

Oracle® Financial Services Interconnect Routing Hub User Guide



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ORACLE®

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Contents

1	Introduction	
2	Service Consumers	
3	Common Templates	
4	Environment Variables	
5	Service Providers	
6	Implementation	
7	Consumer Services	
8	Transformation	
9	Routing	
10	Chaining	
11	Template Extensibility	
11.1	XML merging attributes	1
11.1.1	Identity Matcher	2
11.1.2	Skip Matcher	2

11.1.3	Override Action	3
11.1.4	Complete Action	4
11.1.5	Replace Action	4
11.1.6	Preserve Action	5
11.1.7	Delete Action	6

12 Audit Purging / Archiving

13 Hookpoints

13.1	Available Interfaces	2
------	----------------------	---

14 Multipart Request

15 URL Encoded Request

16 Blackout Window

17 Configuration

18 Request Audit - Log

19 Monitoring Dashboard

20 Transformation Type

21 Configuration Scenarios

21.1	Custom Authentication	1
21.2	Preserve Routing Configuration	2
21.3	Removal of cached token	3
21.4	Certificate Upload	3

22 FAQ

23 Error Codes

24 Oracle Banking Routing Hub VM Arguments

25 Functional Activity Codes

Index

Preface

- [Purpose](#)
- [Audience](#)
- [Pre-requisites](#)
- [Documentation Accessibility](#)
- [Critical Patches](#)
- [Diversity and Inclusion](#)
- [Related Resources](#)
- [Conventions](#)
- [Screenshot Disclaimer](#)
- [Acronyms and Abbreviations](#)
- [Basic Actions](#)
- [Symbols and Icons](#)
- [Post-requisites](#)

Purpose

This guide enables the user to integrate Oracle Products with External Product Processor through Oracle Banking Routing Hub Platform.

Audience

This guide is intended for the customers and partners.

Pre-requisites

Specify **User ID** and **Password**, and login to **Home** screen.

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Critical Patches

Oracle advises customers to get all their security vulnerability information from the Oracle Critical Patch Update Advisory, which is available at [Critical Patches, Security Alerts](#)

[and Bulletins](#). All critical patches should be applied in a timely manner to make sure effective security, as strongly recommended by [Oracle Software Security Assurance](#).

Diversity and Inclusion

Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and partners, we are working to remove insensitive terms from our products and documentation. We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

Related Resources

For more information on any related features, refer to the following documents

- *Oracle Banking Common Core User Guide*
- *Oracle Banking Getting Started User Guide*

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Screenshot Disclaimer

Personal information used in the interface or documents is dummy and does not exist in the real world. It is only for reference purposes.

Acronyms and Abbreviations

The list of the acronyms and abbreviations used in this guide are as follows:

Table Acronyms and Abbreviations

Abbreviation	Description
API	Application Programming Interface
JSON	Java Script Object Notation
XML	Extensible Markup Language
WSDL	Web Services Description Language

Basic Actions

Table Basic Actions

Action	Description
Submit	Click to complete the transaction after you specify all the input parameters for a particular transaction.
Cancel	Click to cancel the transaction input midway without saving any data.
Clear	Click to clear the transaction input data. The system displays a pop-up screen with confirmation to clear data. You can click OK to confirm or click x icon to retain the data.
Query	On completion of input of necessary parameters, click this button to fetch and display the details.
OK	Click to confirm the details in the pop-up screen.
Save	Click to save the details specified in the screen.
Exit	Click to close the screen and go to Home screen.

Symbols and Icons

This guide has the following list of symbols and icons.

Table Symbols and Icons - Common

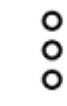
Symbol/Icon	Function
	Minimize
	Maximize
	Close
	Perform Search
	Open a list
	Add a new record
	Navigate to the first record
	Navigate to the last record
	Navigate to the previous record

Table (Cont.) Symbols and Icons - Common

Symbol/Icon	Function
	Navigate to the next record
	Refresh
	Click this icon to delete a row, which is already added.
	Calendar
	Alerts
	Import a file
	Edit a file

Post-requisites

After finishing all the requirements, please log out from the **Home** screen.

1

Introduction

FSGBU Banking Products integrate seamlessly and standardized with Oracle Banking Routing Hub through the use of configurations. The product infrastructure solution includes this component. With Oracle Banking Routing Hub, banking products can be integrated loosely.

