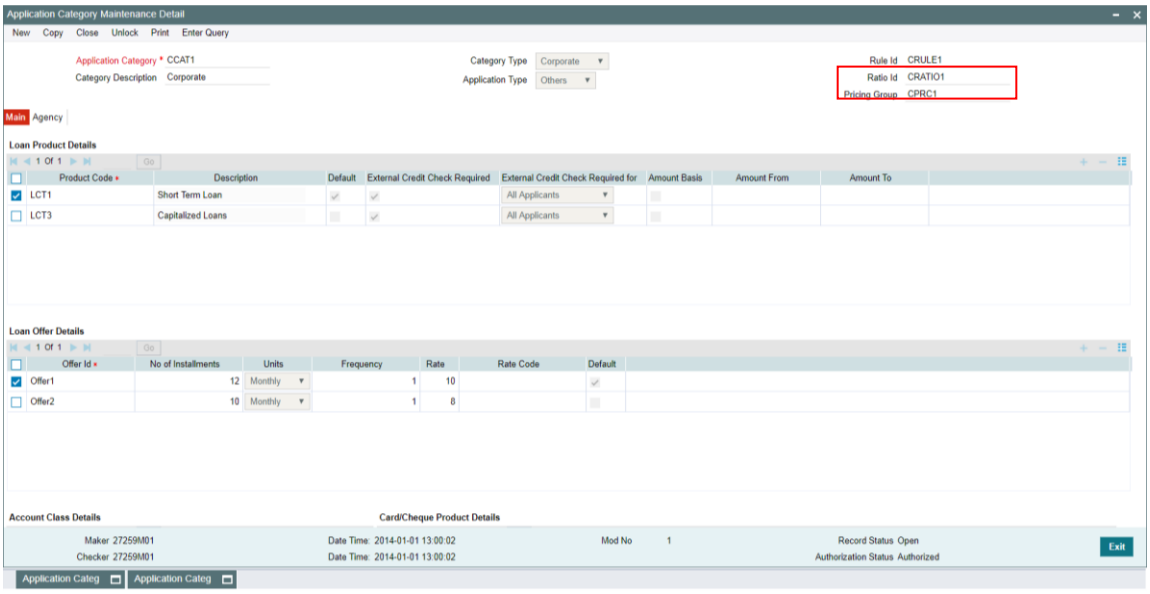
Sequence Number	Score From	Score Up-to	Rate	No. of Installments	Frequency	Units
1	0	25	13	48	1	Monthly
2	26	50	12	60	1	Monthly
3	51	75	11	72	1	Monthly
4	76	100	10.50	84	1	Monthly

For a pricing ID with a specific scoring formula, each Loan-offer is checked against the Offer Maintenance. The total score calculated using the formulae maintained is checked against the Pricing Offers maintained. The record for which the score generated falls in the range of Score From and Score Up-to, is picked up and the corresponding Interest rate, No. of Installments, Frequency and Units are applied.

1.18.3 Pricing in Category Maintenance

Function ID: **ORDCATMT**

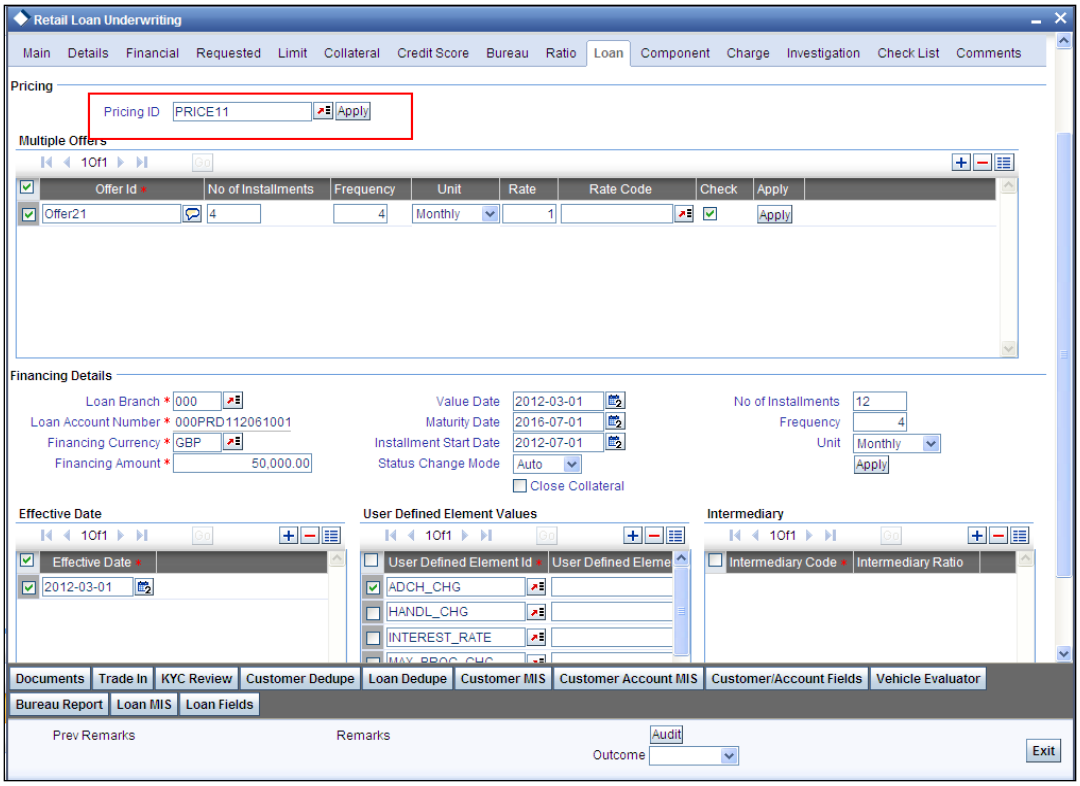
The following screen would be modified to capture Pricing Group details.



1.18.4 Pricing in Under-Writing

Function ID: **ORDRLUND**

The following screen would be modified to accommodate Pricing Fields.



S. No.	Field Name	Description	Data Type	Length	Type
1	Pricing ID	This is added to capture the Pricing ID for that application	Varchar2	16	User Input (from LOV)
2	Apply	On-click of this button, the pricing would be applied.			Button

1.19 Getting Started with Oracle Business Rules

This chapter describes how to use a business rule service component to integrate a SOA composite application with Oracle Business Rules. A business rule service component is also called a Decision component. You can add business rules as part of an SCA application or as part of a BPEL process

1.19.1 Introduction to the Business Rule Service Component

A Decision component, also called a business rule service component, supports use of Oracle Business Rules in a SOA composite application. Decision components support the following SOA composite usage:

- A Decision component can be used within a SOA composite and wired to a BPEL component.
- A Decision component can be used within a SOA composite and used directly to run business rules.
- A Decision component can be used with the dynamic routing capability of Mediator.
- A Decision component can be used with the Advanced Routing Rules in Human Workflow.

1.19.2 Integrating BPEL Processes, Business Rules, and Human Tasks

You can create a SOA composite application that includes BPEL process, business rule, and human task service components. These components are complementary technologies. BPEL processes focus on the orchestration of systems, services, and people. Business rules focus on decision making and policies. Human tasks enable you to model a workflow that describes the tasks for users or groups to perform as part of an end-to-end business process flow.

Some examples of where business rules can be used include:

Dynamic processing

Rules can perform intelligent routing within the business process based on service level agreements or other guidelines. For example, if the customer requires a response within one day, send a loan application to the QuickLoan loan agency only. If the customer can wait longer, then route the request to three different loan agencies.

Externalize business rules in the process

There are typically many conditions that must be evaluated as part of a business process. However, the parameters to these conditions can be changed independently of the process. For example, you provide loans only to customers with a credit score of at least 650. This value may be changed dynamically based on new guidelines set by business analysts.

Data validation and constraint checks

Rules can validate input documents or apply additional constraints on requests. For example, a new customer request must always be accompanied with an employment verification letter and bank account details.

Human task routing

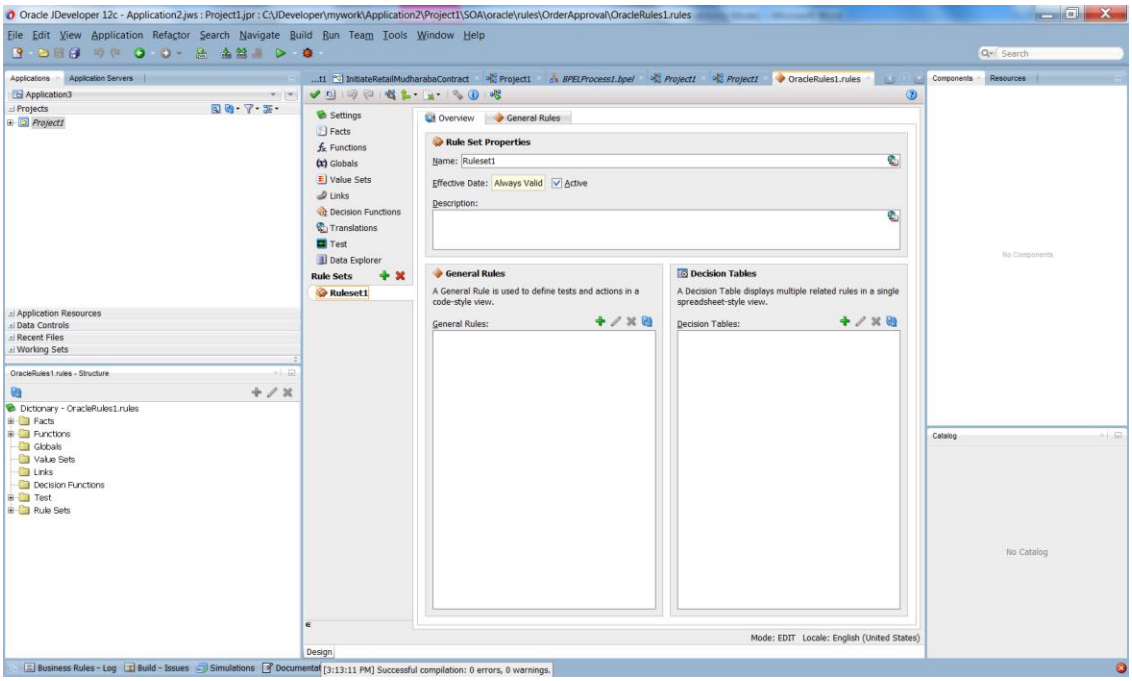
Rules are frequently used in the context of human tasks in the business process:

- Policy-based task assignments dispatch tasks to specific roles or users. For example, a process that handles incoming requests from a portal can route loan requests and insurance quotes to a different set of roles.
- Load balancing of tasks among users. When a task is assigned to a set of users or a role, each user in that role acquires a set of tasks and acts on them in a specified time. For new incoming tasks, policies may be applied to set priorities on the task and put them in specific user queues. For example, a specific loan agent is assigned a maximum of 10 loans at any time.

1.19.3 Overview of Rules Designer Editor Environment

You can create a business rules service component in the SOA composite application of Oracle JDeveloper and then design it by using the Business Rules Designer, which is displayed when you double-click a business rule in the SOA Composite Editor.

The Business Rules Designer consists of the following main sections. These sections enable you to work with business rules in Oracle JDeveloper.



Rules Designer in Oracle JDeveloper

1.19.3.1 Application Navigator

The Application Navigator displays the files in the project. Each project can only contain one composite. But each composite can have multiple components of either the same type or different types (Business Rules, BPEL process, Oracle Mediator, and human workflow).

As you design business rules, additional files, folders, and elements can appear in the Application Navigator.

1.19.3.2 Rules Designer Window

The **Rules Designer** window provides a visual view of the selected dictionary component. You use the Rules Designer navigation tabs to select different parts of the dictionary that you want to work with. The rules designer window displays when you perform one of the following actions:

- In a composite, double-click a **Business Rule** component.
- Double-click the Business Rule component in the SOA Composite Editor.
- In a BPEL process, double click a business rule.
- In the application navigator, double-click a business rules dictionary file (a file with the **.rules** extension)
- Click the **Design** tab with a **.rules** file selected.

The following table describes where you can find information about working with a dictionary with Rules Designer.

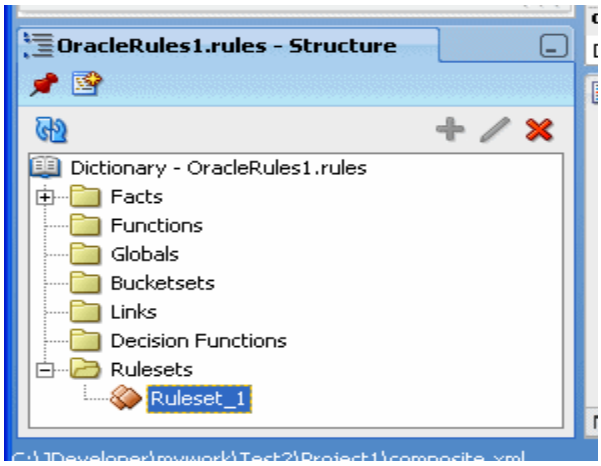
Rules Designer Navigation Areas Descriptions

Rules Designer Navigation Tab	**Description**
Facts	Facts are the objects that rules reason on.
Functions	A function, in Oracle Business Rules, refers to the standard mathematical functions.
Globals	A global, in Oracle Business Rules, is similar to a public static variable in Java.
Bucketsets	Bucketsets define the data types of fact properties.
Links	Links are used to link to a dictionary in the same application or in another application.
Decision Functions	A Decision Function is a function that is configured declaratively, without using RL Language programming.
Rulesets with Rules and Decision Tables	A ruleset provides a unit of execution for rules and for Decision Tables. A Decision Table provides a mechanism for describing data processing tasks.

1.19.3.3 Structure Window

The Structure window offers a structural view of the data in the Business Rule dictionary currently selected in the **Rules Designer** window. You can perform a variety of tasks from this section, by selecting an element and right-clicking on the element, including:

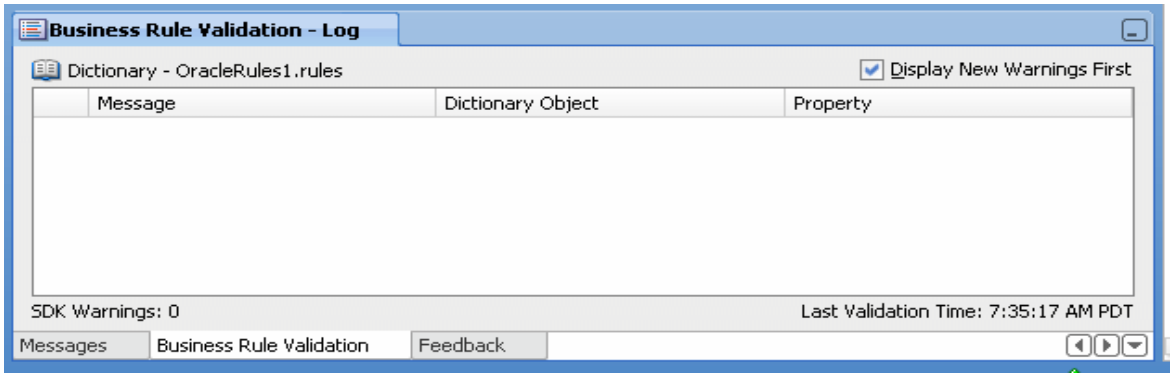
- Managing (creating, editing, refreshing, and deleting) elements such as facts, functions, globals, bucketsets, dictionary links, and decision functions
- Accessing rulesets, rules, and Decision Tables



Structure Window with Rules Designer Dictionary

1.19.3.4 Business Rule Validation Log Window

Rules Designer displays the status of dictionary validation in the business rule validation log, as shown below.When a dictionary is invalid, Rules Designer produces a list of warning messages and lists the associated dictionary objects that you can use to locate the dictionary object and to correct the problem. You can safely ignore the validation warnings that you see when you create rules using Rules Designer. The validation warnings are removed as you create the rules, but are shown during the intermediate steps. To test or deploy rules, the associated dictionary must not display warnings.



Rules Designer Business Rule Validation Log

1.19.4 Introduction to Creating and Editing Business Rules

This section describes how to get started with business rules and provides a brief introduction to the main sections of Oracle JDeveloper that you use to design business rules.

1.19.4.1 How to Create Business Rules Components

You can add Business Rule components using the SOA Composite Editor.

To create a Business Rule component:

Follow the instructions in the table below to start Oracle JDeveloper.

Starting Oracle JDeveloper

To Start...	On Windows...	On UNIX...
Oracle JDeveloper	Click *JDev_Oracle_Home*\JDev\bin\jdev.exe	$ORACLE_HOME/jdev/bin/jdev

Create a Business Rule service component through one of the following methods:

As a service component in an existing SOA composite application:

1. From the Component Palette, drag a **Business Rule** service component into the SOA Composite Editor.

In a new application:

2. From the Application Navigator, select **File** > **New** > **Applications** > **SOA Application**.

This starts the “Create SOA Application” wizard.

3. In the “Name your application” page, enter an application name in the **Name** field.
4. In the **Directory** field, enter a directory path in which to create the SOA composite application and project.
5. Click **Next**.
6. In the Name your project page, enter a unique project name in the **Project Name** field. The project name must be unique across SOA composite applications. This is because the uniqueness of a composite is determined by its project name. For example, do not perform the actions described in the table below.

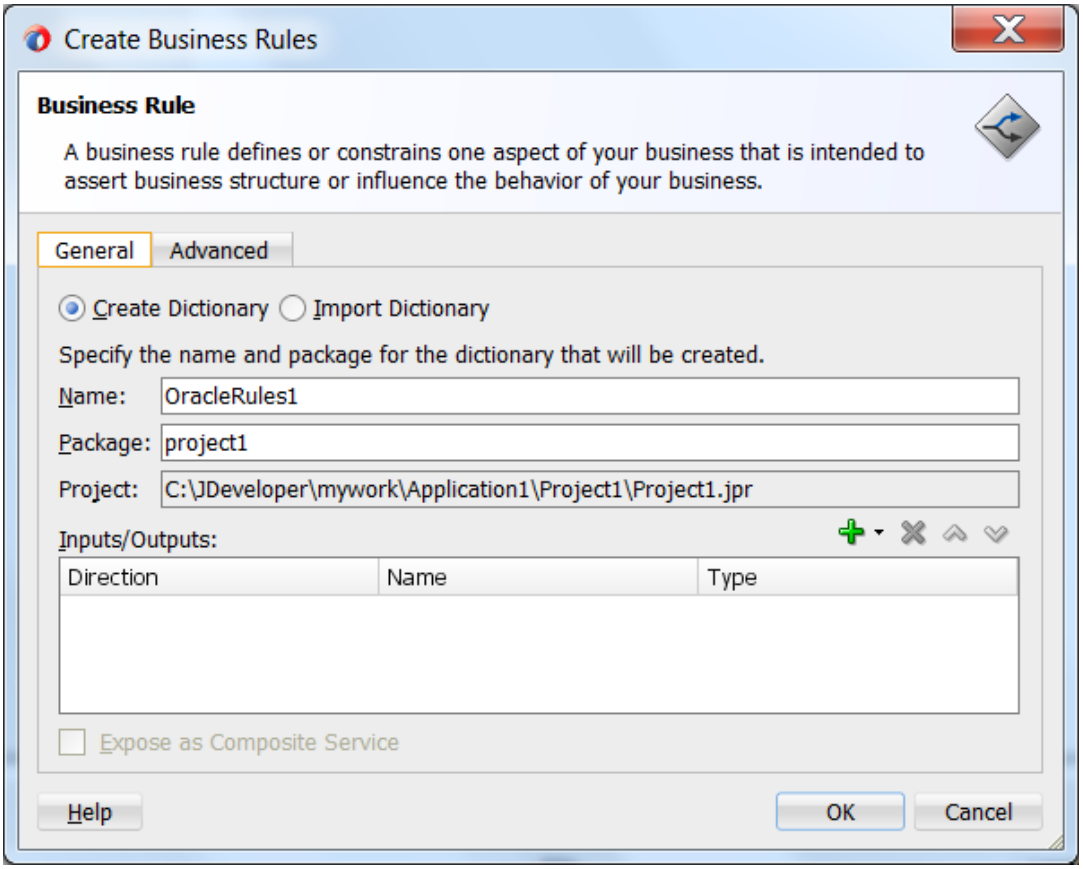
Restrictions on Naming a SOA Project

Create an Application Named...	With a SOA Project Named...
Application1	Project1
Application2	Project1

During deployment, the second deployed project (composite) overwrites the first deployed project (composite).

7. Click **Next**.
8. In the Configure SOA settings page, select **Composite with Business Rule**.
9. Click **Finish**.

Each method causes the Create Business Rules dialog shown below, to appear.



Create Business Rules Dialog

10. Provide the required details.
11. Click **OK**.

1.19.4.2 Introduction to Working with Business Rules in Rules Designer

When you are working with business rules Oracle JDeveloper displays Rules Designer.

1.19.5 Adding Business Rules to a BPEL Process

You can use a Decision component, also called a business rule service component, to execute business rules in a BPEL process.

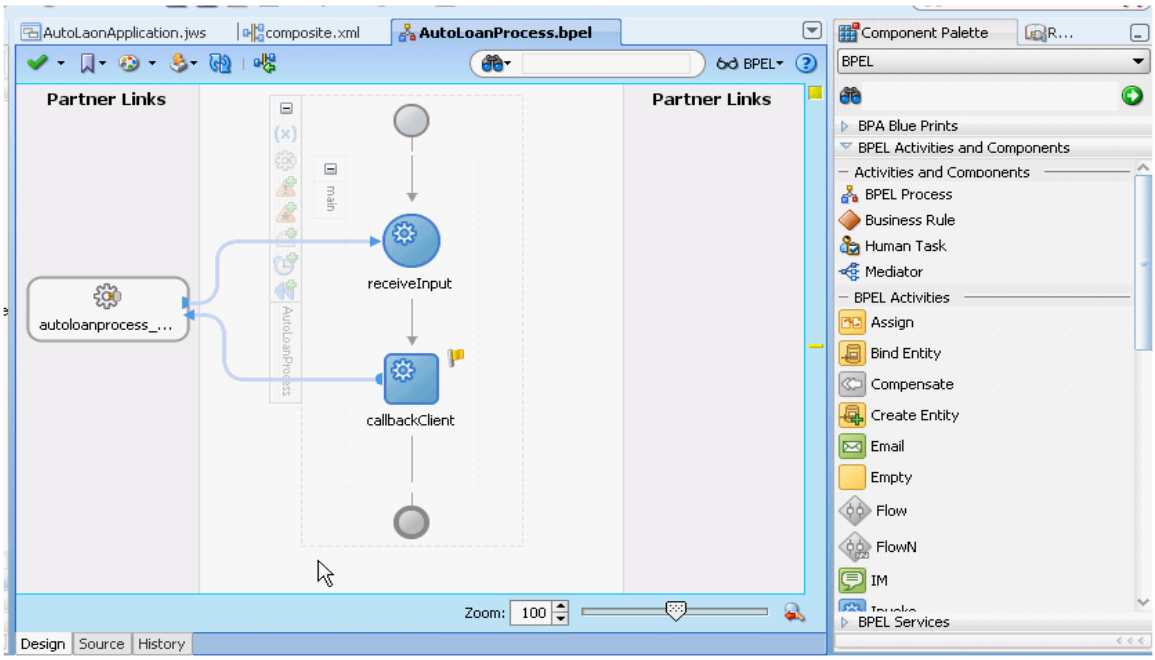
1.19.5.1 How to Add Business Rules to a BPEL Process

You add business rules to a BPEL process using a **Business Rule** component. When you add a business rule component to a BPEL process you need to include input and output variables to provide input to the rules and obtain results back from the business rules.

A business rule component enables you to execute business rules and make business decisions based on the rules. To create a business rule component, also called a Decision component, drag-and-drop a **Business Rule** from the component palette into the BPEL process.

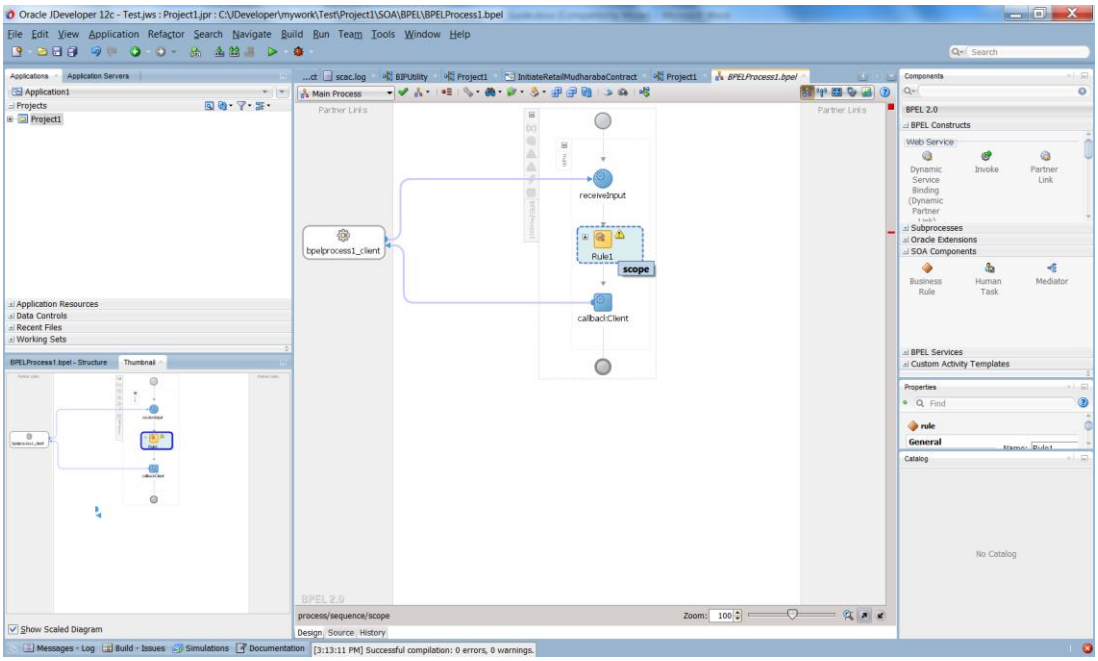
To add a business rule to a BPEL process:

1. Create a BPEL process service component.
2. Expand the BPEL process. For example, expand the BPEL process to view receiveInput and callbackClient as shown in below.