Consumer Application: The product that requires integration with another product for retrieving information or posting transactions does not need to know the following details while coding.

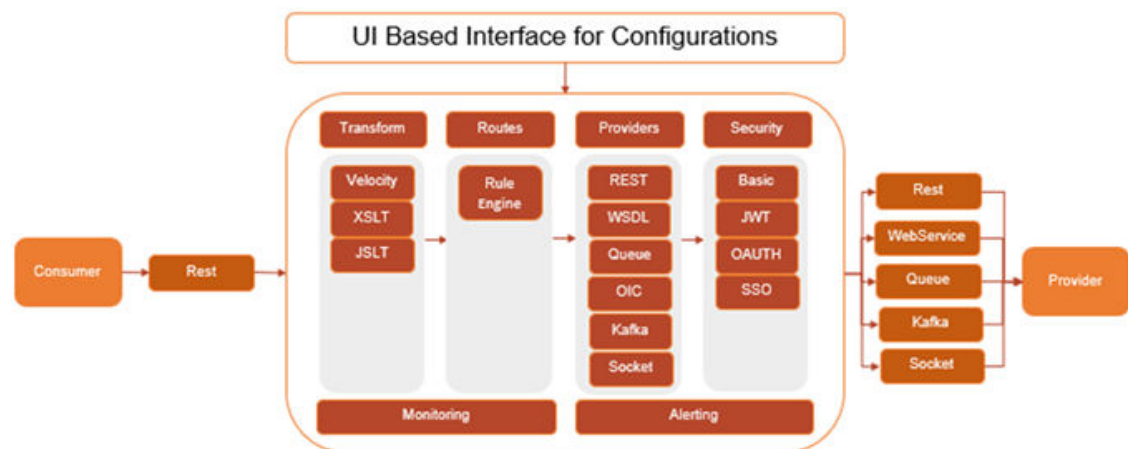
- **Servicing Providers or Product Processors:** The consumer application requests data from the products when required, or a consumer application initiates a transaction for the products to post.
- **Name of the Service:** Logical name of the service example: The service provider's product allows us to fetch details or initiate a transaction for Logical names like Funds Transfer and Letter of Credit.
- **Messaging structure of Service:** Structure of the message example: JSON, XML, multipart request.
- **Communication Protocol:** Web services, Rest API, Queue, OIC, Kafka, and Socket.

Through the 'Oracle Banking Routing Hub', consumers can achieve and modify integration, and they can integrate with different versions of a single product processor if necessary.

This guide shows the maintenance of two product as given below.

- Oracle Service Consumer as Service Consumer
- External Product Processor as Service Provider

Figure 1-1 UI Based Interface for Configurations



2

Service Consumers

This topic describes the systematic instructions to configure the service consumers.

Service Consumer is an Oracle banking solution that utilizes the Oracle Banking Routing Hub API for integration purposes. Analyze the Oracle Banking Routing Hub and assess the destination product processor. Convert the data into the necessary format for the destination product processor to handle a specific request type.

1. On **Home** screen, click **Core Maintenance**. Under **Interconnect**, click **Routing Hub**.
2. Under **Routing Hub**, click **Service Consumers**.

The **Service Consumers** screen is displayed.

Figure 2-1 Service Consumers



New Service Consumer

The users can create **Service Consumers** manually.

3. Click **New**.

The **New Service Consumer** screen is displayed.

Figure 2-2 New Service Consumer

New Service Consumer

Consumer Name

Required

Consumer Description

Request Audit Type

Service level configuration

Save

4. On **New Service Consumer** screen, specify the fields.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 2-1 New Service Consumer - Field Description

Field	Description
Consumer Name	Specify a unique service consumer name. Note: - Enter 1 to maximum of 255 characters. - No numeric value at beginning and no space allowed.
Consumer Description	Specify the description of the consumer name. Note: - Enter 1 to maximum of 100 characters. - No space allowed at beginning or ending of the characters.

Table 2-1 (Cont.) New Service Consumer - Field Description

Field	Description
Request Audit Type	Select the Audit type from the drop-down list. The available options are: • All Requests - All requests are logged in the OBRH and can be viewed later for debugging. • Service level configuration - Option has been provided at consumer services for enabling audit of requests for specific Consumer Services. Audit type should be configured as “Service level configuration” and audit option at “Consumer Services” should be selected for Consumer Services which need to be audited. Monitoring dashboard does not provide the data for requests which are not being audited. • None - Disables the audit completely. Audit logs cannot be reviewed later and monitoring dashboard does not provide the data

5. Click **Save** to save the details.

Import Service Consumer

The user can create a service consumer by importing the JSON file and manually selecting the service providers or select all providers that needs to be imported. The user can also import zip file in order to import all the configuration JSON files together.