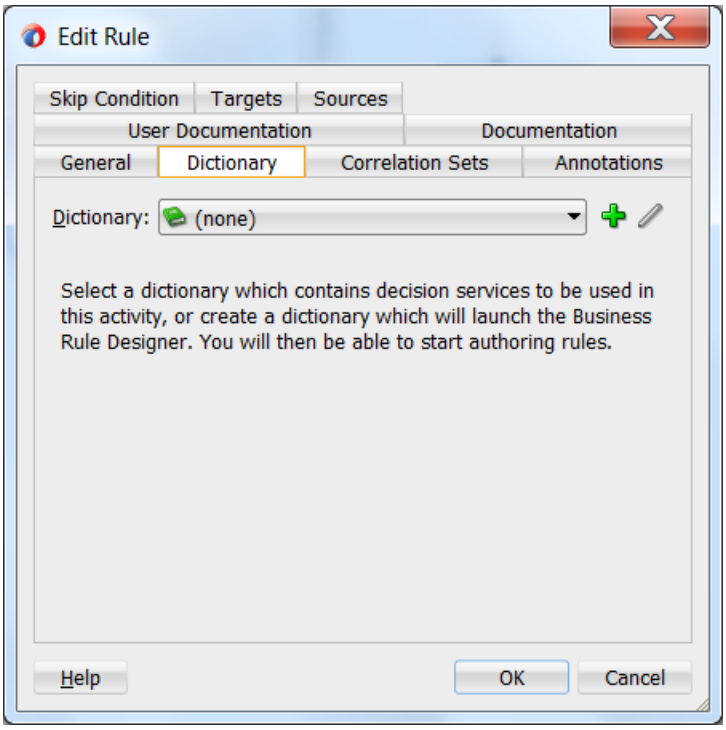
Adding a Business Rule to a BPEL Process

3. Select **Business Rule** from the BPEL Activities and Components section of the Component Palette and drag-and-drop a **Business Rule** into the position where the business rules are needed. For example, drag-and-drop a **Business Rule** between receiveInput and callbackClient, as shown below.



Drag-and-drop a Business Rule into a BPEL Process

4. Oracle JDeveloper displays the business rule in the diagram. In the business rule area you can select an existing Oracle Business Rules dictionary or enter the name of a new dictionary to create. The Business Rule area includes a field to enter the business rule name. In the **Name** field enter a name. For example, enter GetCreditRating, as shown below. If you previously created a dictionary, in the **Dictionary** field, select an existing dictionary.

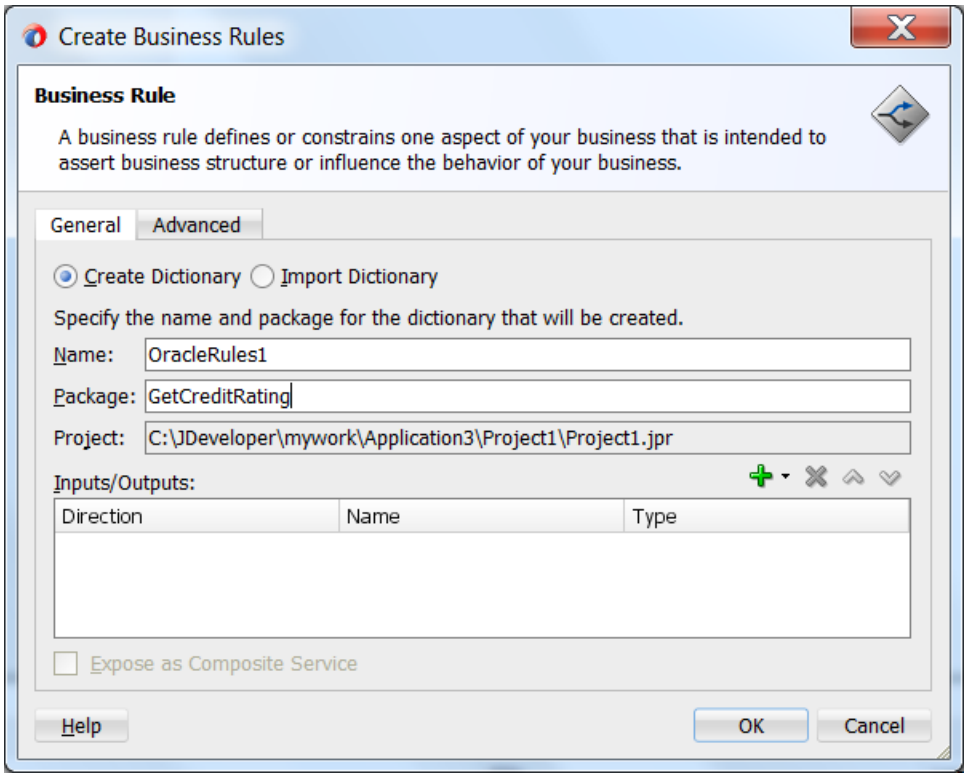


Business Rule Added to Auto Loan BPEL Process

5. In the Business Rule area for the **Business Rule Dictionary**, click the **Create Dictionary** icon to display the Create Business Rules dialog.
6. In the Create Business Rules dialog you do the following:

    - Specify a name for the Oracle Business Rules dictionary and a package name.
    - Specify the input and output data elements for the business rule. For example, for a sample Decision component named GetCreditRating, the input is a rating request document. The output is generated when you run the business rules, and for this example is a rating document. For example, in BPEL you can create two new variables; RatingRequest and Rating that carry the input and output data for the GetCreditRating rules.

    Enter a name for the Oracle Business Rules dictionary. For example, enter GetCreditRating, as shown below



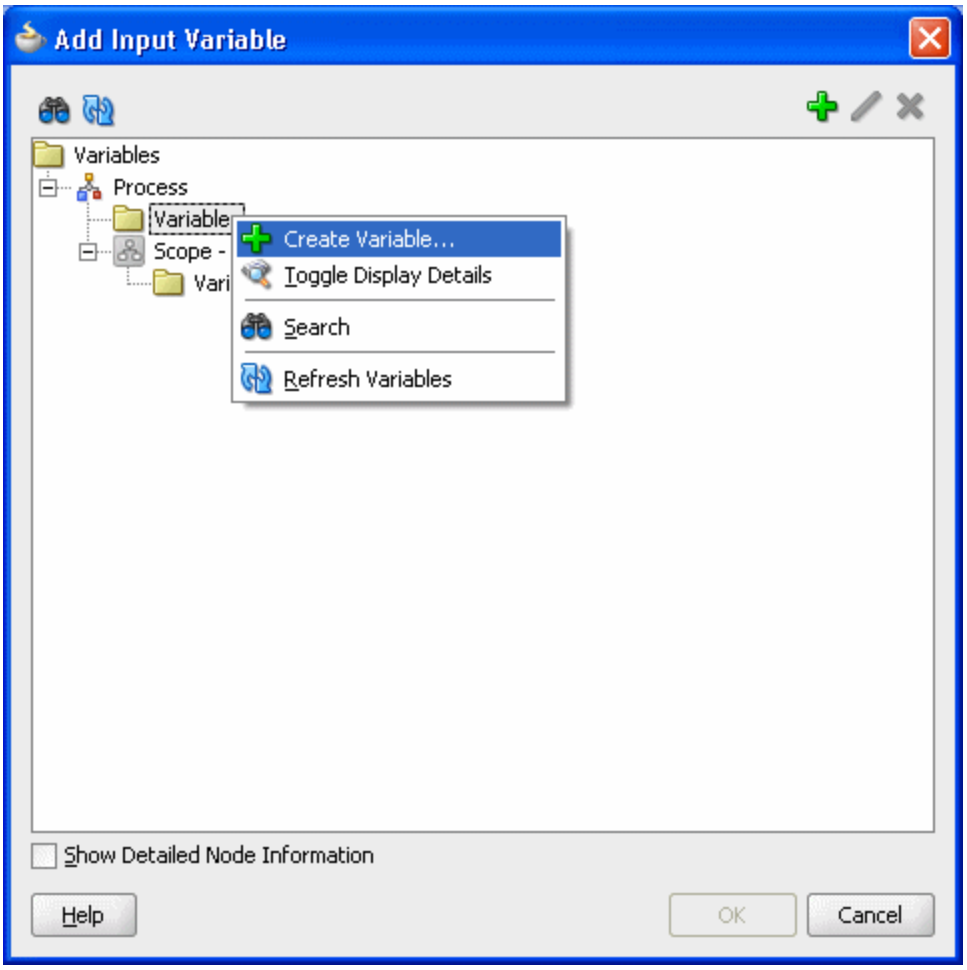
Adding GetCreditRating Business Rule Dictionary

Add inputs for business rule:

1. In the Create Business Rules dialog, from the dropdown menu next to the **Add** icon select **Add Input Variable** to create the input variable.

   This displays the Add Input Variable dialog.

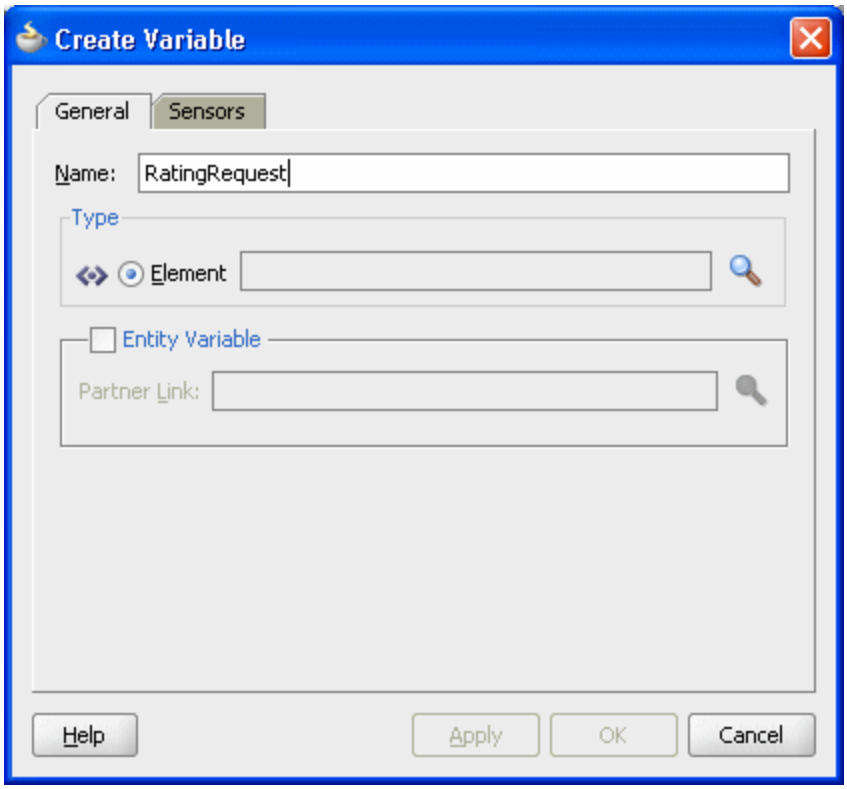
2. In the Add Input Variable dialog expand the **Process** folder and select the **Variables** folder immediately inside the **Process**.
3. Right-click the **Variables** folder and from the dropdown list select **Create Variable...** as shown below



Add Input Variable

This displays the Create Variable dialog.

4. In the Create Variable dialog, in the **Name** field enter a value. For example, enter RatingRequest as shown below.



Create Variable Dialog

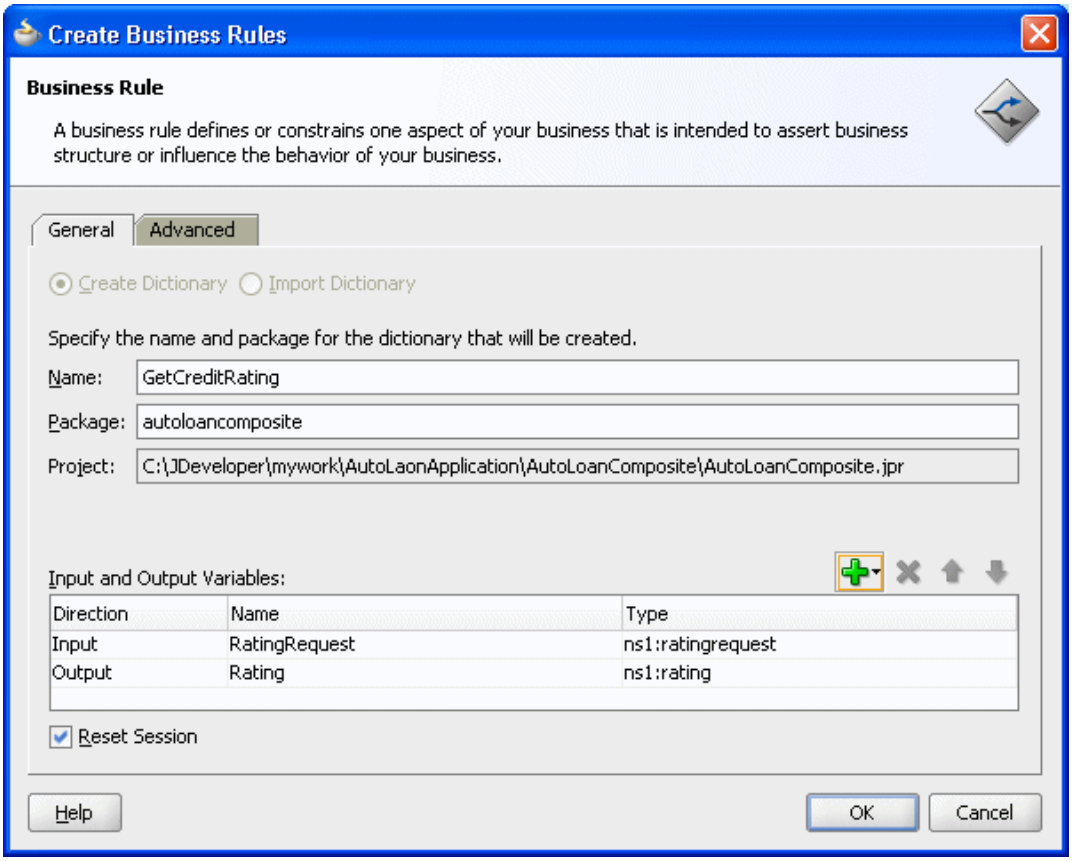
5. In the Create Variable **Type** area, click the **Browse Elements** icon. Use the navigator to locate the schema element type for the input variable. For example, select the ratingrequest type. Add any needed types using the Type Chooser.
6. Click the **Import Schema File** icon to import the schema. For example, import CreditRatingTypes.xsd. Also import any other required schema for your application.
7. In the Type Chooser dialog, select **ratingrequest** and click **OK**.
8. In the Create Variable dialog, click **OK**.
9. In the Add Input Variable dialog, click **OK**.

Add outputs for business rule:

1. In the Create Business Rules dialog, from the dropdown menu next to the **Add** icon, select **Add Output Variable...**. This displays the Add Output Variable dialog. Use this dialog to create an output variable. For example, create an output variable for GetCreditRating in the same way you created the input variable.
2. In the Add Output Variable dialog select the scope by selecting the **Variables** folder under **Process**.
3. Right-click and from the dropdown list select **Create Variable...**. This displays the Create Variable dialog.
4. In the Create Variable dialog, in the **Name** field enter the output variable name. For example enter Rating.
5. In the Create Variable dialog, in the **Type** area select the **Browse elements** icon and use the Type Chooser dialog to enter the type for the output variable. For example, expand the CreditRatingTypes.xsd and select the element type rating.
6. In the Type Chooser dialog, click **OK**.

7. In the Create Variable dialog, click **OK**.
8. In the Add Output Variable dialog, click **OK**.

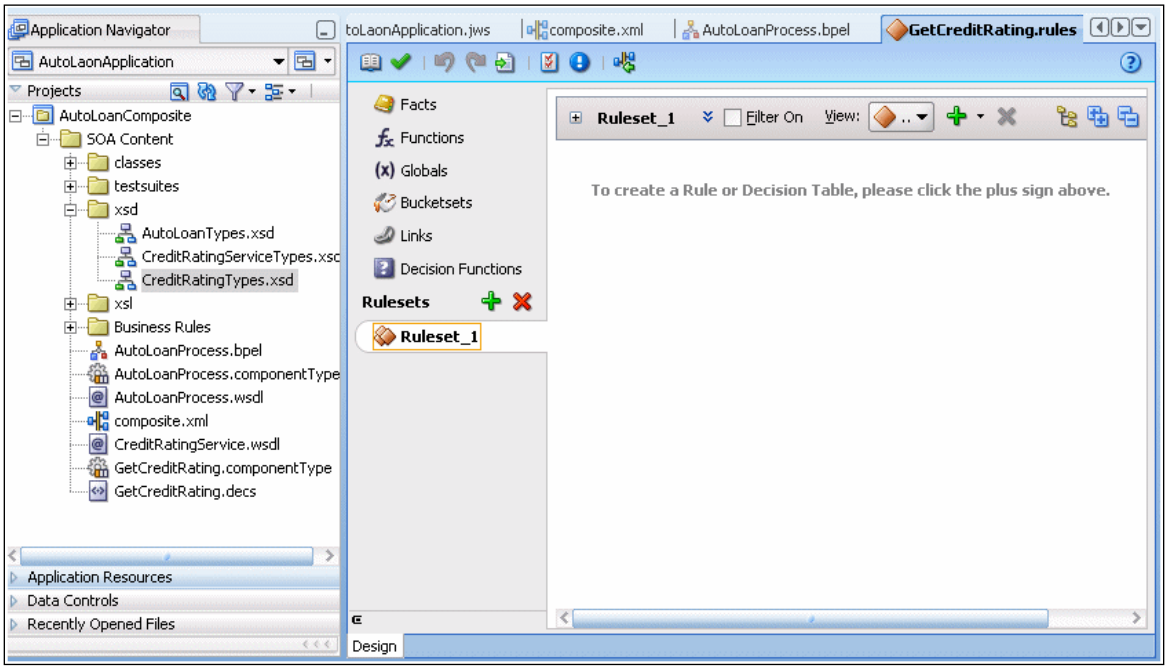
This displays the Create Business Rules dialog, as shown below.



Create Business Rules Dialog with Input and Output Variables

Set options and create decision service and business rules dictionary:

1. If you do not want to use the default service name, then select the **Advanced** tab and in the **Service Name** field enter the service name. For example enter the service name CreditRatingService.
2. Determine if the Decision Component is stateful or stateless with **Reset Session**.
3. In the Create Business Rules dialog, click **OK**. Oracle JDeveloper creates the Decision component and the dictionary and displays Rules Designer, as shown below.



Rules Designer Canvas Where You Work with Business Rules

1.19.5.2 What Happens When You Add Business Rules to a BPEL Process

When you add business rules to a BPEL process, Oracle JDeveloper creates a Decision component to control and run the business rules using the Business Rule Service Engine.

A Decision component consists of the following:

- Rules or Decision Tables that are evaluated using the Rules Engine. These are defined using Rules Designer and stored in a business rules dictionary.
- A description of the facts required for specific rules to be evaluated and the decision function to call. Each ruleset that contains rules or Decision Tables is exposed as a service with facts that are input and output, and the name of an Oracle Business Rules decision function. The facts are exposed through XSD definitions when you define the inputs and outputs for the business rule. A Decision function is stored in an Oracle Business Rules dictionary. For more information, see *Oracle Fusion Middleware User's Guide for Oracle Business Rules*.
- A web service wraps the input, output, and the call to the underlying Business Rule service engine.

This web service lets business processes assert and retract facts as part of the process. In some cases, all facts can be asserted from the business process as one unit. In other cases, the business process can incrementally assert facts and eventually consult the rule engine for inferences. Therefore, the service supports both stateless and stateful interactions.

You can create a variety of such Decision components.

1.19.5.3 What Happens When You Create a Business Rules Dictionary

After you create an application, a project, and a rules dictionary, the rules dictionary appears in the structure pane in Oracle JDeveloper and Rules Designer opens in the main canvas.

As part of the create Business Rule dialog you either select an existing dictionary or a new rule dictionary is created with the following pre-loaded data:

- XML fact type model based on the input and output information of the Business Rule.
- A Ruleset that needs to be completed by adding rules or Decision Tables. With an existing dictionary, you use the import option to specify a dictionary that may already contain the rules or Decision Tables.
- A service component with the input and output contract of the Decision component.
- A Decision component for the rule dictionary and wires to the BPEL process.

> **Note:**
>
> When you create inputs and outputs for a business rule, the XML fact type that is created in the associated dictionary is named based on the schema types for the inputs and outputs that you supply in the Create Business Rules dialog. When you specify schema type for the input and the output, Rules Designer defines fact types and aliases associated with your type selections for input and output. If you only use a single type for both the input and the output, then the Decision component creates a single fact that is shown in the Rules Designer Facts tab. This fact represents the fact type you specified and uses an alias name that is a concatenation of both the input variable name and the output variable name. In Rules Designer you can rename this alias if you do not like the default naming scheme for the fact type.

1.19.5.4 What You Need to Know About Invoking Business Rules in a BPEL Process

When you add business rules to a BPEL process Oracle JDeveloper creates a Decision Service that supports calling Oracle Business Rules with the inputs you supply, and returning the outputs with results. The Decision Service provides access to Oracle Business Rules Engine at runtime as a web service.

1.19.5.5 What You Need to Know About Decision Component Stateful Operation

A Decision Component running in a business rules service engine supports either stateful or stateless operation. The **Reset Session** checkbox in the Create Business Rules dialog provides support for these two modes of operation.

By default the **Reset Session** checkbox is selected which indicates stateless operation. Stateless operation means that, at runtime, the rule session is released after the Decision Component invocation.

When **Reset Session** is unselected, the underlying Oracle Business Rules object is kept in the memory of the business rules service engine at a separate location (so that it is not given back to the Rule Session Pool when the operation is finished). A subsequent use of the Decision component re-uses the cached RuleSession object, with all its state information from the callFunctionStateful invocation, and then releases it back to the Rule Session pool once the callFunctionStateless operation is finished. Thus, when **Reset Session** is unselected the rule session is saved for a subsequent request and a sequence of Decision Service invocations from the same BPEL process should always end with a stateless invocation.

1.19.6 Adding Business Rules to a SOA Composite Application

To work with Oracle Business Rules in a SOA composite application, you create an application and add business rules.

The business rule service component enables you to integrate your SOA composite application with business rules. This creates a business rule dictionary and enables you to execute business rules and make business decisions based on the rules.

After creating a project in Oracle JDeveloper, you need to create a Business Rule Service component within the project. When you add a business rule you can create input and output variables to provide input to the service component and to obtain results from the service component.

To use business rules with Oracle JDeveloper, you do the following:

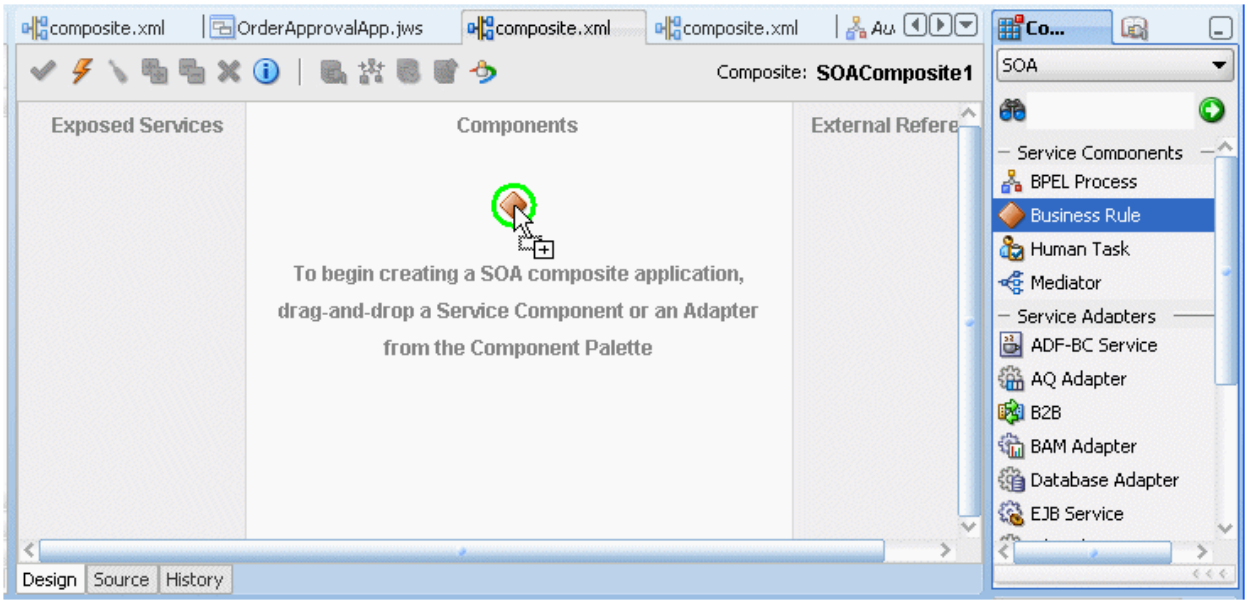
- Add a business rules service component
- Create input and output variables for the service component
- Create an Oracle Business Rules dictionary

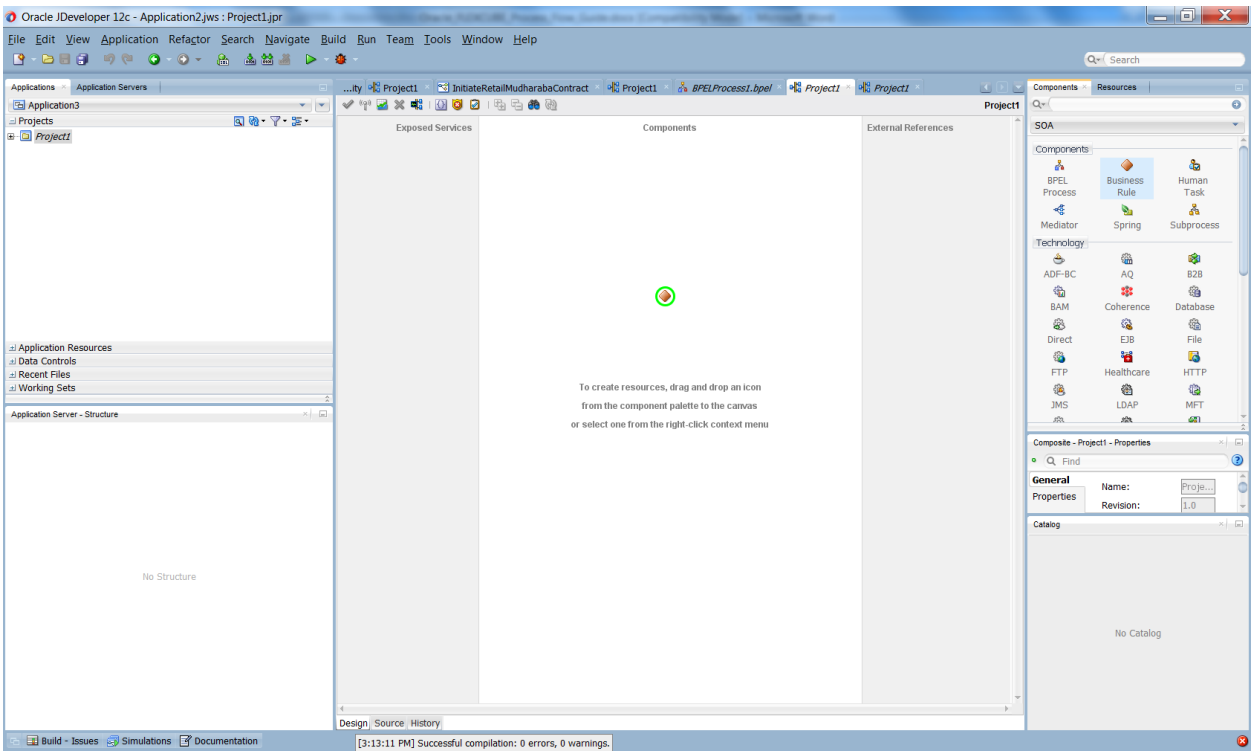
1.19.6.1 How to Add Business Rules to a SOA Composite Application

To work with Oracle Business Rules in a SOA composite application you use Oracle JDeveloper to create an application, a project, and then add a business rule component.

To create a SOA application with business rules:

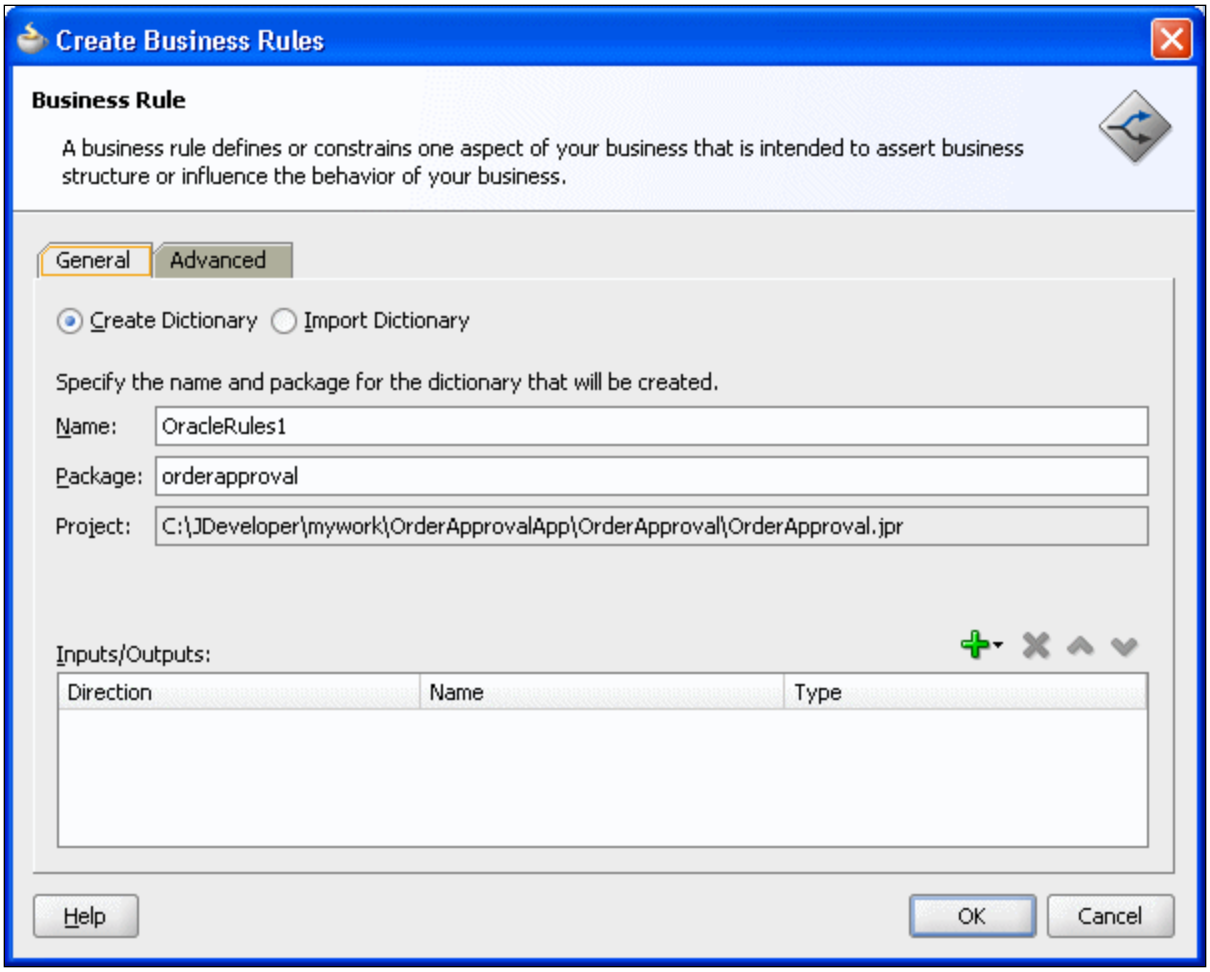
1. Create a SOA application and project. For a SOA composite using business rules, pick the required technologies for your application. For example, you may need the following for a SOA application with business rules: ADF Business Components, Java, and XML. You move these items to the **Selected** area on the Project Technologies tab.
2. In the Application Navigator, if the SOA composite editor is not showing, then in your project expand **SOA Content** folder and double-click composite.xml to launch the SOA composite editor.
3. From the Component Palette, drag-and-drop a **Business Rule** from the Service Components area of the SOA menu to the **Components** lane of the SOA composite editor, as shown below.





Adding Business Rules to a SOA Composite Application

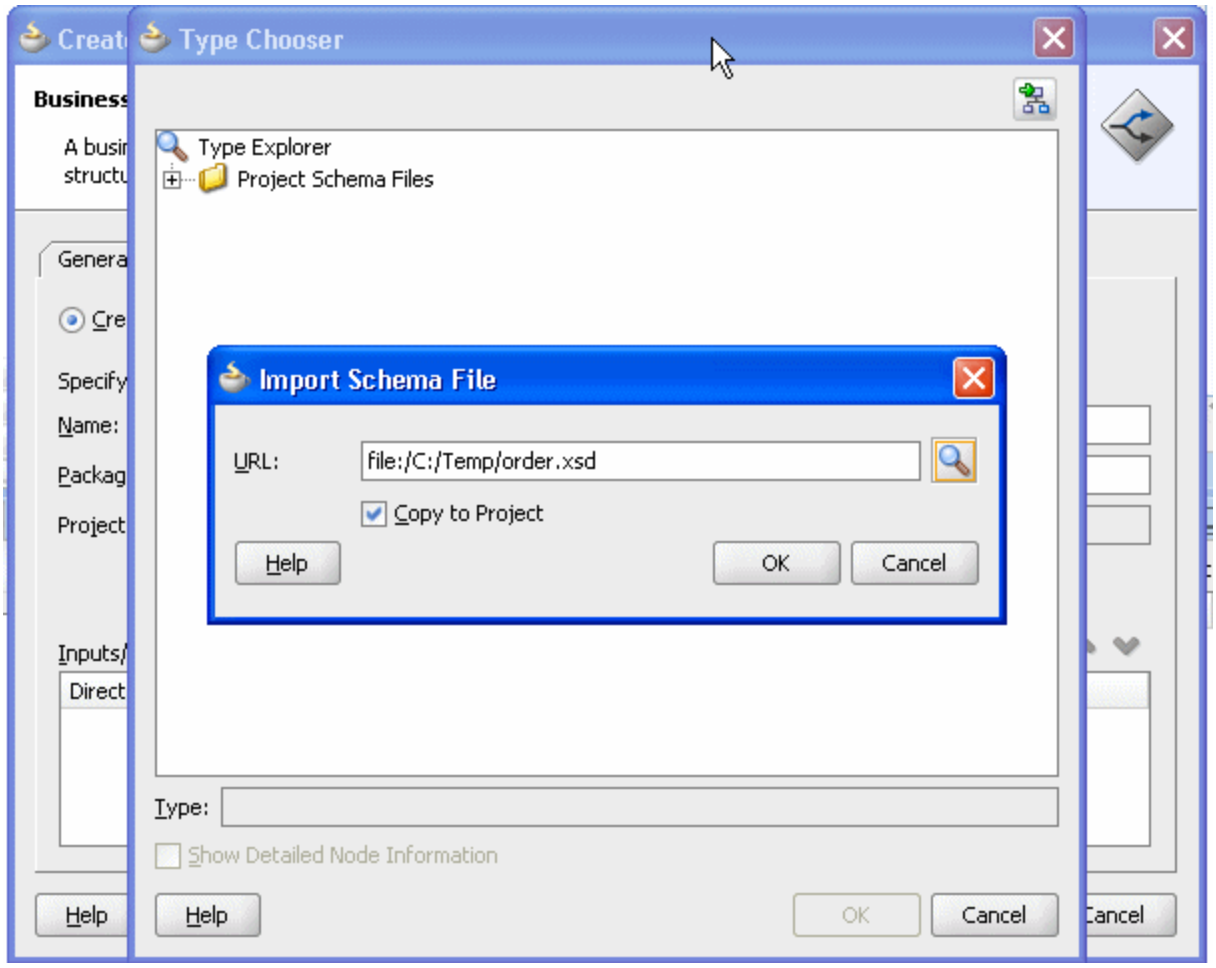
4. When you drag-and-drop a **Business Rule**, Oracle JDeveloper displays the Create Business Rules dialog as shown below.



Adding Business Rules to a SOA Composite and Creating a Dictionary

Add inputs for business rules:

1. In the Create Business Rules dialog, from the dropdown menu next to the **Add** icon select **Input** to add input for the business rule. This displays the Type Chooser dialog.
2. In the Type Chooser dialog, add inputs. If the schema is available in the **Project Schema Files**, skip to step 9 to select the appropriate schema.
3. Click the **Import Schema File**... icon. This brings up the Import Schema File dialog.
4. In the Import Schema File dialog click **Browse Resources** to choose the XML schema elements for the input. This displays the SOA Resource Browser dialog.
5. In the SOA Resource Browser dialog, navigate to find the schema for your business rules input. For example, select the order.xsd schema file, and click **OK**.
6. In the Import Schema File dialog select **Copy to Project**, as shown below.

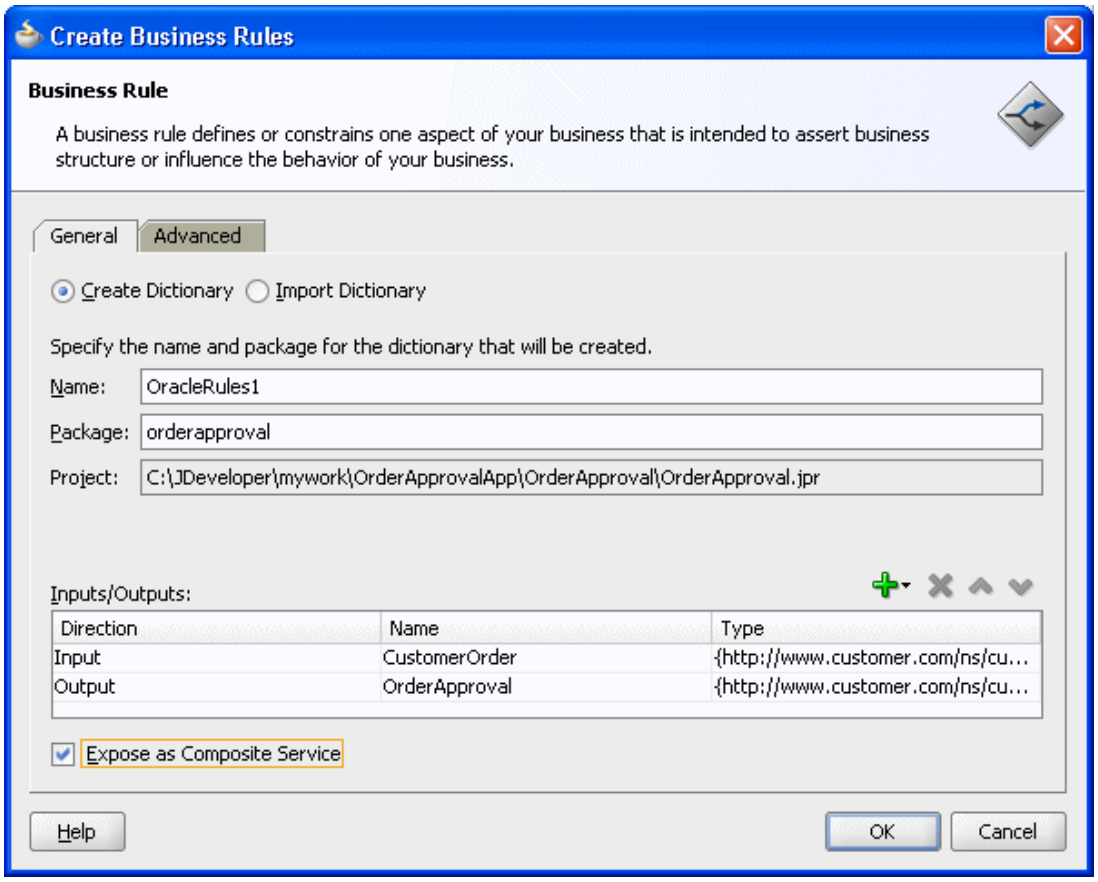


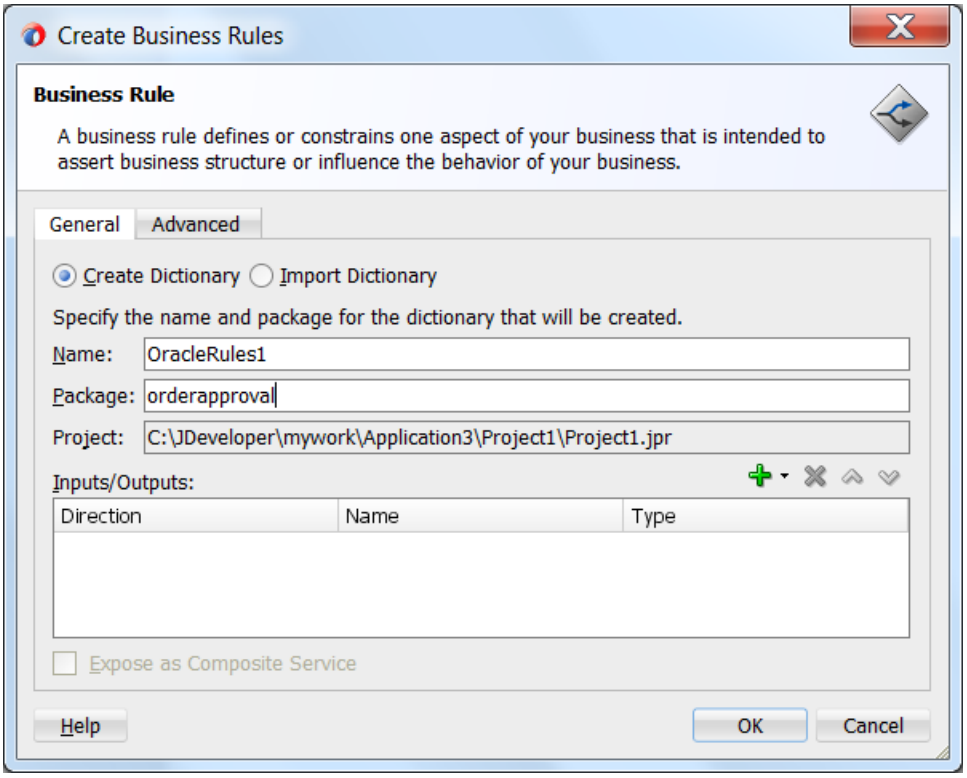
Importing Schema for Input to Business Rules

7. In the Import Schema File dialog, click **OK**.
8. In the Localize Files dialog, click **OK**.
9. Use the Type Chooser dialog navigator to locate and select the input from the schema and click **OK**. For example, select the CustomerOrder element as the input.

Add outputs for business rules:

1. In the Create Business Rules dialog, from the dropdown menu next to the **Add** icon select **Output.**
2. In the Type Chooser dialog, in a manner similar to adding an input add the output. For example, add OrderApproval from the order.xsd and click **OK**.
3. This displays the Create Business Rules dialog, as shown below.


Create Business Rules
Business Rule
A business rule defines or constrains one aspect of your business that is intended to assert business structure or influence the behavior of your business.
General
Advanced
Create Dictionary
Import Dictionary
Specify the name and package for the dictionary that will be created.
Name: OracleRules1
Package: orderapproval
Project: C:\JDeveloper\mywork\OrderApprovalApp\OrderApproval\OrderApproval.jpr
Inputs/Outputs:
Direction
Name
Type
Input
CustomerOrder
{http://www.customer.com/ns/cu...
Output
OrderApproval
{http://www.customer.com/ns/cu...
Expose as Composite Service
Help
OK
Cancel


Create Business Rules
Business Rule
A business rule defines or constrains one aspect of your business that is intended to assert business structure or influence the behavior of your business.
General
Advanced
Create Dictionary
Import Dictionary
Specify the name and package for the dictionary that will be created.
Name: OracleRules1
Package: orderapproval
Project: C:\JDeveloper\mywork\Application3\Project1\Project1.jpr
Inputs/Outputs:
Direction
Name
Type
Expose as Composite Service
Help
OK
Cancel

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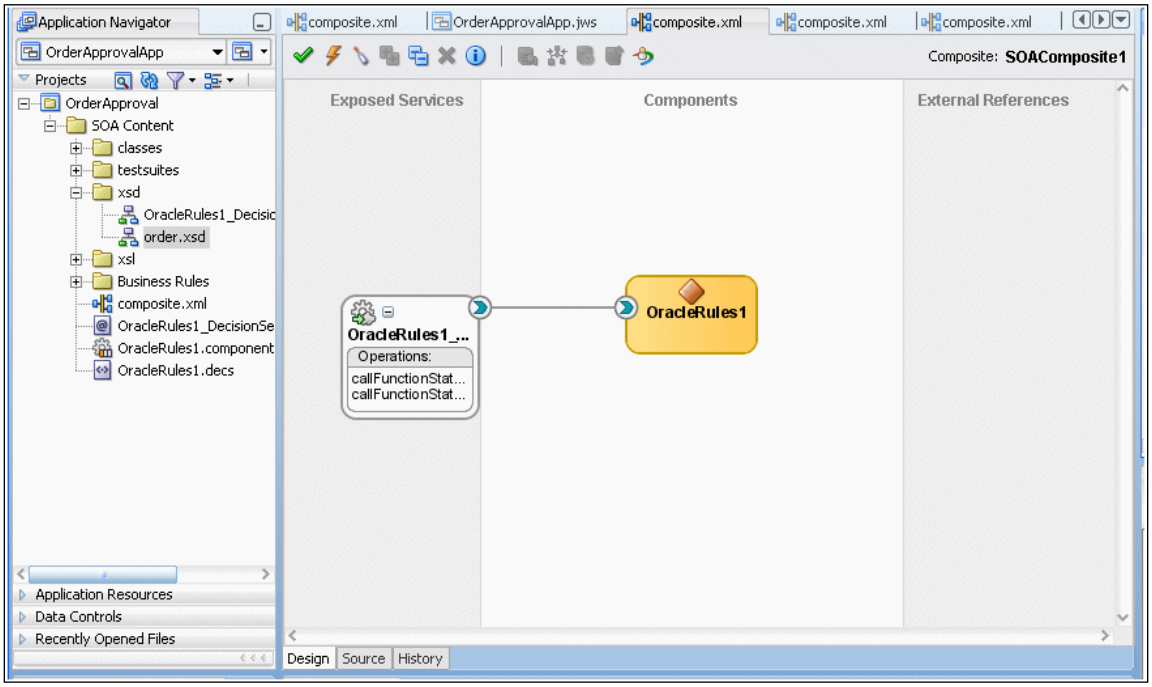
Create Business Rules Dialog with Input and Output

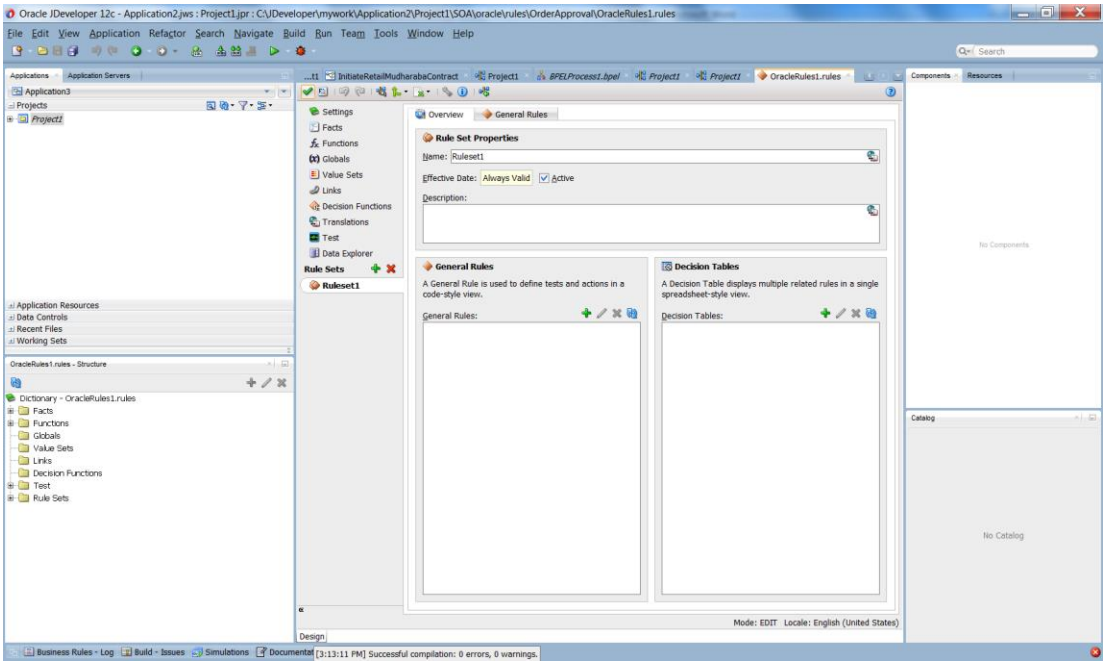
Set options and create decision service and business rules dictionary:

1. In the Create Business Rules dialog, select **Expose as Composite Service**.
2. If you do not want to use the default service name, then select the **Advanced** tab and in the **Service Name** field enter the service name.
3. In the Create Business Rules dialog, click **OK**. This creates the Business Rule component, also called a Decision component, and Oracle JDeveloper shows the Business Rule component in the canvas workspace as shown below.



Business Rule Component in SOA Composite

4. Double-click the Decision component (for example the **OracleRules1** business rule). This opens Rules Designer, as below. The validation log shows validation warnings for the input and output facts. By working with Rules Designer to define rules or decision tables, you remove these warning messages.