6. Click **Import**.

The **Import Service Consumer** screen is displayed.

Figure 2-3 Import Service Consumer - Basic Details

The screenshot shows the 'Import Service Consumer' window with the 'Basic Details (1/2)' tab selected. It features a 'Drag and Drop' section with the instruction 'Select a file or drop one here.' Below this are two text input fields labeled 'File' and 'Name'. Further down are two radio button groups: 'Overwrite extended templates' with 'Yes' and 'No' options (where 'No' is selected), and 'Overwrite environment variables' with 'Yes' and 'No' options (where 'No' is selected). A 'Next Step' button is located at the bottom right of the form.

7. Specify the fields on **Import Service Consumer - Basic Details** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

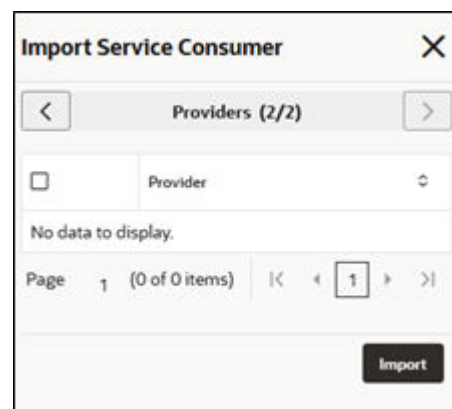
Table 2-2 Import Service Consumer - Basic Details - Field Description

Field	Description
File	Click Select to select the file. Note: Only one file can be selected, and it must be in JSON or ZIP format.
Name	Specify the name of the service consumer. Note: - Name cannot be blank and required only for JSON file. - Enter 1 to maximum of 255 characters. - No numeric value at beginning and no space allowed.
Overwrite extended templates	Select the respective radio button to overwrite the extended templates. The available options are: Yes - This option overwrites the extended templates. No - This option retains the existing extended templates.
Overwrite environment variables	Select the respective radio button to indicate whether environment variables (JSON file) should overwrite existing environment variables or not. The available options are: Yes - This option overwrites the environment variables. No - This option retains the existing environment variables.
Providers	Displays the list of service providers names that are present in JSON file only.

- Click **Next** on the **Basic Details** screen.

The **Import Service Consumer - Providers** screen is displayed.

Figure 2-4 Import Service Consumer - Providers



- Specify the fields on **Import Service Consumer - Providers** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 2-3 Import Service Consumer - Providers - Field Description

Field	Description
Providers	Displays the list of service providers names that are present in JSON file only.

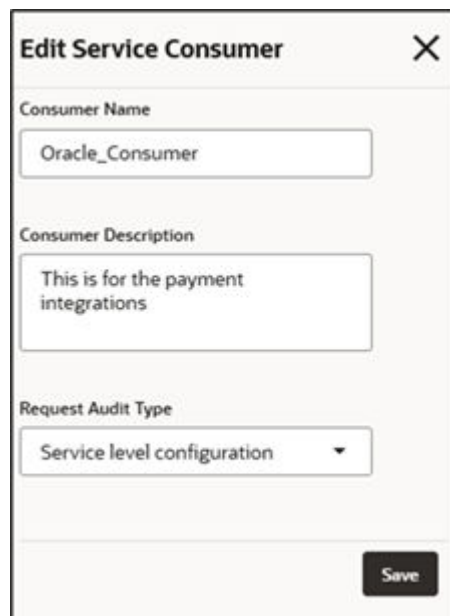
10. Click **Import** to import the selected service consumer file.

View / Edit Service Consumer

The user can view or modify consumer details.

11. On the **Service Consumer** tile, click **View More** button and then click **Edit Service Provider**.

The **Edit Service Consumer** screen is displayed.

Figure 2-5 Edit Service ConsumerThe screenshot shows a modal dialog box titled "Edit Service Consumer" with a close button (X) in the top right corner. Inside the dialog, there are three input fields: "Consumer Name" with the text "Oracle_Consumer", "Consumer Description" with the text "This is for the payment integrations", and "Request Audit Type" which is a dropdown menu currently showing "Service level configuration". At the bottom right of the dialog is a "Save" button.

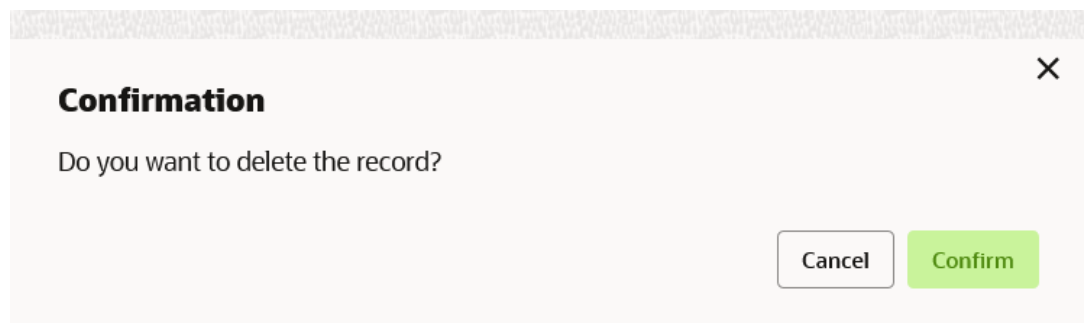
12. Click **Save** to save the modified consumer details.

Delete Service Consumer

The user can delete the Service Consumer.

13. On the **Service Consumer** tile, click **Delete** icon.

The **Confirmation** screen is displayed.

Figure 2-6 Confirmation - DeleteThe screenshot shows a modal dialog box titled "Confirmation" with a close button (X) in the top right corner. The main text inside the dialog asks "Do you want to delete the record?". At the bottom right, there are two buttons: "Cancel" and "Confirm". The "Confirm" button is highlighted in green.

14. Click **Confirm** to delete the service consumer.

Export Service Consumer

User can export the consumer configuration as JSON file. The option for Export is provided to move the configurations from one environment to another.

15. On **Service Consumer** tile, click **Operation Menu** (3 dot icon) and then click **Export**.

The **Export Service Consumer** screen is displayed.

Figure 2-7 Export Service Consumer

☐	Provider
☐	Oracle_Provider 14.8.0.0.0
☐	External_Provider 1.0

Page 1 of 1 (1-2 of 2 items) |< < 1 > >|

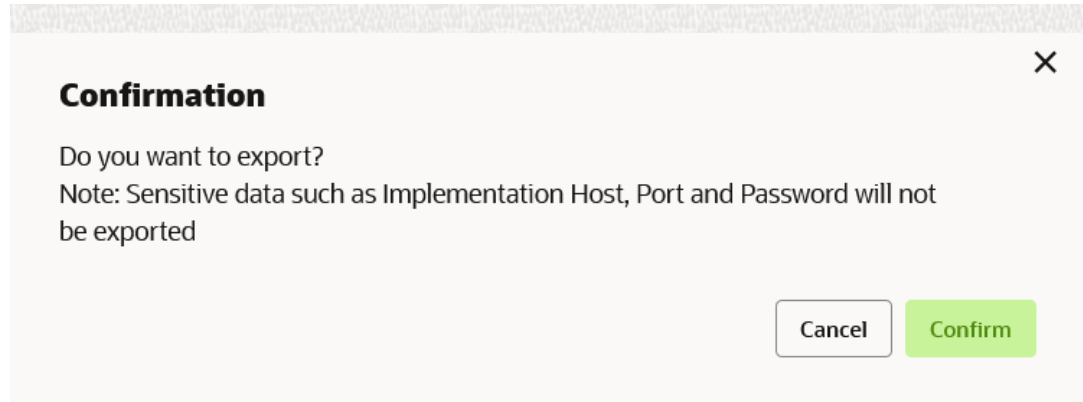
Export

Note

- The user has an option to select the service providers from the list which needs to be exported or can click on select all for all service providers.
- The JSON Export feature exports below data:
 - Selected service consumer
 - All consumer services
 - Selected service providers with services
 - All implementations of selected service providers with services (without Host, Port and Authentication Password)
 - All transformations
 - All routes

16. Select the required service providers and click **Export**.

The **Confirmation** screen is displayed.