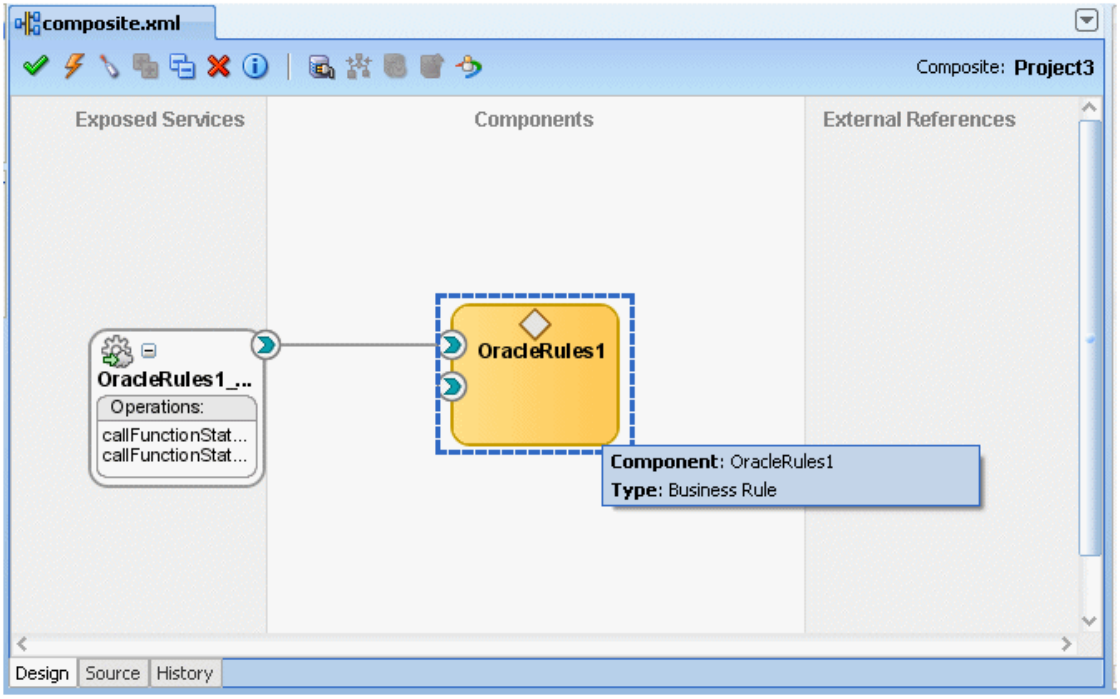
Rules Designer Showing New Dictionary for SOA Composite Application

1.19.6.2 How to Select and Modify a Decision Function in a Business Rule Component

You can specify one or more decision functions as inputs for calling Oracle Business Rules as a component in a composite application. For example, you can specify a particular decision function as the input when multiple decision functions are available in an Oracle Business Rules dictionary.

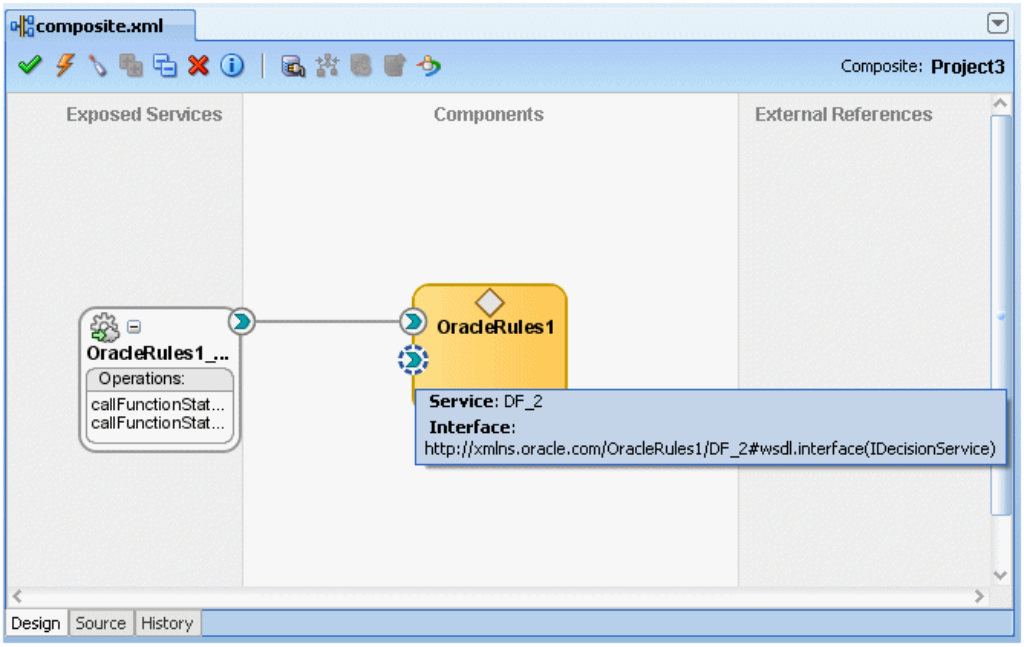
To specify a decision function in a composite application:

1. Add a decision function to the Oracle Business Rules dictionary.
2. Add a Business Rule component to the composite application.
3. Select a business rule component, as shown below.



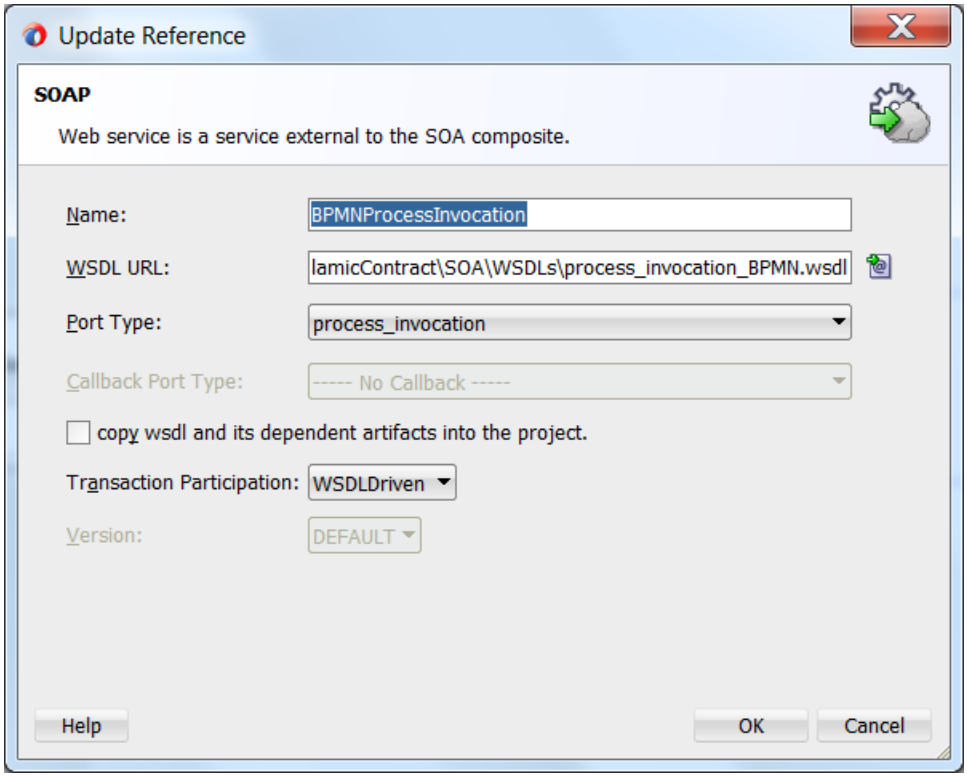
Selecting a Business Rule Component in a Composite Application

4. Select the decision function port of interest. For example, select the port for DF_2 as shown below.



Selecting a Decision Function Port in a Business Rule Component

5. When you select the port, Oracle JDeveloper shows the port information in the Property Inspector.
6. When you double-click the port, Oracle JDeveloper displays the Update Interface dialog for the port as shown below.



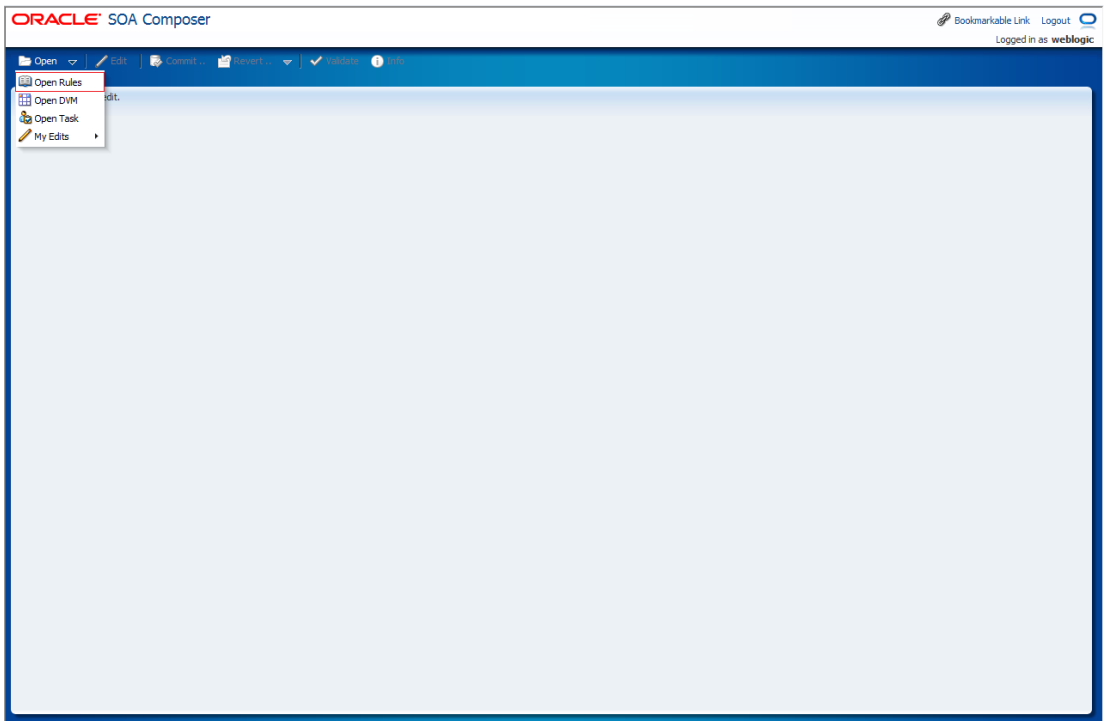
Update Interface Dialog for a Decision Function in a Business Rule Decision Port

1.19.7 Running Business Rules in a Composite Application

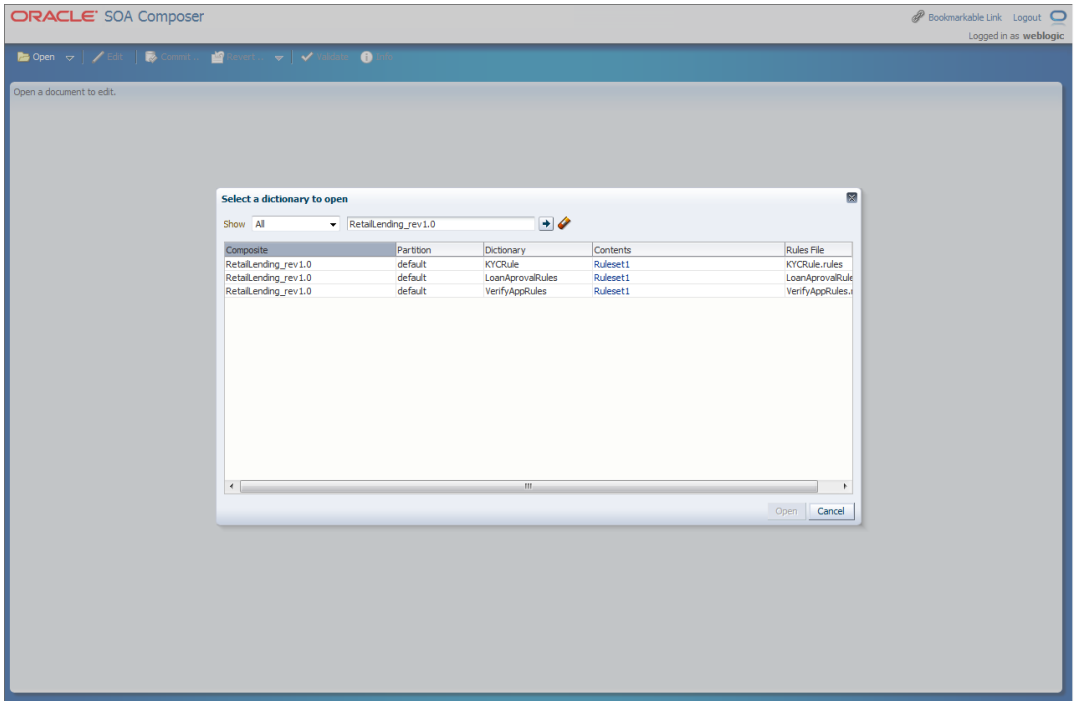
You run business rules as part of a Decision component within a SOA composite application. The business rules are executed by the Business Rule Service Engine. You can use Oracle Enterprise Manager Fusion Middleware Control Console to monitor the Business Rule Service Engine and to test a SOA composite application that includes a Decision component.

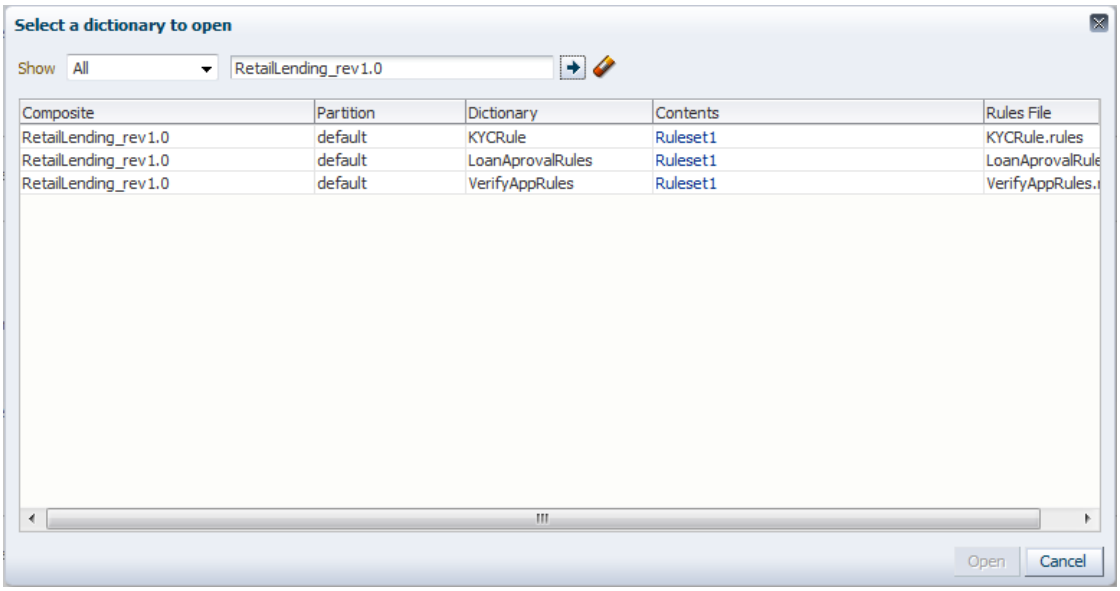
1.19.8 Editing Business Rules through SOA Composer

You can modify the existing business rules using SOA Composer. This can be used to increase verification and approval levels in any process-flow. You can open an existing rule dictionary as shown below.



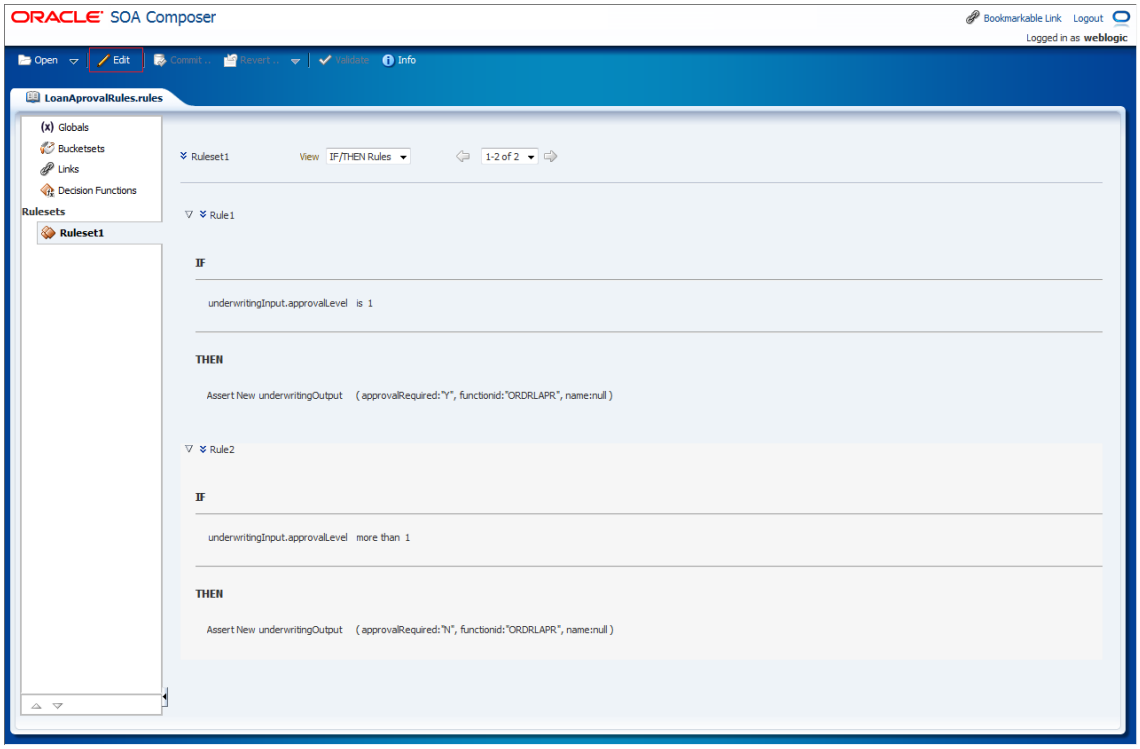
Open Rules in SOA Composer





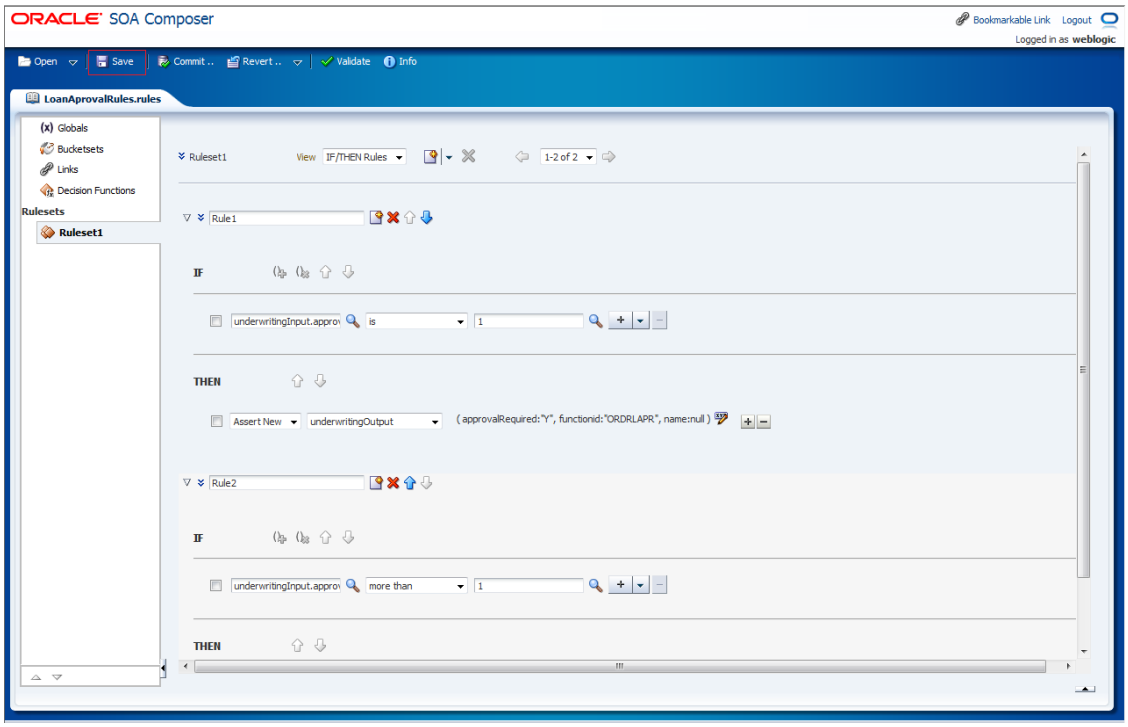
Select a dictionary to open in SOA Composer

Click the “Edit” button in the tool bar to enable editing of the selected Rule dictionary.

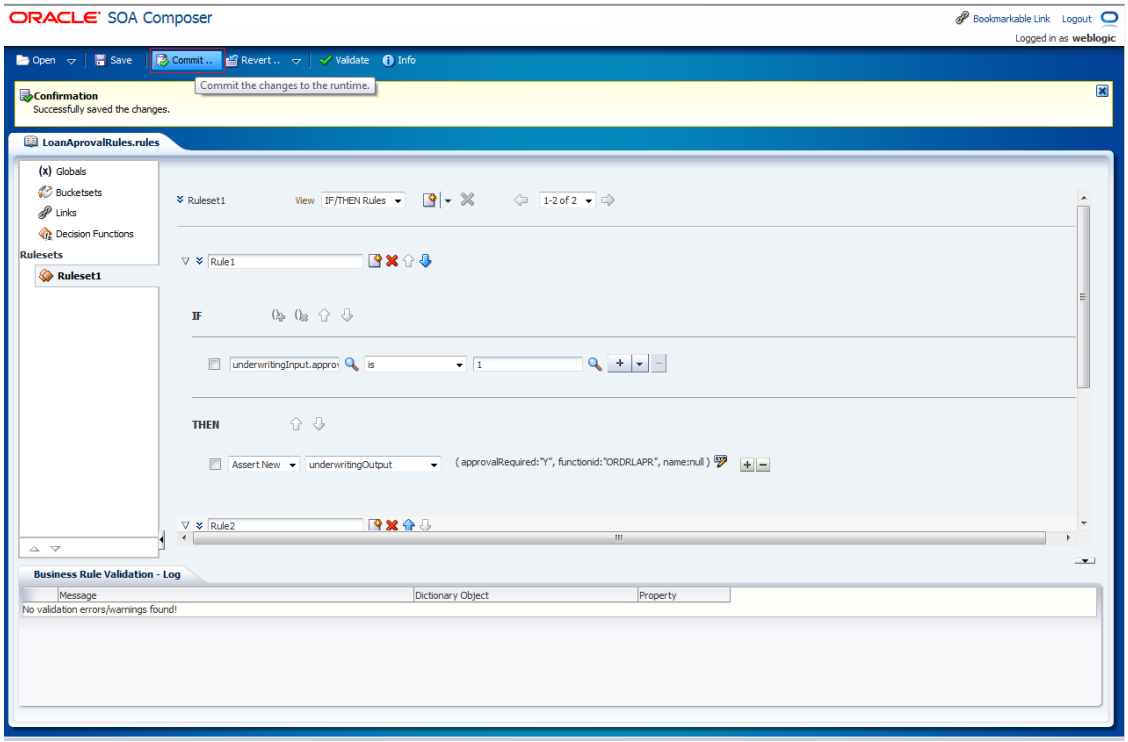


Edit Rules in SOA Composer

Once the changes are made, you can save the changes. The changes will get applied to the runtime application once you commit the changes done as shown below.



Save changes made in rules in SOA Composer

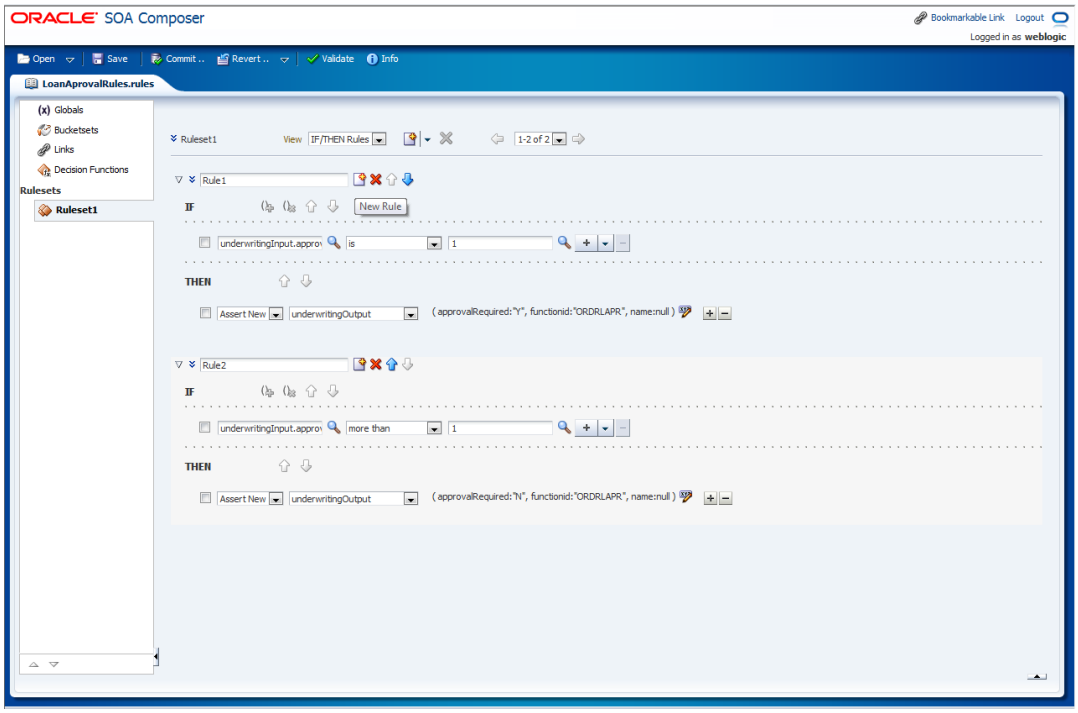


Commit changes to the runtime

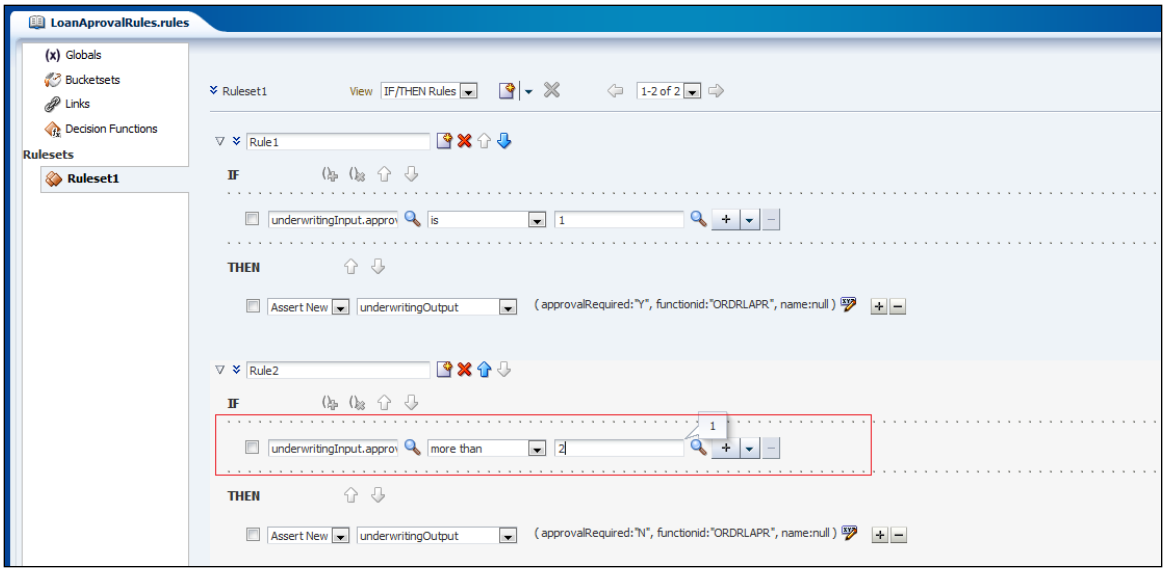
Example:

The following example shows how to add a new level of approval – Management Approval (ORDRLMAP) to an existing set of rules.

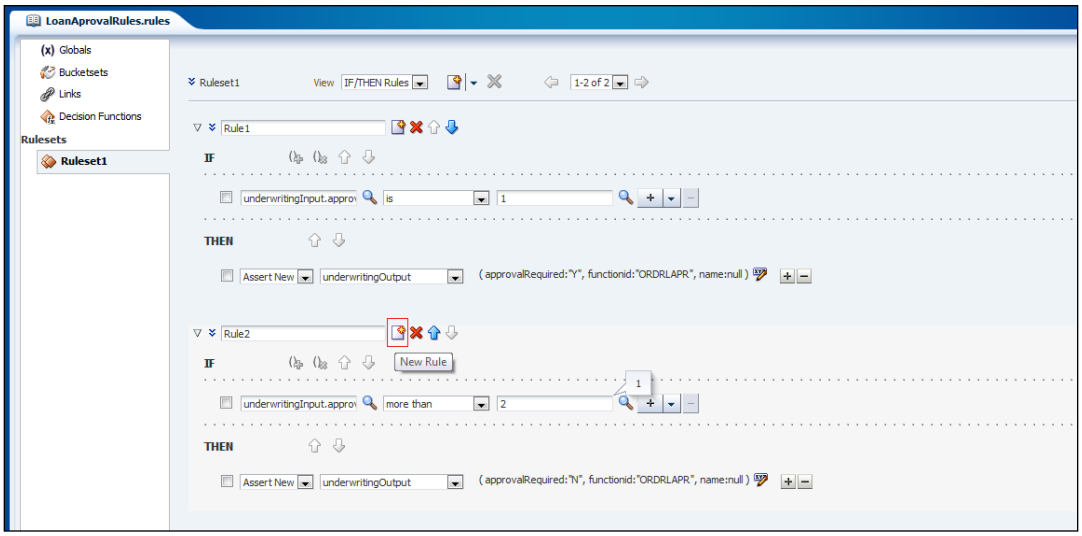
Step 1: Edit the existing rules wherever necessary (Rule 2 in our case, to handle the else condition).

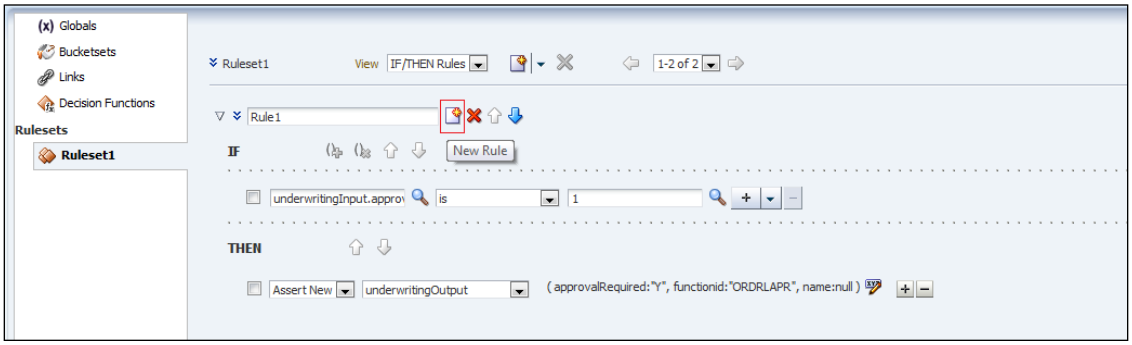


The highlighted portion in the image below shows the modification on an existing rule.

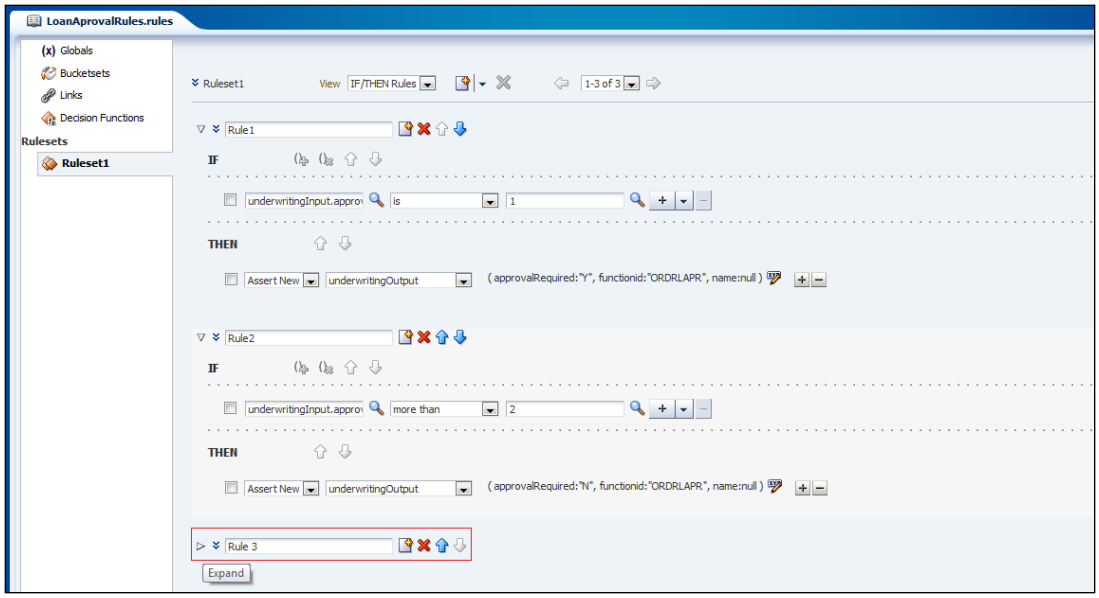


Step 2: Add a new rule by clicking the “New Rule” button as shown below.

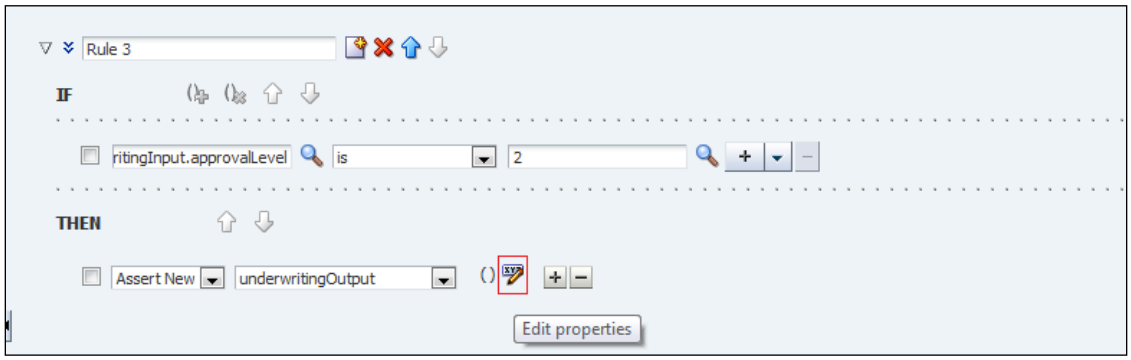


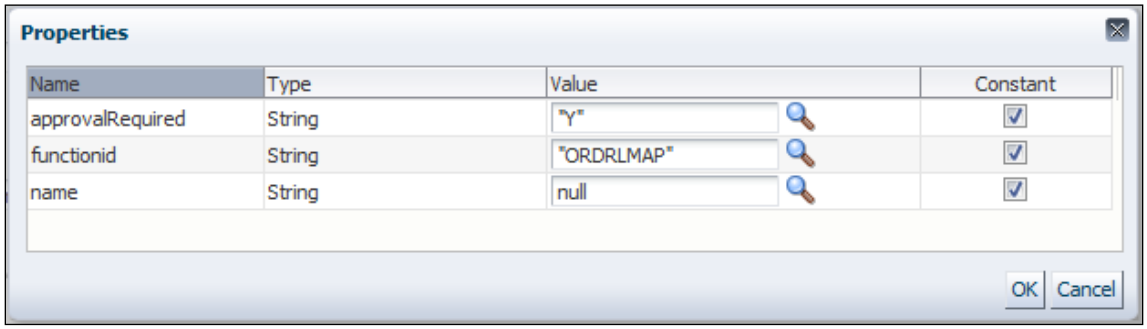


Step 3: Rename the newly created rule, expand and edit the rule.

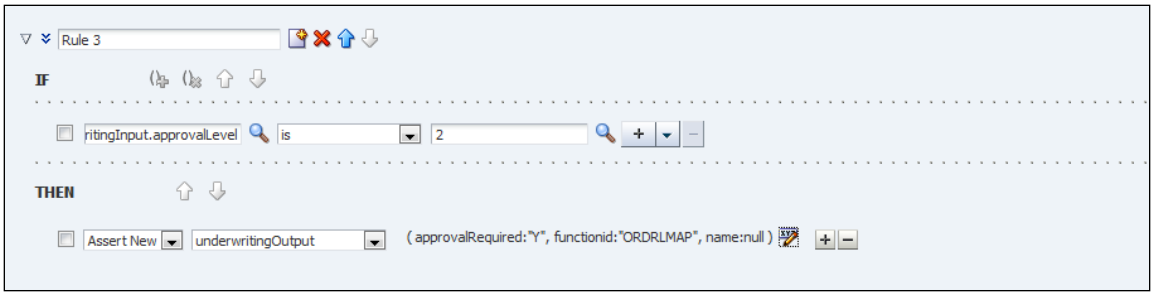


Step 4: Click the “Edit Properties” button to provide values for the variables

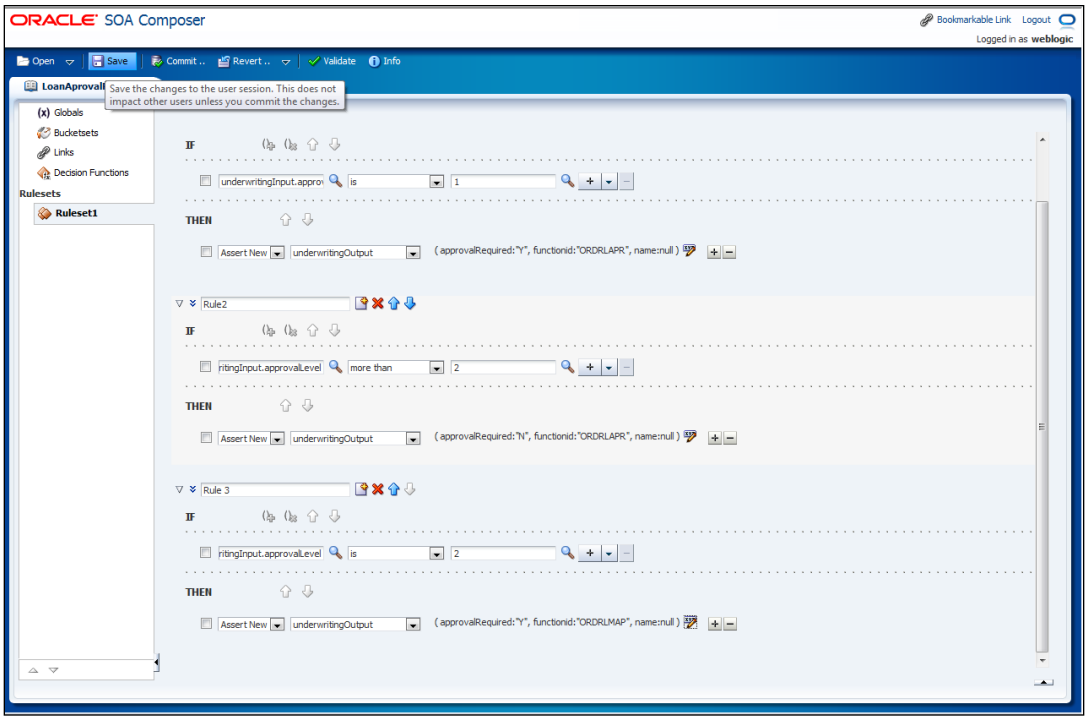


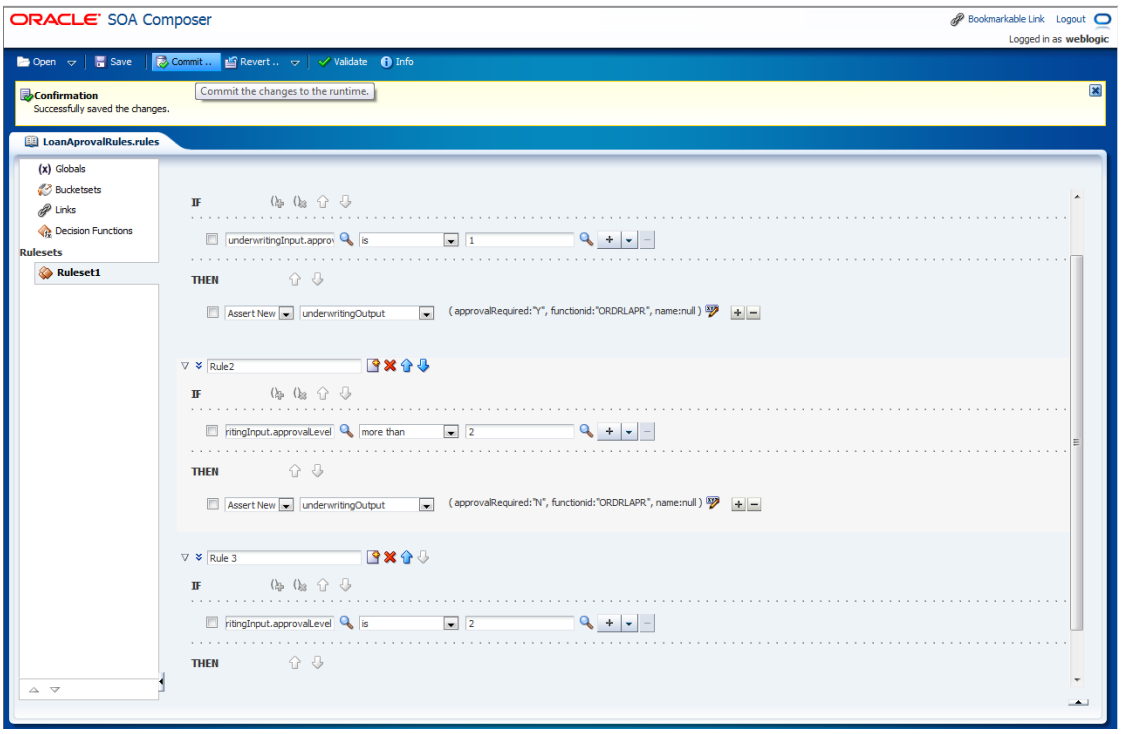


The image below shows the newly created rule.

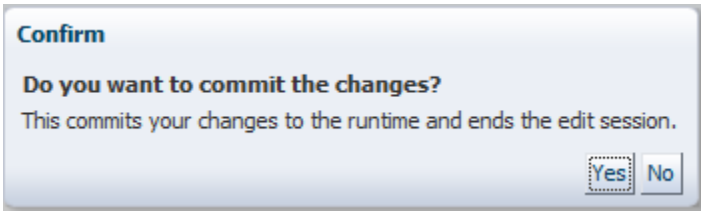


Step 5: Save the rule and commit it for the rules to invoke changes in the runtime.





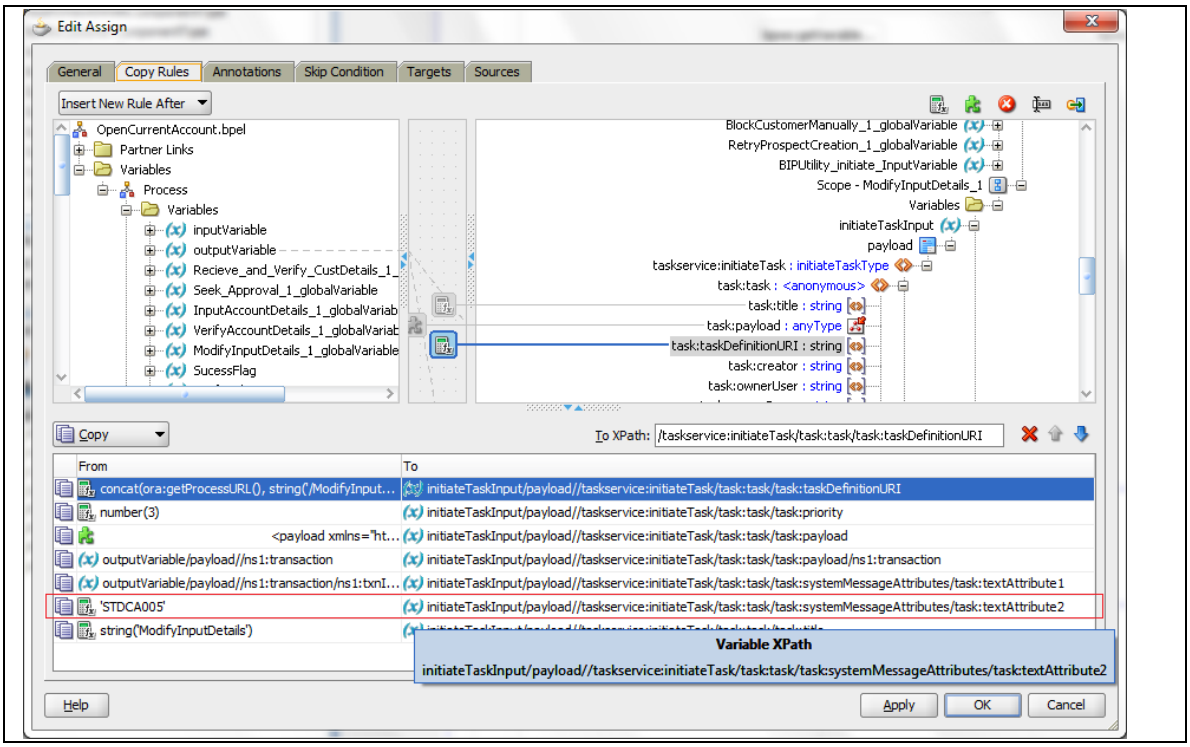
Confirm the commit to close the edit session and post changes into runtime.



1.20 Integrating Oracle FCUBS with BPEL Process Manager

1.20.1 Tying Human Tasks with FCUBS screens

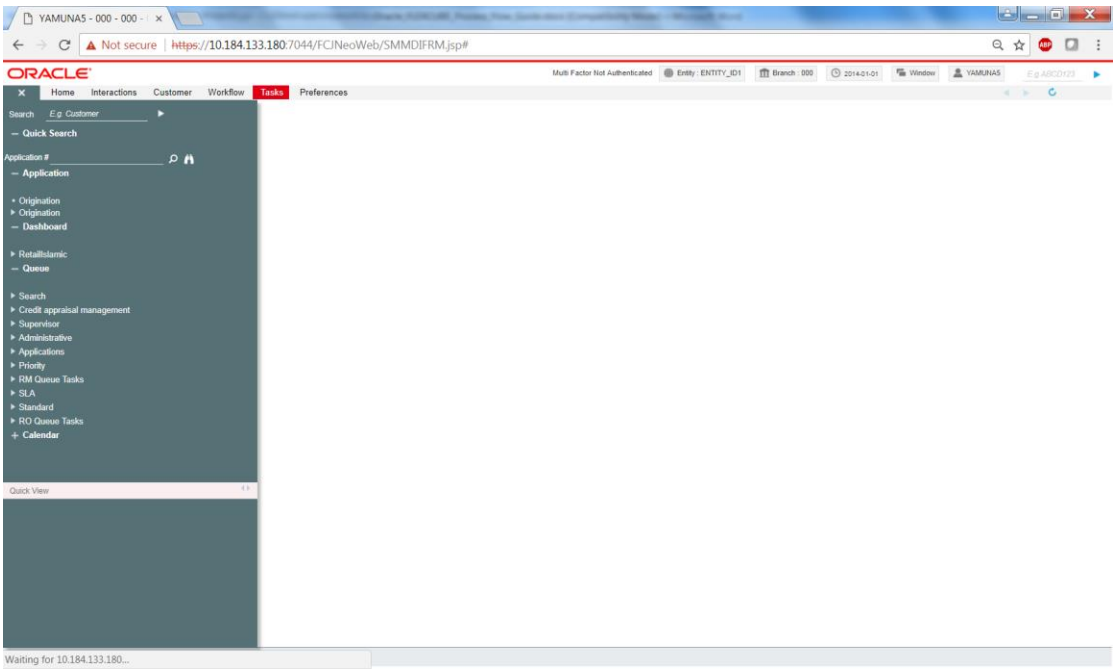
The Human Tasks are tied with the FCUBS screens through the Function Ids attached to each screen.



The Type String for the function ID should be set as “P” for the process-instantiating screen. I should be “T” for the remaining screens of the process-flow.

1.20.2 Worklist/Queue Configuration

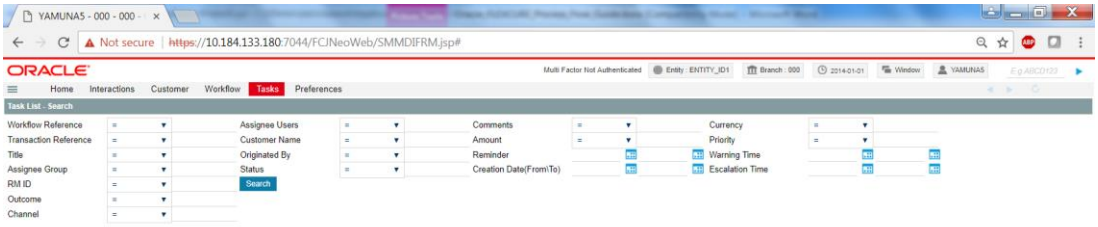
Click on ‘Tasks’ in the menu. The following screen is displayed:



ORACLE

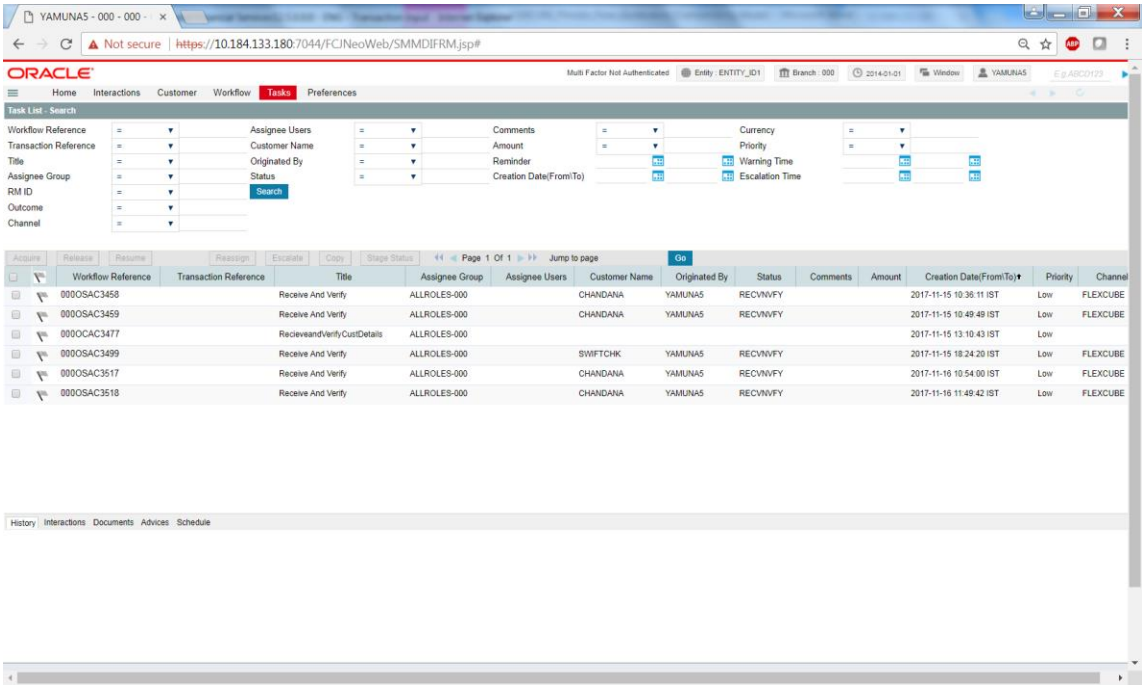
The system displays all the main menu items that you have maintained in the ‘Landing Page Configuration’ screen along with the ‘Search’ and ‘Standard’ main menu items on the left hand side of the screen.