Figure 2-8 Confirmation - Export

17. Click **Confirm** to export the service consumer in JSON file.

Configuration Export

18. On **Service Consumer** tile, click **Operation Menu** (3 dot icon), and click **Configuration**.
The **Configuration** screen is displayed.

Note

Refer to [Configuration](#) topic for the screen and field description.

Request Audit

19. On **Service Consumer** tile, click **Operation Menu** (3 dot icon), and click **Request Audit**.
The **Request Audit** screen is displayed.

Note

Refer to [Request Audit](#) topic for the screen and field description.

3

Common Templates

This topic describes the common templates that can be reused across all integration configurations within that specific consumer.

1. On **Home** screen, click **Core Maintenance**. Under **Core Maintenance**, click **Interconnect**.
2. Under **Interconnect**, click **Routing Hub**, click **Service Consumers**. From **Service Consumers** screen, click the required service consumer.

The **Common Templates** screen is displayed.

Figure 3-1 Common Templates



New Template

Users can create multiple templates.

3. Click **New Template**.

The **New Template** screen is displayed.

Figure 3-2 New Template

The 'New template' form is displayed with a close button (X) in the top right. It contains four fields: 'Name' (required), 'Description' (required), 'Template Type' (a dropdown menu currently showing 'Velocity'), and 'Template' (required). At the bottom, there are 'Save' and 'Cancel' buttons.

Table 3-1 New Template - Field Description

Field	Description
Name	Specify the name of the template. Note: - Enter 1 to maximum of 255 characters. - No numeric value at beginning and no space allowed
Description	Specify the description. Note: - Enter 1 to maximum of 1000 characters. - No space allowed at beginning or ending of the characters.
Template Type	Select the template type for common template. Note: Currently, velocity is only supported.
Template	Specify the velocity template. Note: Only macro is supported.

- Click **Save** to save the details.

Import Template

The user can import common templates.

- Click **Import Template**.

The **Import Template** screen is displayed.

Figure 3-3 Import Template

- Specify the fields on **Import Template** screen.

Table 3-2 Import Template - Field Description

Field	Description
File	Select the file using Select. Note: This allows you to select only one file, which must be in either JSON or ZIP format.

- Click **Import** to import the selected common template file.

View / Edit Template

- Click **Edit** icon.

The **Edit Template** screen is displayed.

Figure 3-4 Edit Template

Edit Template [X]

Name
Date_Conversion

Description
Template for date conversion

Template Type
Velocity

Template
#macro(dateFormat)
#end

Save Cancel

9. Click **Save** to save the modified template details.

Delete Template

The user can delete the template.

10. Click **Delete** icon.

Export Template

User can export the template configuration as JSON file. The option for Export is provided to move the configurations from one environment to another.

11. On **Common Template** screen, click **Export Template**.

The **Confirmation - Export** screen is displayed.

Figure 3-5 Confirmation - Export

Confirmation [X]

Do you want to export?

Cancel Confirm

12. Click **Confirm** to export the environment variables in JSON file.

4

Environment Variables

This topic describes the systematic instructions to configure the environment variables consumers.

The user needs to define a set of variables that will be accessible across the particular configuration of the consumer. The syntax for accessing environment variables is below: \$env.Environment_Group_Name.Environment_Variable_Name

For example, \$env.COMMON.BRANCH_CODE

1. On **Service Consumers** screen, click the required service consumer.
The **Environment Variables** screen is displayed.

Figure 4-1 Environment Variables

The screenshot shows the 'Service Consumers' interface with the 'Environment Variables' tab selected. At the top, there's a 'Back to List of Service Consumers' link and an 'Edit Service Consumer' button. Below the tab navigation, there's a search bar and buttons for 'New Group', 'Export Group', and 'Import Group'. The main area displays '0 Results' and 'No items to display.' The pagination shows 'Page 1 (0 of 0 items)'.

New Group

Users can create multiple groups and variables.

2. Click **New Group**.
The **New Group** screen is displayed.

Figure 4-2 New Group

The screenshot shows the 'New Group' modal. It has a 'Group Name' field with a 'Required' label. Below it, there's a table with columns: 'Variable Name', 'Variable Value', 'Sensitive', and 'Override'. The table is currently empty, showing 'No data to display.' The pagination at the bottom indicates 'Page 1 (0 of 0 items)'. A 'Save' button is located at the bottom right.