You can query existing workflow tasks by clicking ‘Search’ and then choosing the relevant link under it. Under ‘Search’, you are provided the option of searching tasks across all process flows (the ‘ALL’ link) or for specific process flows. The fields available under the link ‘ALL’ are pre-defined in the system and the link ‘ALL’ is readily available. The other process flow specific links are displayed only if you maintain them in the ‘Landing Page Configuration’ screen.



Refer the section ‘Configuring Landing Page’ under ‘Operations’ in this user manual for further details.

Specify the basis for your search and click the ‘Search’ button. All the tasks that meet the parameters specified are fetched as displayed in the screen below:



If you do not specify any search parameter before clicking ‘Search’ button, all the tasks will be displayed.

Under the ‘Standard’ menu, the system displays the following sub-menus and the number of tasks against each of these sub-menus:

- Acquired
- Assigned
- Completed
- Pending
- Supervisor

When you click a sub-menu, the different process flows (transactions) for the sub-menu and the number of tasks outstanding for each process are displayed. Choose the process flow for which you require details and click on it. Details for all the tasks under the corresponding queue are shown in the Task List pane. When you click a task, the relevant details are displayed in the Transaction History pane (below the Task List pane)

The workflow actions that you can perform for a task are:

Acquire/Release

After a task is assigned to a group, you, as a user, can further process the task only if you acquire it. Select the transaction and click 'Acquire' button. The task will then be moved from the group queue to your task list. You can release the task that has already been acquired by clicking 'Release' button..

Reassign

A task can be re-assigned only by a supervisor to any of his subordinates. If you have the requisite rights, you can select the transaction and click 'Reassign' button in your task list. This is done when a contract is transferred from the maker of the contract to another user for further operations.

Resume

A task that has been suspended can be resumed when you click the 'Resume' button in your task list. You can then continue with the suspended task.

The system also gives you the option of carrying out the same action on many tasks simultaneously. To do this, you are required to select all the tasks that you want, by checking the box at the beginning of each row. The operations common to all the tasks are listed at the top of the Task Pane. You can select the appropriate one. The chosen action will be implemented for all the selected tasks. For example, after choosing the tasks that you require, you can acquire all of them in bulk (if the 'Acquire' operation is allowed for all the tasks).

1.20.3 Linkage to Oracle FCUBS validations and modus operandi

Oracle FCUBS validations are carried out in the Function ID and Module specific Upload Layer of FLEXCUBE.

Origination stages reach the module layer at two possible stages

1) On save of specific Human Tasks, and/or

2) In System Tasks.

On save of human tasks, Oracle FCUBS reaches the Function ID specific Upload Layer every time, but the decision to reach the Module Upload Layer is based on the field - "Application Status". A utility package is used to control this logic.

The Utility package does the following operations:

1) Performs generic validations

2) Calculates Credit Rules and Ratios, and performs pricing operations

3) Analyses screen-actions and routes to specific Module Layers accordingly

4) Controls the decision to call the module upload layer based on the Applications Status.

5) Analyses the Application Status to sequence multiple module-uploads.

6) Convert data from Function ID-specific table-types to Module-specific table types.

7) Performs function calls to the related module upload layers.

8) Converts data back from Module-specific table types to Function ID-specific table-types.

9) Logs Overrides

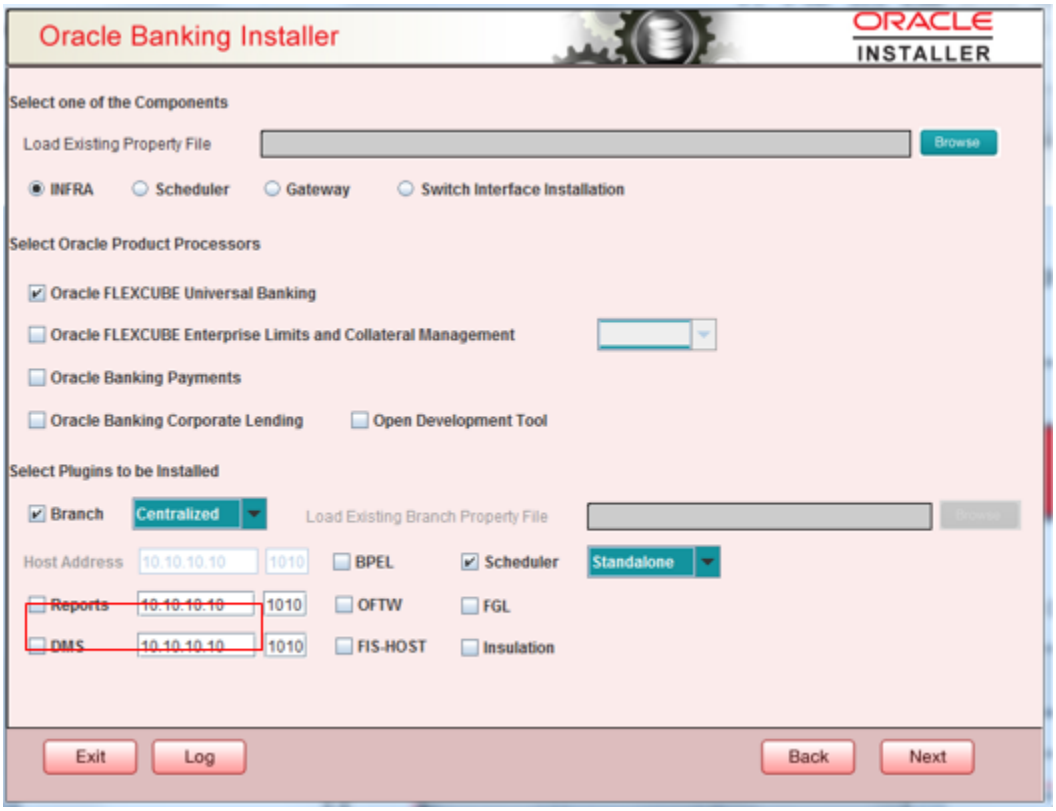
10) Decides whether to Save/Rollback the data based on the Application Status.

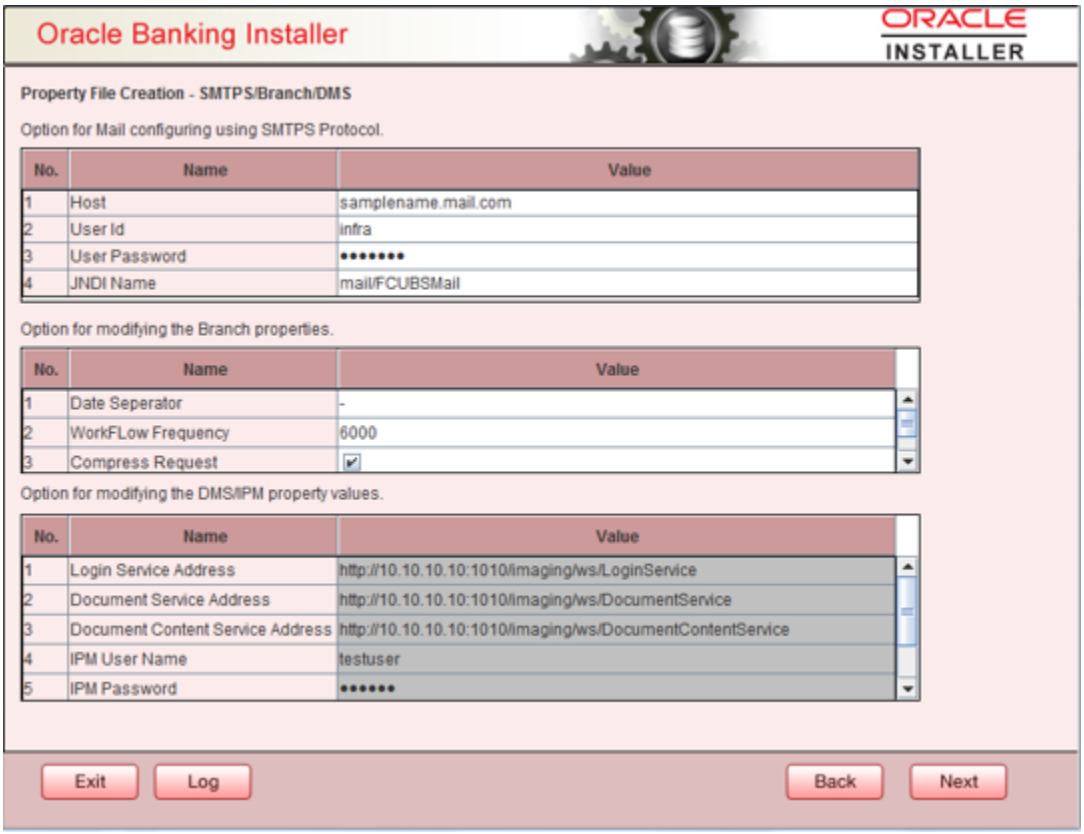
1.21 Configuring Oracle FCUBS with Oracle UCM and BIP

Oracle FCUBS can be configured with Oracle UCM for Document Management and BIP for Reports by choosing relevant plug-ins/adapters during Oracle FCUBS installation.

1.21.1 Oracle FCUBS and Oracle UCM

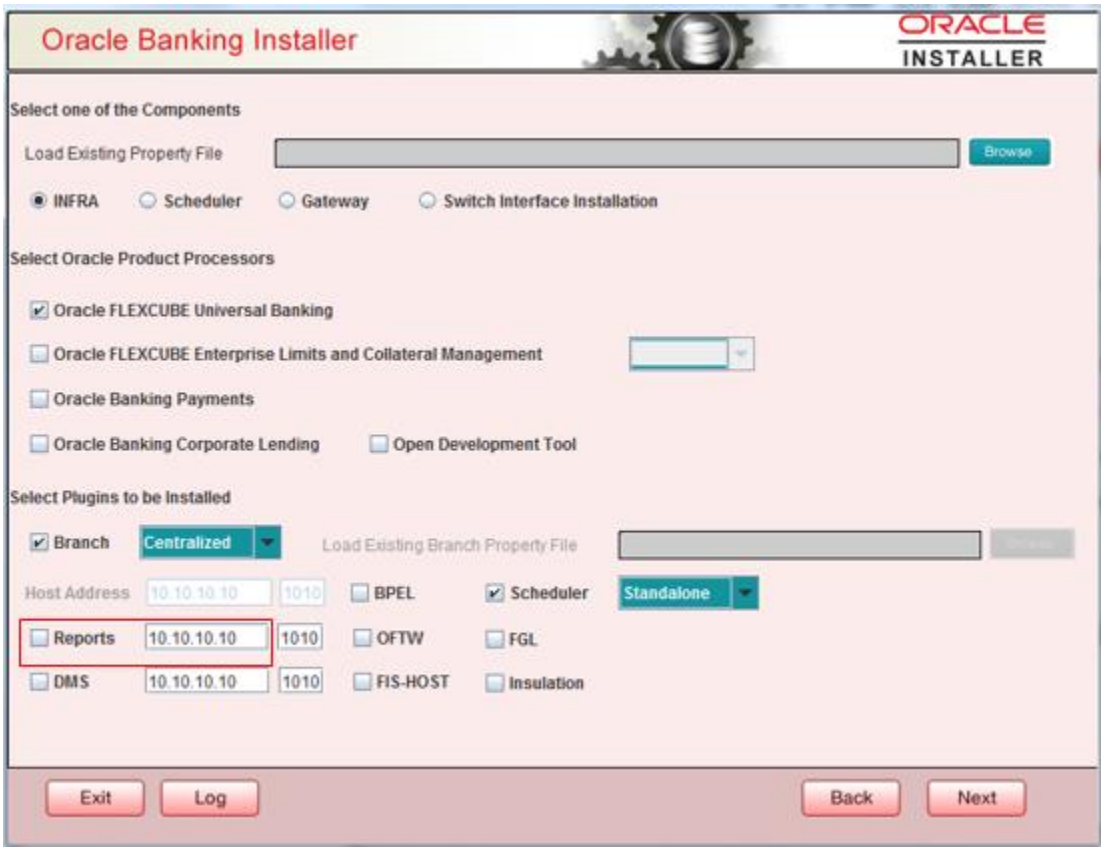
The following images provide the parameters/values for configuring Oracle FCUBS with Oracle UCM.

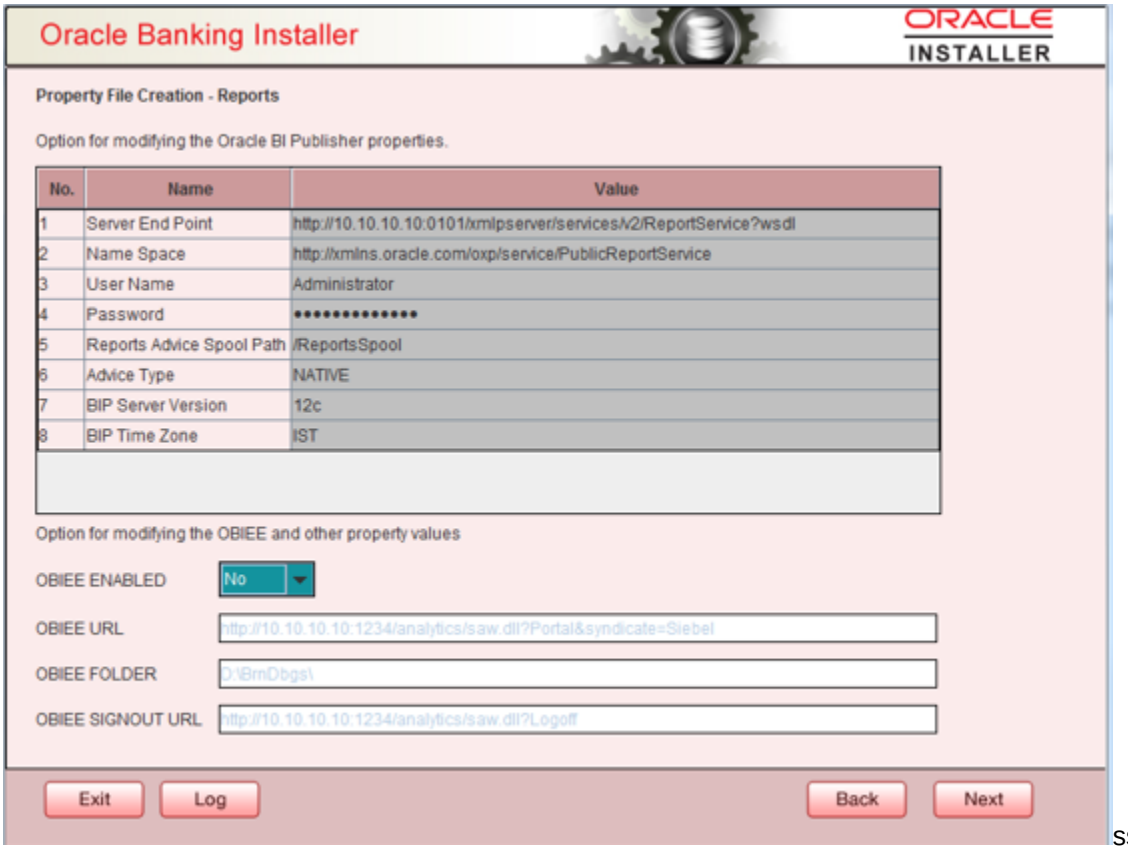




1.21.2 Oracle FCUBS and BIP

The following images provide the parameters/values for configuring Oracle FCUBS with BIP.


Oracle Banking Installer
ORACLE
INSTALLER
Select one of the Components
Load Existing Property File
Browse
INFRA
Scheduler
Gateway
Switch Interface Installation
Select Oracle Product Processors
Oracle FLEXCUBE Universal Banking
Oracle FLEXCUBE Enterprise Limits and Collateral Management
Oracle Banking Payments
Oracle Banking Corporate Lending
Open Development Tool
Select Plugins to be Installed
Branch
Centralized
Load Existing Branch Property File
Host Address
10.10.10.10
1010
BPEL
Scheduler
Standalone
Reports
10.10.10.10
1010
OFTW
FGL
DMS
10.10.10.10
1010
FIS-HOST
Insulation
Exit
Log
Back
Next



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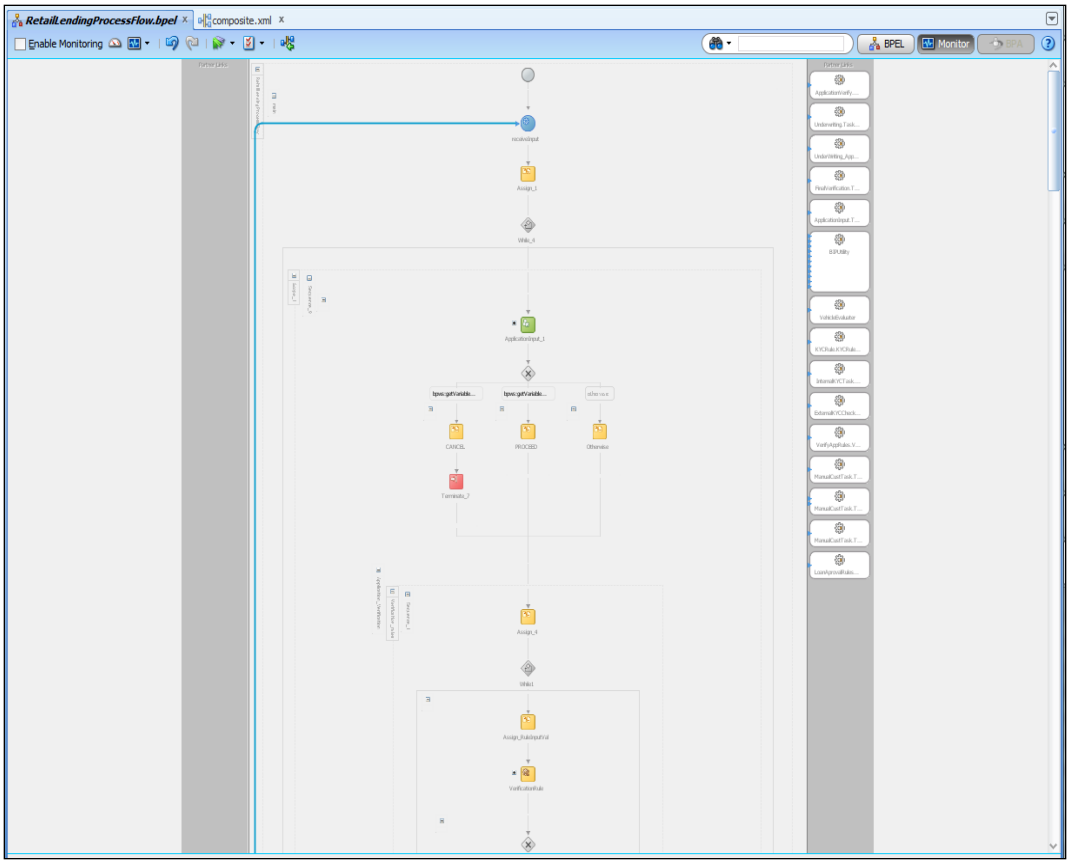
1.22 How to Instrument BPEL process to push data to BAM

There are two ways to push data to Business Activity Monitor they are as follows:

- Enabling Sensors
- Adding External Data Source

1.22.1 Enabling Sensors

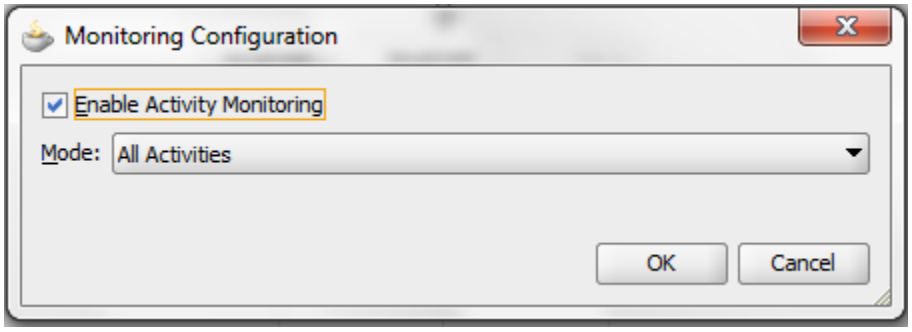
Step 1: Go to the BPEL Process.



Step 2: Check the **Enable Monitoring** and Click **Monitor Configuration** Icon

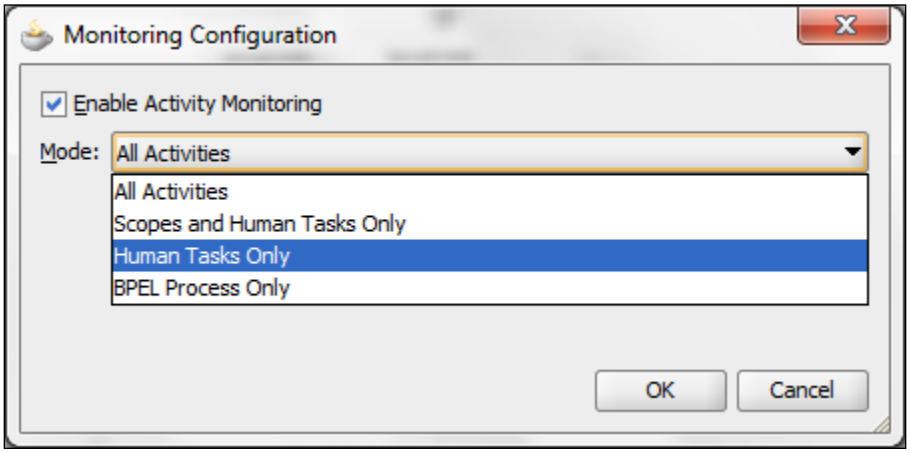
Step 3: A dialog Box appears Showing the Mode of monitoring

We can feed data of **All Activities** to BAM by selecting **All Activities** mode



(OR)

Feed data of specific activities like **Human Tasks**,**Scopes**,**BPEL Process**



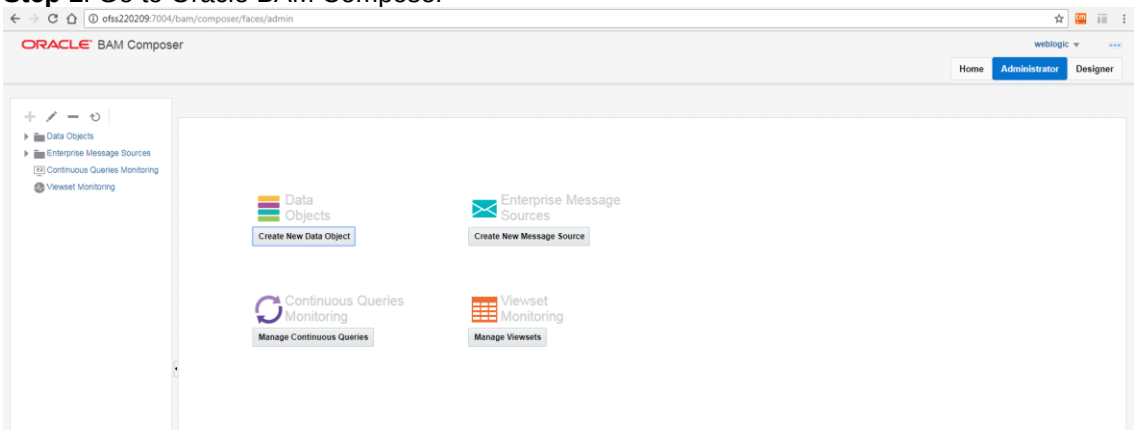
Now these data are feed to a default BAM report called **Monitor Express**

1.22.2 Adding External Data Source

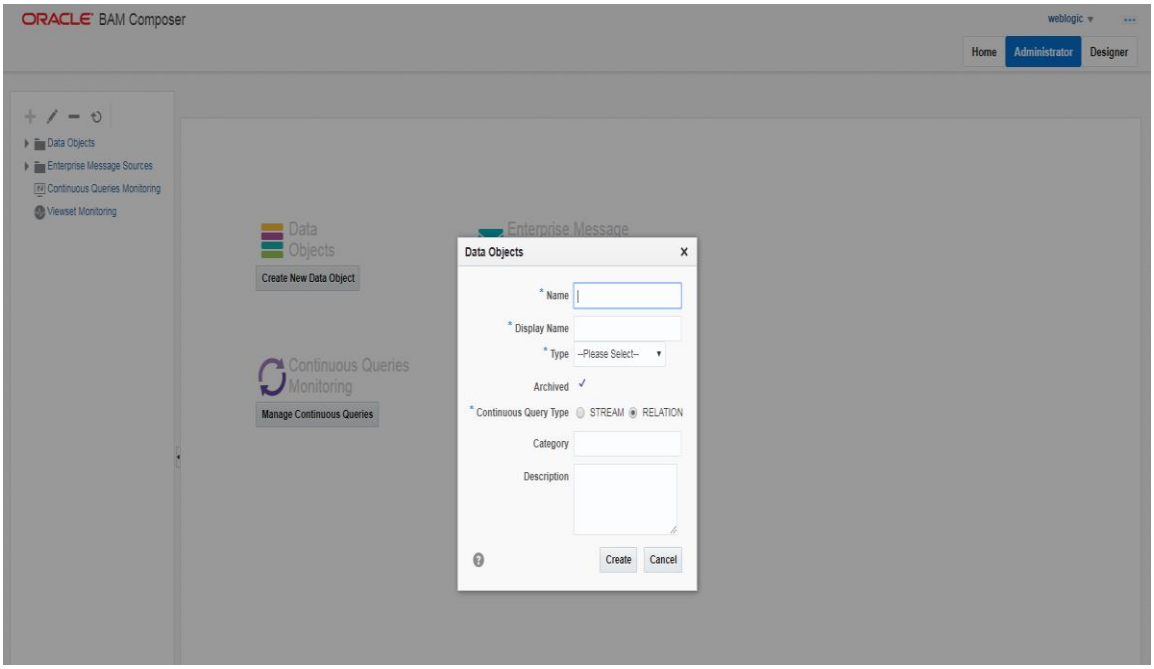
When the user has done setup for BAM reports in BPEL, data can be feed to BAM Reports by External Data Sources