3. Specify the fields on the **New Group** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 4-1 New Group - Field Description

Field	Description
Group Name	Specify the name of the environment group. Note: • Enter 1 to maximum of 255 characters. • No numeric value at beginning and no space allowed.
Variable Name	Specify the name of the environment variable. Note: • Enter 1 to maximum of 255 characters. • No space allowed at beginning or ending of the characters.
Variable Value	Specify the value of the environment variable. The value can either be hardcoded or Velocity mapping.
Sensitive	With this flag, user can mark the variables which are sensitive in nature. So, The values will not be shown as plain text in routing hub configuration.
Override	This flag determines whether to retain existing values or override them during import. Default Value is false. Note: Overwrite flag of Import screen takes precedence over the Override flag.

4. Click **Save** to save the details.

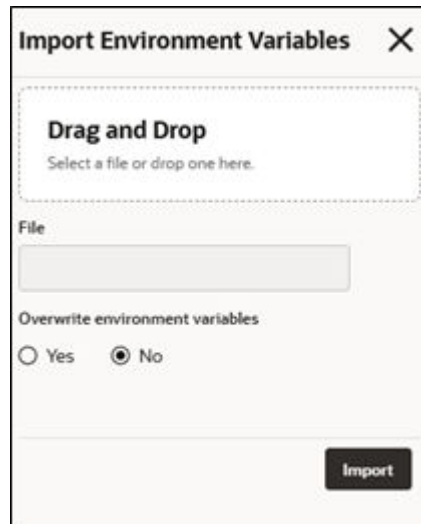
Import Group

The user can import environment variables.

5. Click **Import Environment Variables**.

The **Import Environment Variables** screen displays.

Figure 4-3 Import Environment Variables



6. Specify the fields on **Import Environment Variables** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 4-2 Import Environment Variables - Field Description

Field	Description
File	Select the file using Select . Note: Allows only to select one file and accepts JSON and ZIP file.
Overwrite environment variables	Select the respective radio button to specify if the environment variables (from the JSON file) should replace the current environment variables. The options available are: • Yes - This option overwrites the environment variables. • No - This option retains the existing environment variables.

7. Click **Import** to import the selected environment variable file.

View / Edit Group

The user can view or modify environment variables.

8. On the **Group** tile, click **Edit Group**.

The **Edit Group** screen is displayed.

Figure 4-4 Edit Group

☐	Variable Name	Variable Value	Sensitive	Override	
☐	BRANCH_CODE	000	☐	☐	

9. Click **Save** to save the modified environment variable details.

Delete Group

The user can delete the environment group.

10. On the **Group** tile, click **Delete** icon.

Export Group

User can export the environment variable configuration as JSON file. The option for Export is provided to move the configurations from one environment to another.

11. On **Environment Variables** screen, click **Export Group**.

The **Confirmation - Export** screen is displayed.

Figure 4-5 Confirmation - Export

Confirmation

Do you want to export?

12. Click **Confirm** to export the environment variables in JSON file.

5

Service Providers

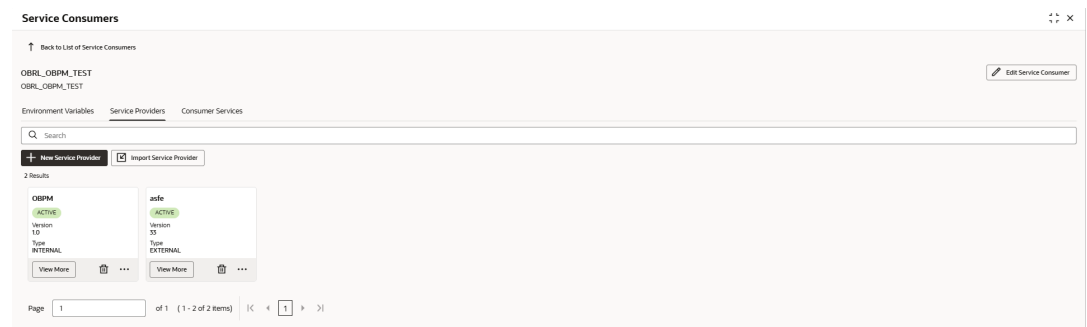
This topic describes the systematic instructions to configure the service providers.

Service Providers are systems designed to handle requests sent by the Oracle Banking Routing Hub for service consumers. They include information about destination integration.

1. On **Service Consumers** screen, click the required service consumer.

The **Service Providers** screen is displayed.

Figure 5-1 Service Providers



New Service Provider

The user can create Service Provider manually.