URL: http://<hostname>:<port>/bam/composer

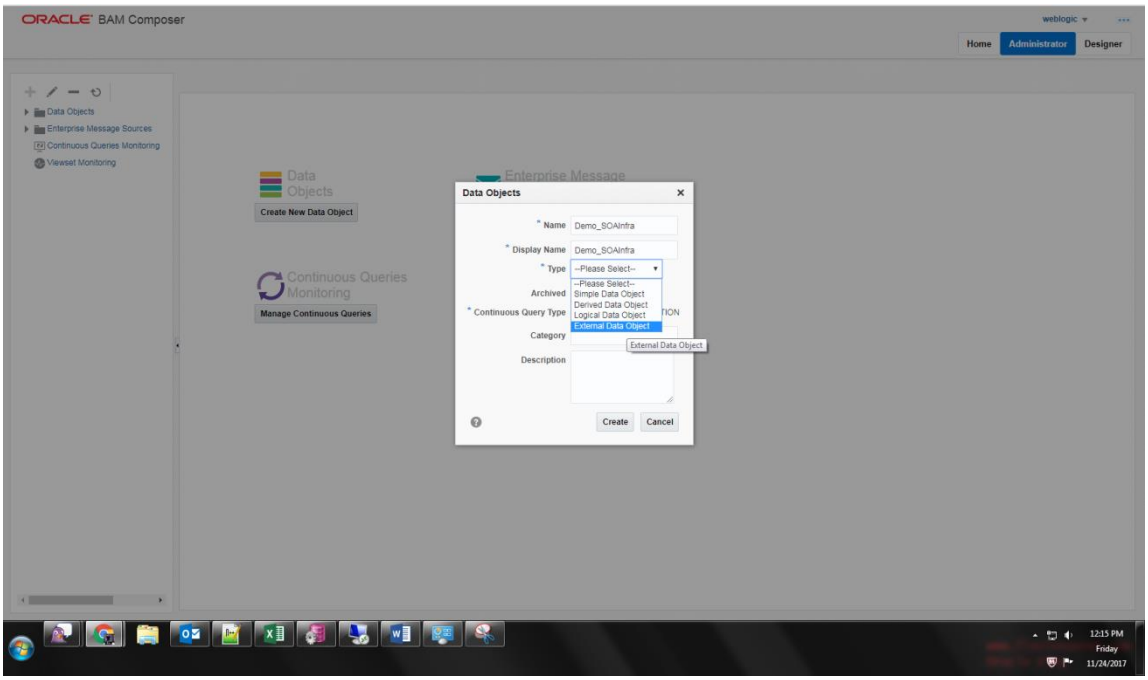
Step 1: Go to Oracle BAM Composer



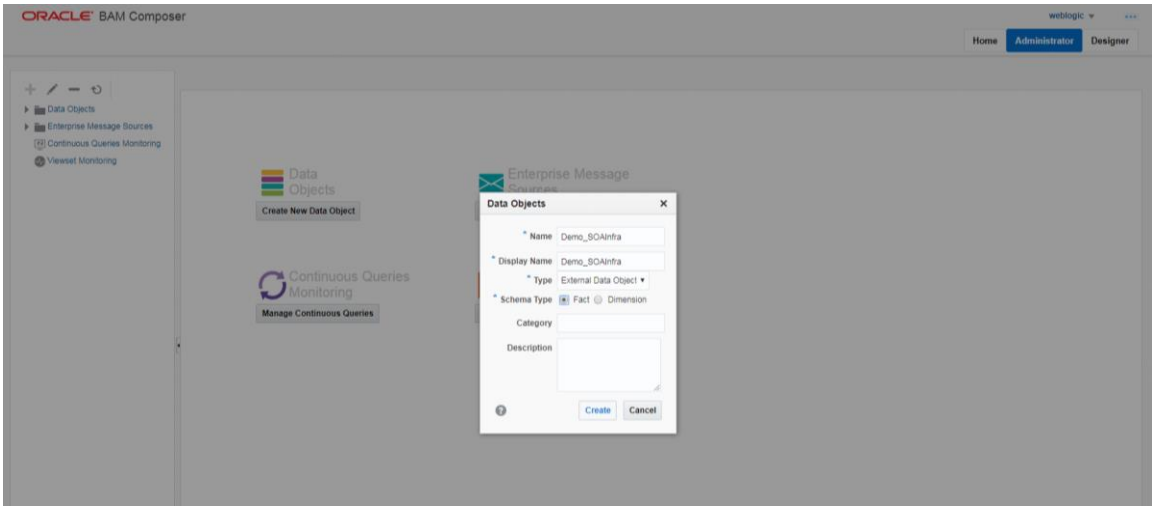
A window appears as shown below:



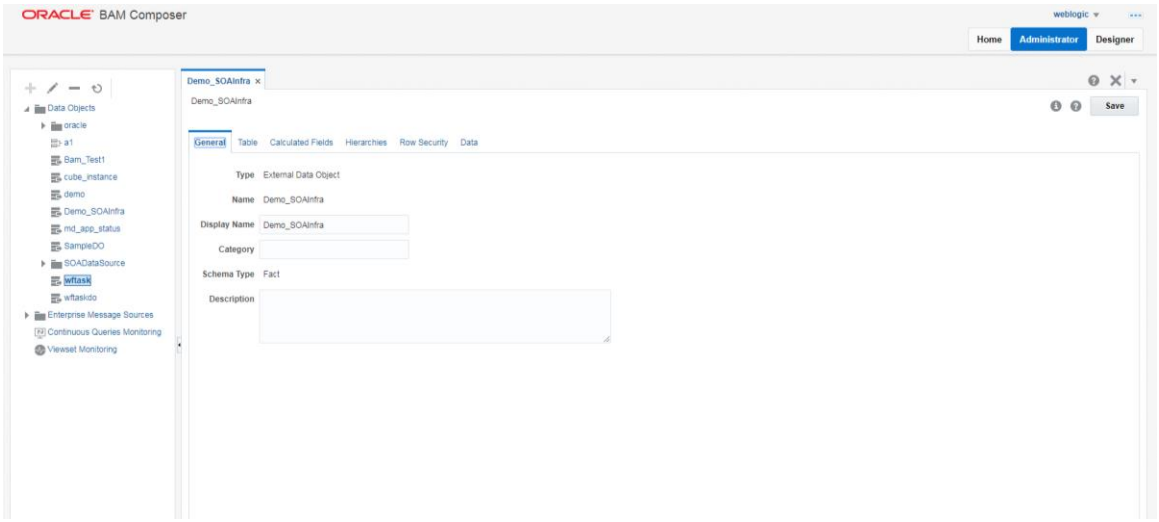
Step 2: Now click on Create New Data Object.



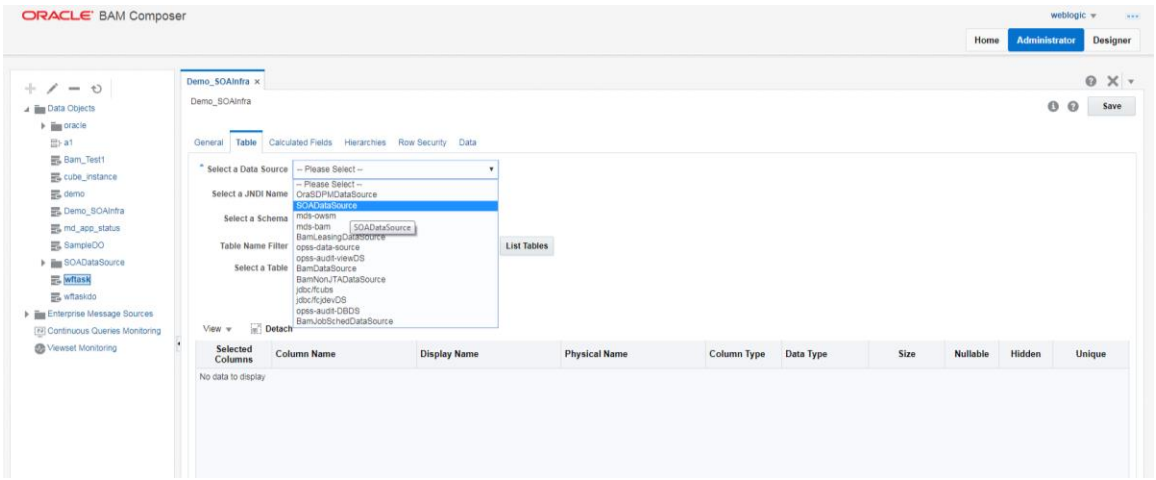
Step 3: Input the Name, Type as ‘External Data Object’ and Schema Type as ‘Fact’



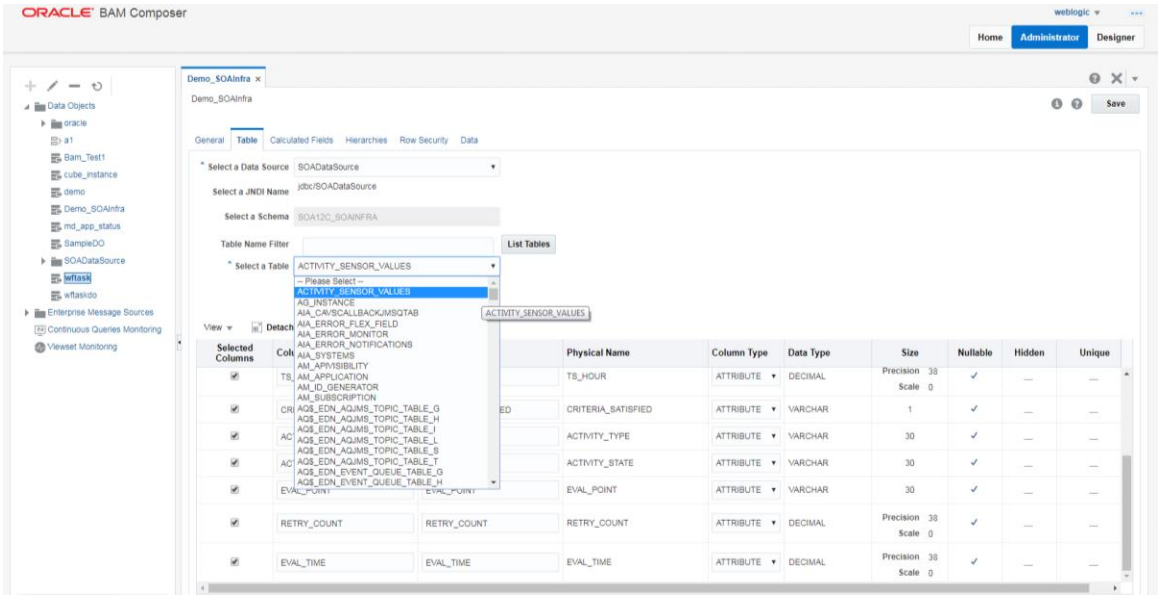
Step 4: Refresh the data source and the new datasource create will appear on the left panel and click on the same, it displays the details as below:



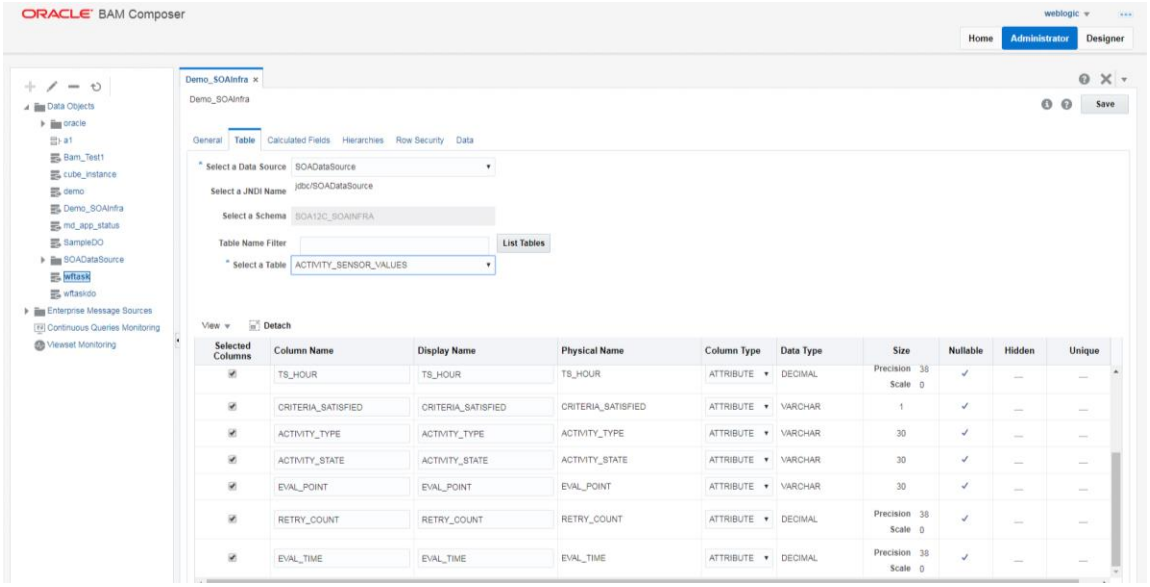
Step 5: Move to the tab Table, and select a Data source and JNDI name



Step 6: Select a Table name from the drop down



Step 7: Click on the save option available on the right top corner


ORACLE BAM Composer
weblogic
Home
Administrator
Designer
Demo_SOAInfra
Demo_SOAInfra
Save
Data Objects
oracle
a1
Bam_Test1
cube_instance
demo
Demo_SOAInfra
md_app_status
SampleDO
SOADataSource
wftask
wftaskdo
Enterprise Message Sources
Continuous Queries Monitoring
Viewset Monitoring
General
Table
Calculated Fields
Hierarchies
Row Security
Data
Select a Data Source
SOADataSource
Select a JNDI Name
jdbc/SOADataSource
Select a Schema
SOA12C_SOAINFRA
Table Name Filter
List Tables
Select a Table
ACTIVITY_SENSOR_VALUES
View
Detach
Selected Columns
Column Name
Display Name
Physical Name
Column Type
Data Type
Size
Nullable
Hidden
Unique
TS_HOUR
TS_HOUR
TS_HOUR
ATTRIBUTE
DECIMAL
Precision 38
Scale 0
CRITERIA_SATISFIED
CRITERIA_SATISFIED
CRITERIA_SATISFIED
ATTRIBUTE
VARCHAR
1
ACTIVITY_TYPE
ACTIVITY_TYPE
ACTIVITY_TYPE
ATTRIBUTE
VARCHAR
30
ACTIVITY_STATE
ACTIVITY_STATE
ACTIVITY_STATE
ATTRIBUTE
VARCHAR
30
EVAL_POINT
EVAL_POINT
EVAL_POINT
ATTRIBUTE
VARCHAR
30
RETRY_COUNT
RETRY_COUNT
RETRY_COUNT
ATTRIBUTE
DECIMAL
Precision 38
Scale 0
EVAL_TIME
EVAL_TIME
EVAL_TIME
ATTRIBUTE
DECIMAL
Precision 38
Scale 0

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2. New Process Development

2.1 BPEL Components:

The basic components used to create a BPEL Process Flow are as follows:

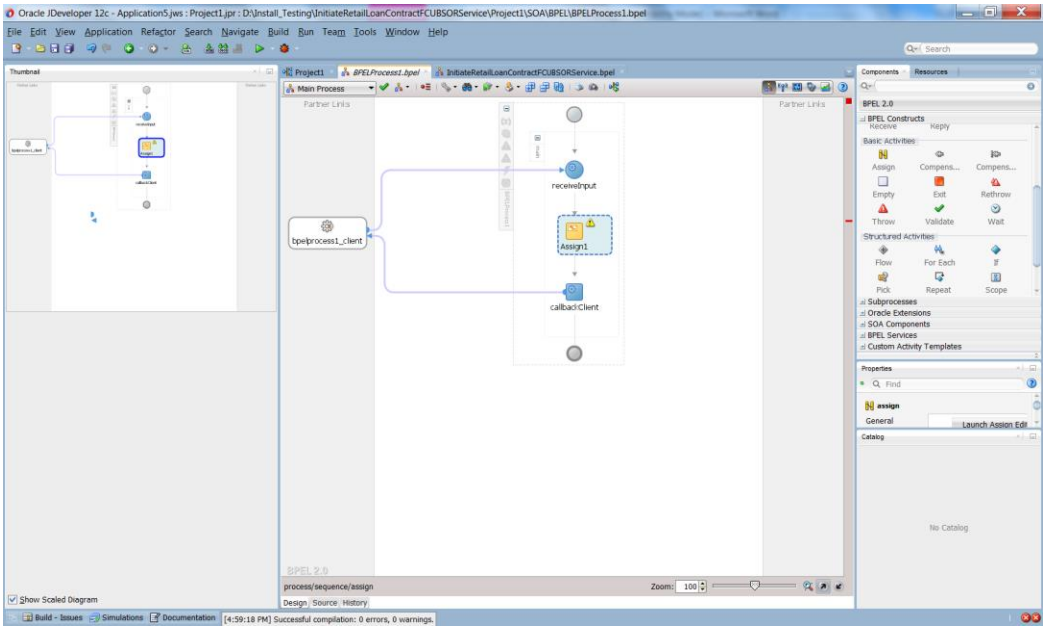
- Human Task
- Business Rules
- BPEL Process
- Assign Activity
- Invoke Activity
- Receive Activity
- Reply Activity
- Scope Activity
- Terminate Activity
- Throw Activity
- While Activity
- Empty Activity
- Java Embedding
- Switch
- Partner link

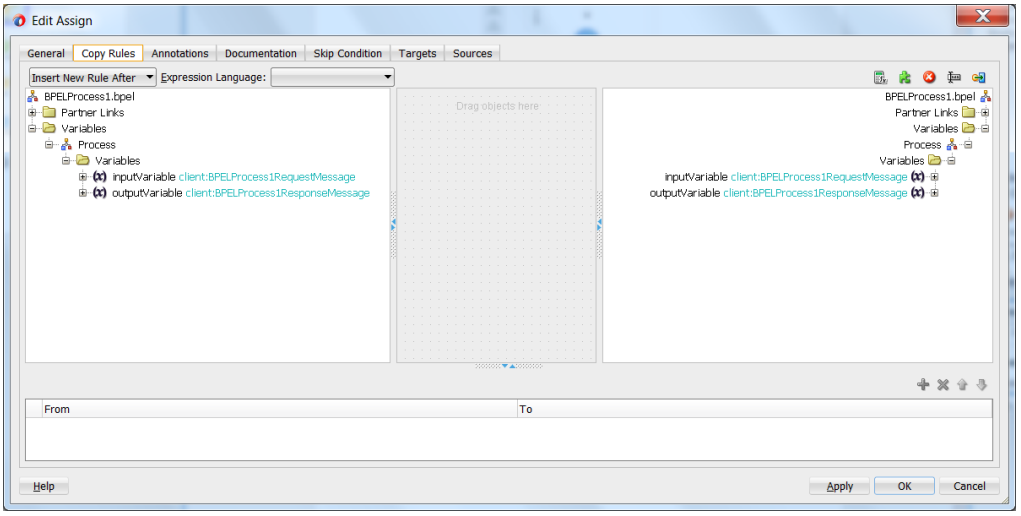
2.1.1 Guidelines for defining the process:

I. BPEL Process must have the same name as the Project.

II. For invoking a service, **Invoke activity** must be used. The guidelines for the invoke activity are as follows
   a. Provide the activity with a meaningful name.
   b. Select the partner link for which an operation is to be specified.
   c. Select the operation to be performed.
   d. Create a variable or select an existing variable in which data (payload) is transported.

III. **Assign activity** is generally used for data manipulation, such as copying the contents of one variable to another. Assign activity is generally used for data manipulation, such as copying the contents of one variable to another. There are 4 icons displayed above the target node that enables you to perform the following tasks on target nodes.





a. **Expression icon:** Drag this icon to a target node to invoke the Expression Builder dialog for assigning an XPath expression to that node.
b. **Literal (BPEL 2.0 specification) icon or XML Fragment (BPEL 1.1 specification) icon:** Drag this icon to a target node to invoke a dialog for assigning a literal (if the BPEL project supports the BPEL 2.0 specification) or XML fragment (if the BPEL project supports the BPEL 1.1 specification) to that target node.
c. **Remove icon:** Drag this icon to a target node to create a bpelx:remove extension rule.
d. **Rename icon:** Drag this icon to rename a target node. This adds a bpelx:rename extension rule with an elementTo attribute.
e. **Recast icon:** Drag this icon to recast a target node. This adds a bpelx:rename extension rule with a typeCastTo attribute. This results in an xsi:typeattribute in the XML output.

IV. To define an external service with which the process interacts, a **Partner Link** can be used with the following guidelines:
a. The web services description language (WSDL) file of the external service must be provided.

b. The actual service type (defined as Partner Link Type) must be provided.
c. The role of the service (defined as Partner Role) must be provided.
d. The role of the process requesting the service (defined as My Role) must be provided.

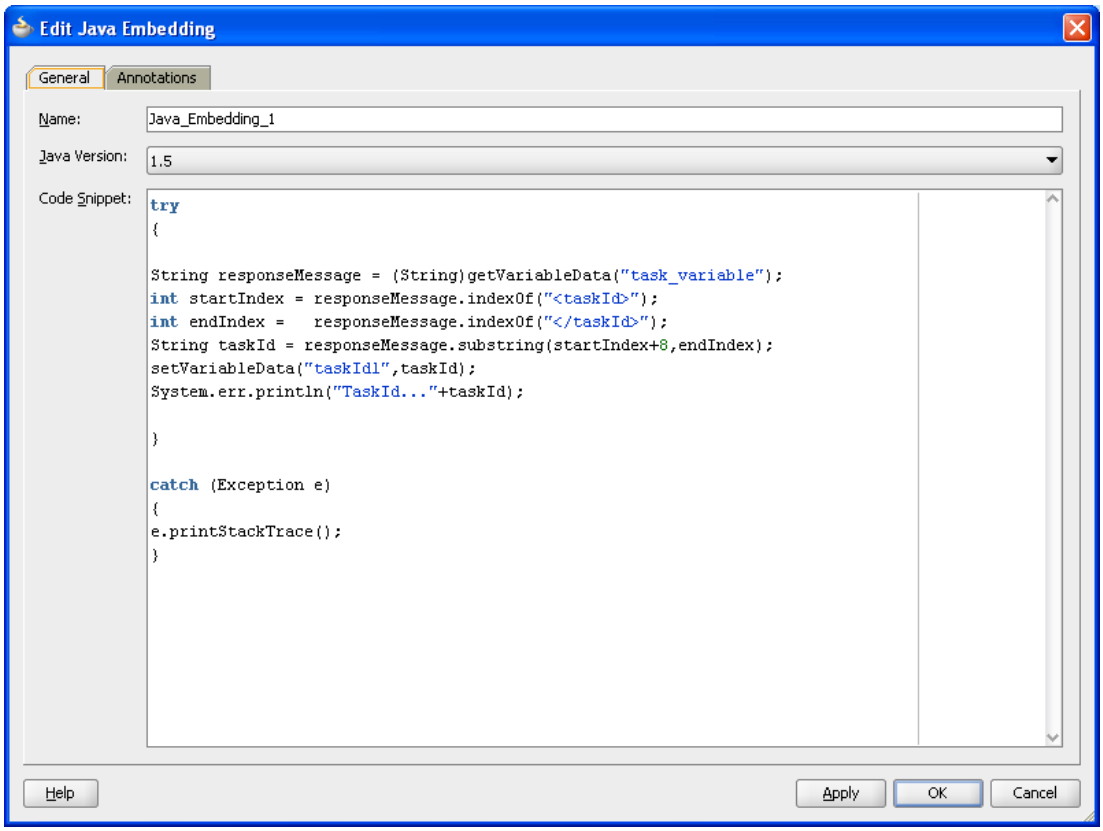
V. **Receive activity** specifies the partner link from which to receive information and the port type and operation for the partner link to invoke. The guidelines for adding a receive activity are as follows:
   a. Provide a meaningful name.
   b. Select the partner link service for which to specify an operation.
   c. Select the operation to be performed.
   d. Create a variable or select an existing variable in which data (payload) is transported.

VI. **Reply activity** allows the process to send a message in reply to a message that was received through a receive activity. The combination of a receive activity and a reply activity forms a request-response operation on the WSDL port type for the process.

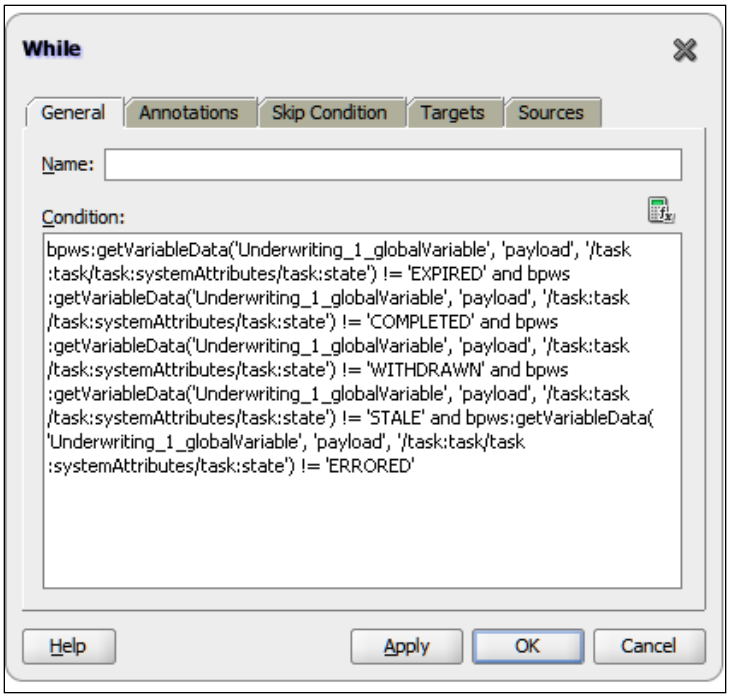
VII. **Scope activity** consists of a collection of nested activities that can have their own local variables, fault handlers, compensation handlers, and so on. It is analogous to a { } block in a programming language. The following guidelines must be followed while adding a catch block.
   a. Each scope has a primary activity that defines its behavior.
   b. There can be many nested activities inside the scope.
   c. Scopes can contain other scopes, if they are not Isolated
   d. Scopes can have Compensation and Termination handlers
   e. Variables created inside the scope are visible only to itself and any nested scopes if present.
   f. Fault handling is associated with a scope activity using Catch activity.
      i. Catch activity is present in a scope activity to create a set of custom fault-handling activities.
      ii. Each catch activity is defined to intercept a specific type of fault.
      iii. This is done to create fault handling logic to catch and manage exceptions.
      iv.

VIII. **Empty Activity** enables you to insert a no-operation instruction into a process.

IX. **Java Embedding Activity** enables you to add custom Java code to a BPEL process using the Java BPEL exec extension bpelx:exec.

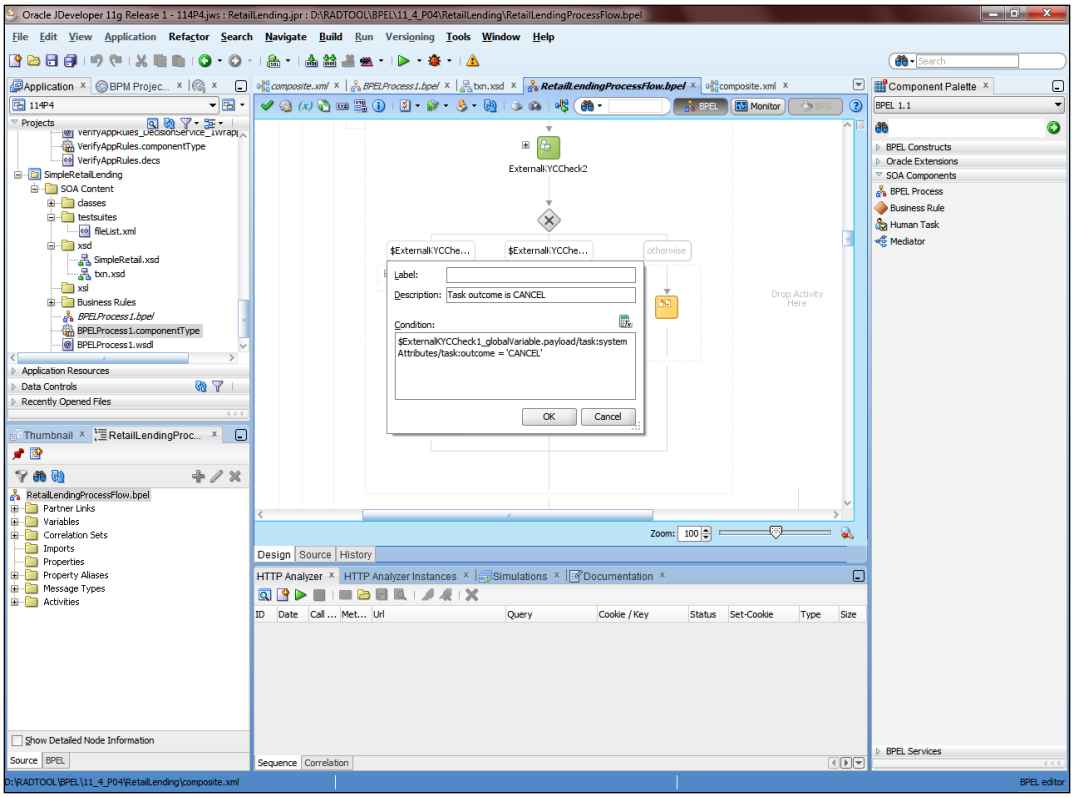


X. **Terminate Activity** enables you to end the tasks of an activity
XI. **Throw Activity** generates a fault from inside the business process.
XII. **While Activity** supports repeated performance of a specified iterative activity.
    a. Repeated only till the given while condition is no longer true.

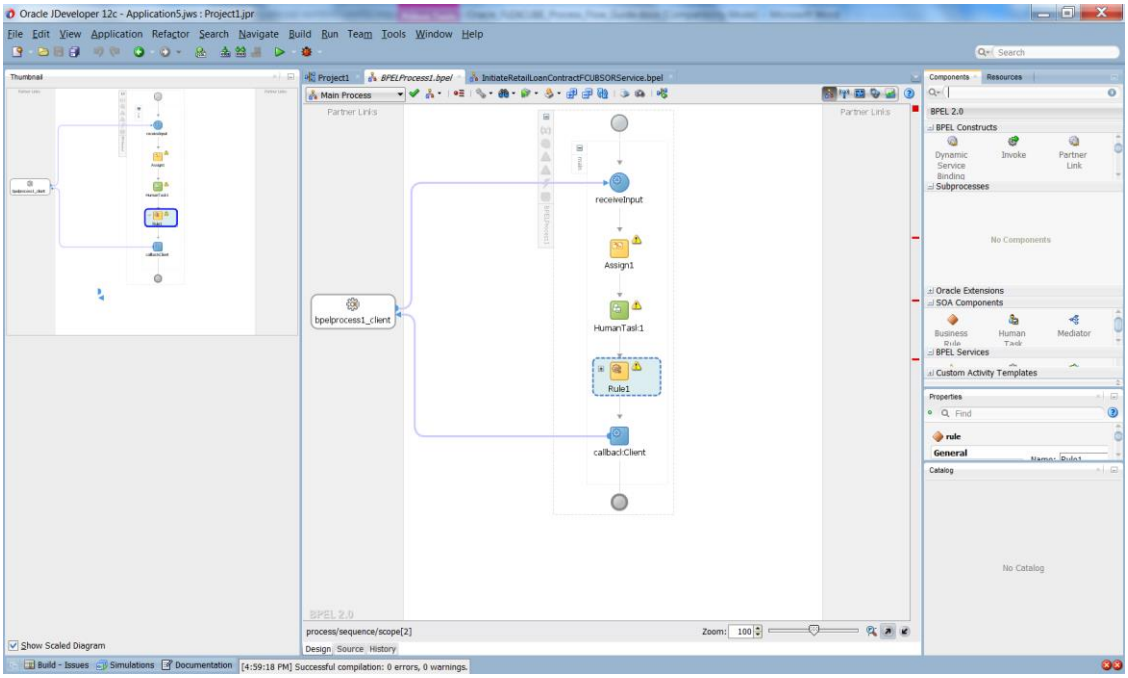


XIII. **Switch Activity** consists of an ordered list of one or more conditional branches defined in a case branch, followed optionally by an otherwise branch. Guidelines are as follows:

b. Branches are considered in the order in which they appear
c. When no branch with a condition is taken, the otherwise branch is taken.
d. If otherwise branch is not explicitly specified, an otherwise branch with an empty activity is assumed to be available.



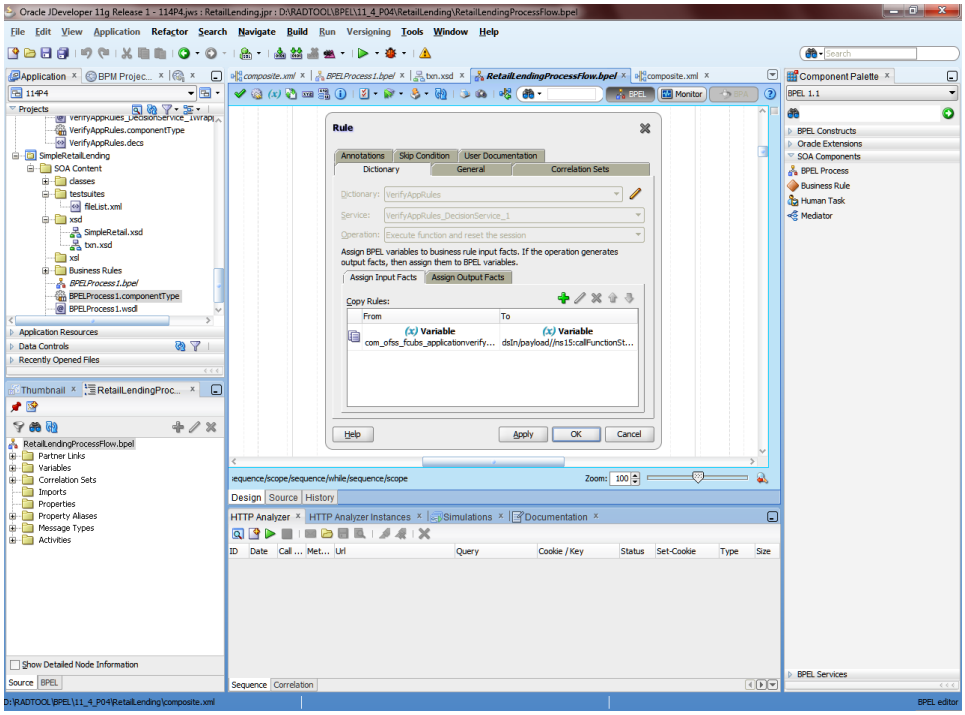
XIV. **Human Tasks** are used for creating or associating a task definition file with an activity. When a new stage is to be added to the process, a human task is added. Guidelines for human tasks are as follows:



e. Function ID of the stage must be mapped to the human task that corresponds to it.
f. Human tasks must have a variable that has a payload(data) transported to it.

XV. **Business Rules** are the rules that specify the policies of the organization. These rules can be altered dynamically in SOA composer or in the BPEL process itself . Guidelines for creating Business rules are as follows:

g. Rule must be given a proper name
h. Inputs and Outputs must be defined for the rule
i. Conditions must be specified in the rule sets



2.2 Embedding the payload

j. For defining payload, a variable that contains the data (payload) transported must be imported or a new variable must be created for defining the payload.
k. Generally an xsd file is imported for embedding the payload to the process.
l. This xsd file would be having the format for receiving the data from the screen/front end and few other meta data.
m. Using the FCJDOMtoFCJXXXConverter.java class the data from the external processes like DBUtility, CreditBureau etc the data gets converted from FCJDOM to DBDOM.

2.3 Screen Definition in ODT

a. The initial stage screen (say Application Entry screen in Retail Loan Origination) must be Process Screen and the screens that proceeds must be Transaction Screens

b. All the screens of the process must be mapped to the process code maintained for the process in SMTM_PROCESS_CODES.

c. The Header and the Footer of the screens must be of type PROCESS.

d. The template screen must be a Maintenance screen

2.4 Stitching up process & screens

a. The screens must be mapped to a process code in SMTB_MENU.

b. The process codes would be present in SMTM_PROCESS_CODES as mentioned earlier.

c. The function IDs must be given for the human task in the BPEL process flow that corresponds to the stage.

d. The initial stage screen (say Application Entry screen in Retail Loan Origination) must be Process Screen and the screens that proceeds must be Transaction Screens as mentioned earlier.

2.5 Work List / Queue configuration

Already present in generic maintenance.

3. Modifying an Existing Process

3.1 Adding a new Stage

a. To add a new stage to a process a Human Task is added which specifies the activities of the stage.
b. Human Task will be mapped to the function ID of the stage/screen.
c. Human task can be dragged and dropped from the component pallet

BPEL_FCJ_DevGuide .docx

d. Creating a human task is explained briefly in the

3.2 Removing an existing stage / Bypassing an existing stage

a. To remove an existing stage, the human task corresponding to the stage can be selected and deleted.

b. To bypass an existing stage Business Rules can be added to the process

   i. Business rules are mainly used for describing the policies and rules of the company.
   ii. These business rules will be validated and the decision will be taken by the process accordingly.
   iii. For instance, say in Retail Loan Origination Process Blacklist check is a non-mandatory stage and so Blacklist check stages needs to be visited only if the KYC Required flag is set. In this case suitable rules may be used to check the status of the KYCRequired flag and visit the KYC stages only if the flags are set

3.3 Adding fields to existing process

a. The xsd file which has the data(payload) transported needs to be opened in the Jdeveloper

b. Expand the content of the variable, additional fields option is displayed.

c. Expand the additional fields, and add the fields to the process.

3.4 Altering approval matrix

a. Here, supervisor will be having the managerial roles say (ALLROLES) and he/she can see all the tasks present in the assigned queue.

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b. Whereas the subordinates can have other roles like ORIG-ROLE where he/she can see only the tasks specific to their roles.

c. These roles are mapped in SMTB_USER_ROLE for the users and SMTB_ROLE_DETAIL for the stages/function Ids.

3.5 Altering Business Rules

Business rules can be altered in 2 ways:

iv. **Dynamically**: Rules can be altered dynamically in the SOA composer. Here, the rules can be altered dynamically during the run-time of the process

v. **Statically**: Rules can be altered in the BPEL process itself. This can be done by opening the Rule and making specific changes.

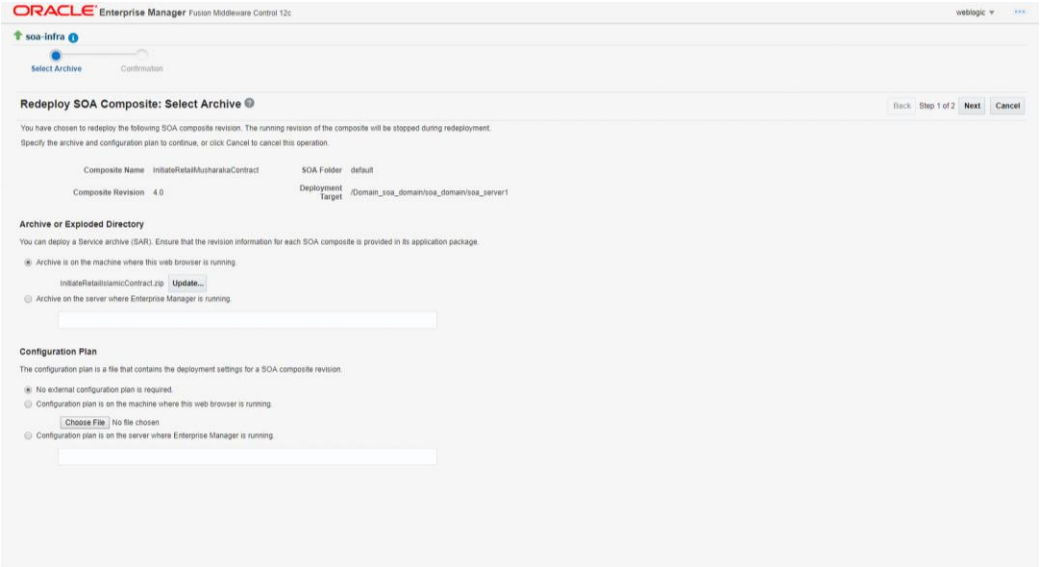
3.6 Altering Queue Configuration

It is mentioned in generic maintenance.

4. Trouble Shooting - FAQ

4.1 How to recover stale instances?

a. The ideal way is to take the <XXX>_ORASDPM,<XXX>_SOAINFRA schema backup before redeploy of process flow with same version.
b. Re-deploying would make the instances stale(instance data are in SOAINFRA and ORASDPM schemas).
c. Re-import the exported <XXX>_ORASDPM, <XXX>_SOAINFRA schema.
d. As part of SOA 11.1.1.6 there is an option to redeploy the process flows without making the instances stale.
e. Below is the screenshot of EM console of SOA 11.1.1.6(Refer bottom Running instances section of screenshot).



4.2 How to handle the growing instances in the Production Environment?

We can handle this in following 2 ways:

- Purge the instances, In EM level we have purging option, we can use this to purge the instances. Also there will be a new FCUBS screen to purge the instances. This new screen will come in the upcoming release.
- SOA Schemas DB archival.

4.3 What is the procedure to move the FCUBS application with BPEL from One WEBLOGIC server to another WEBLOGIC server without affecting the existing repository?

i. The practice is to take an export of <XXX>_ORASDPM, <XXX>_SOAINFRA schema as backup.
ii. <XXX>_MDS schema backup need not be taken.
iii. Create a new domain, point it to the existing SOA Schemas used by old domain as tried by you(SOAINFRA, MDS, ORASDPM)
iv. Re-deploy the process flows by changing the IP and port(Note: process flows are deployed to MDS schema)
v. Re-deploying would make the instances stale(instance data are in SOAINFRA and ORASDPM schemas)
vi. Re-import the exported <XXX>_ORASDPM, <XXX>_SOAINFRA schema.

4.4 When the instances will become stale?

The instances will become stale due to the new deployment process flow with same version.

4.5 How & where to change the Transaction timeout settings for BPEL?

SOA 11g: Timeout settings

After configuration of your SOA 11g environment, the (non-)clustered domain must be changed to increase the default time-out settings.

We can do this directly in the CONFIG files; make sure your admin server and managed servers are down.

At WEBLOGIC level:

Stop Admin and SOA servers

I. Set the global transaction JTA to 3600 seconds, be default it is 40 sec:

$DOMAIN_HOME/soa_domain/config/config.xml

...

<timeout-seconds>3600</timeout-seconds>

...

II. At SOA 11g - BPEL level: Set the sync wait time of synchronous processed to 120 seconds (45 by default).

$DOMAIN_HOME/soa_domain/config/soa-infra/configuration/bpel-config.xml

...

<syncMaxWaitTime>200</syncMaxWaitTime>

...

Start the admin and soa_servers

III. Updating SOA-INFRA ejbs

Log into Oracle WebLogic Administration Console.

Click Deployments.

Expand soa-infra -> EJBs.

You can check in the config tab for the timeout setting in the BPEL* EJBs:

BPELEngineBean set Timeout to 1800

BPELDeliveryBean set timeout to 1800

Make sure BPELEngineBean + BPELDeliveryBean is <= JTA timeout(1800+1800 <= 3600)

Click Save.

Note, that the first time it will ask you to create a Plan.xml file.

Make sure that this Plan.xml is stored in its own directory, for example:
$WLS_DOMAIN/soa_domain/plan/ejb

Update the soa-infra application

Restart Oracle WebLogic Server.

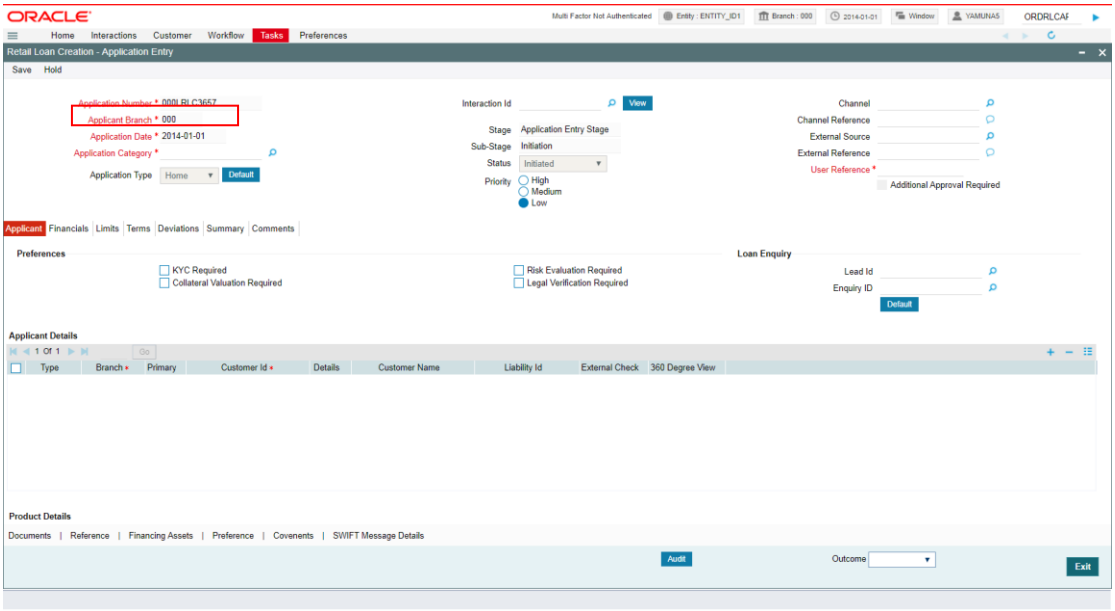
Things to be taken care while versioning a business process.

4.6 What is the frequency to take the SOA schemas Backup?

Ideally we can take the SOA Schemas backup as like FCUBS.

4.7 How & Where to look for missing instances?

The instances details are also stored in the FLEXCUBE schema OR module Tables. The missing instances details can be viewed under the menu Origination→Templates where you can provide respective Application number and search for the details as shown in the below screen.



4.8 BPEL is not working when deploying FLEXCUBE 11.2 with SAO 11.3 and above?

In SOA 11.3 release, the Identity service had been changed. FLEXCUBE CIS was not in sync with new identity service. The FLEXCUBE CIS has been updated in the FLEXCUBE 11.3 patch release. This problem will not come from FLEXCUBE 11.3. The conclusion is FLEXCUBE 11.2 should not be deployed on SOA 11.3 and above, should be deployed in the lesser versions as per the Release Certificate. Kindly refer the release certificate for the respective FLEXCUBE version.

4.9 SOA server is crashing when logging in to the application?

This problem is due to USER Name and ROLE ID maintenance in the FLEXCUBE. USER Name and ROLE ID should not be maintained as same in the FLEXCUBE. The validation is added in the “User Maintenance screen” To restrict this kind of maintenance.

4.10 Instances are Becoming fault while invoking the sub processes?

This problem is because of improper URL maintenance in the WSDL of sub processes & improper CONFIG plans maintenance. Make sure URL & CONFIG planes are correctly maintained in the sub processes.

4.11 Where to locate the logs and which are all the logs to locate?

The logs are available in the following location of the server

Oracle/Middleware/user_projects/domains/BPM_RND/servers/soa_server1/logs

Here BPM_RND is the Domain Name.

Following logs are required to diagnose the problem

soa_server1-diagnostic.log
soa_server1.log
soa_server1.out

4.12 Why PreDeploy needs and the steps to be followed?

The Idea of Predeploy utility is to avoid the SOA setup configuration errors

Steps to be followed::

i. Update the preDeploy.properties as shown below

preDeploy.properties

```
1  Domain_Home =D:/Software/BPM/Weblogic_SOA/user_projects/domains/BPM_devDomain1
2  Soa_Server =AdminServer
3  Soa_Home_Loc =D:/Software/BPM/Weblogic_SOA/Oracle_SOA1
4  Data_Source =fcjDevDS
5  Cis_Jar_Loc =D:/EAR
6  Middleware_Home =D:/Software/BPM/Weblogic_SOA
7  MDS_Schema_Password =SchemaPassword
```

a) Domain_Home :
   Enter the domain home Location in which the application going to be deployed.
b) Soa_Server:
   Enter the Soa server name created in the above mentioned domain(Eg:soa_server1)
c) Soa_Home_Loc:
   Enter the SOA middleware home.
d) Data_Source:
   Enter the Flexcube data source name.
e) Cis_Jar_Loc:
   Along with FCUBS Ear file, Installer creates BPELCIS.jar file enter the location of this file.
f) Middleware_Home:
   Enter the Middleware location
g) MDS_Schema_Password:
   MDS schema password for updating the workflow-identity-config.xml

ii. Library Files

The Below jar files required to run the pre deployment script

a) commons-io-1.4.jar
   Download Instructions:
   Commons IO 1.3 is available in the archives at
   http://archive.apache.org/dist/commons/io/binaries/ .The file to be downloaded is commons-io-1.4.zip.
   Post Download Instructions:
   Extract the Commons IO 1.4 distribution to a directory. Copy the following file commons-io-1.4.jar
   Into the directory {CURRENT_DIR}\lib\
b) xerces.jar
   Copy the following file
   xerces.jar
   Into the directory {CURRENT_DIR}\lib\

iii. Running the Pre deployment script:

- Run the Deploy.cmd/ Deploy.sh.This will call the PreDeploy.jar.
- This will create the directory backup_***.In this directory you will find the below files

a) config.xml – This is backup file

b) jps-config.xml –This is backup file

c) workflow-identity-config.xml –This is backup file

d) workflowConfigTransferLog.log - Log file for import and export of workflow-identity-config.xml file

Licensing related FAQ

4.13 I am using SOA/BPEL 10g, Can I use BAM 11g without upgrading my SOA 10g installation?

Yes. SOA/BPEL10g is compatible with Oracle BAM 11g. If you have not used Oracle BAM before then you should start with Oracle BAM 11g. If you use Oracle BAM 10g, you can upgrade your Oracle BAM deployment to 11g. It will continue to work with SOA/BPEL 10g. There is an upgrade utility packaged as part of the Oracle BAM 11g installation to provide a seamless upgrade of your Oracle BAM 10g metadata to Oracle BAM 11g. Please see the Oracle BAM 11g documentation for details.

4.14 Is Oracle BAM 11g available separately?

Oracle BAM 11g is sold as a component of the Oracle SOA Suite, Oracle BPM Suite or Oracle EDA Suite. There are many benefits to using Oracle BAM in conjunction with other Oracle software components, but Oracle BAM is not limited to only Oracle sources and it is common for Oracle BAM to integrate mutliple Oracle and non-Oracle event and data sources in a single implementation. Oracle BAM is delivered and can be downloaded only through the Oracle SOA Suite integrated installer. Customers choosing only to install Oracle BAM as a stand-alone implementation, are given the option to do so during the Oracle SOA Suite installation process. Users are automatically prompted to select the components which they wish to install and can select only Oracle BAM, if desired.

Process Flow Guide
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