2. Click **New**.

The **New Service Provider** screen is displayed.

Figure 5-2 New Service Provider - Service Provider Details

The screenshot shows the 'New Service Provider' form with the 'Service Provider Details (1/5)' section. It contains the following fields:

- Provider Name**: A text input field with a 'Required' label below it.
- Provider Version**: A text input field with a 'Required' label below it.
- Provider Type**: A dropdown menu with a 'Required' label below it.
- Active**: A toggle switch currently set to 'Off'.
- Validation Provider**: Radio buttons for 'Yes' and 'No', with 'No' selected.

 At the bottom right, there is a 'Next Step' button.

3. Specify the fields on **New Service Provider** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 5-1 New Service Provider - Service Provider Details - Field Description

Field	Description
Provider Name	Specify the name of the service provider. Note: • Enter 1 to maximum of 255 characters. • No numeric value at beginning and no space allowed.
Provider Version	Specify the provider version. Note: • Enter 1 to maximum of 255 characters. • Only numeric or decimal values are allowed.
Provider Type	Select the type of service provider from drop-down list. The available options are: • INTERNAL: Used for Oracle products. • EXTERNAL: Used for non-Oracle products.
Active	Predefined values are Active / Inactive . If provider is marked as inactive, then all related routes will be stopped.
Validation Provider	Predefined values are Yes / No . This property is used to mark the service provider to also act as a validator for validating the requests before sending it for further processing.

Headers

A product processor might require some standard headers to be passed along with the request. The user can specify the headers which are required by service endpoints for its all implementations but not present in swagger file.

Note

Content-type header will be removed from Provider request if header value is NONE.

4. Click **Next Step**.

The **New Service Provider - Headers**

Figure 5-3 New Service Provider - Headers

The screenshot shows a web interface titled "New Service Provider" with a sub-header "Headers (2/5)". It features a table with two columns: "Name" and "Value". The table is currently empty, with a message "No data to display." below it. At the bottom, there is a pagination bar indicating "Page 1 (0 of 0 items)" and a "Next Step" button.

- Specify the fields on **New Service Provider - Headers** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 5-2 New Service Provider - Headers - Field Description

Field	Description
Name	Specify the name of the header. Note: - Enter 1 to maximum of 255 characters. - No numeric value at beginning and no space allowed.
Value	Specify the value of the header. Value can be hardcoded or velocity template.

Services

- WSDL:**
The Web Services Description Language (WSDL) is an XML-based interface description language that is used for describing the functionality offered by a web service.
Both SSL and non-SSL WSDL URL are supported.
Context path can be modified for existing WSDL operations.

Note

If there is a change in wsdl file, then same wsdl file need to be imported again to update the provided service information in Routing Hub.

- SWAGGER:**
Swagger is an Interface Description Language for describing RESTful APIs expressed using JSON.

Currently, Swagger 2.0 & OpenAPI 3.0 both are supported.

Existing REST endpoints can also be modified or deleted.

Note

If there is a change in swagger file, then same swagger file need to be imported again in order to update the provided service information in Routing Hub.

- **Others:**

Others option is selected for adding REST API details manually when provider does not have swagger file.

Note

If there is a change in existing endpoint, then the same endpoint details can be modified using edit option.

6. Click **Next Step**.

The **New Service Provider - Services**

Figure 5-4 New Service Provider - Services

New Service Provider

Services (3/5)

Type
WSDL

URL

Context Path

WSDL Access Headers

Import

Search Service

No items to display.

Page 1 (0 of 0 items) |< < 1 > >|

Next Step

7. On **New Service Provider - Services** screen, specify the fields.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 5-3 New Service Provider - Services - Field Description

Field	Description
Type	Select the service type from drop-down list. The available options are: • WSDL • SWAGGER • OTHERS
URL	Specify the service URL of the file location. Note: This field appears only if the Type is selected as WSDL and SWAGGER .
Context Path	Context path of below formatted URL http://host:port/context-path/endpoint
WSDL Access Headers	Specify the headers required for accessing / reading WSDLs.
Import	Click Import to extract the service information from URL. Note: This field appears only if the Type is selected as WSDL and SWAGGER .

- a. On **New Service Provider** screen, for adding REST endpoint details manually, select the **Type** as **Others** to define the endpoint details.

The **Endpoint Details** screen is displayed.

Figure 5-5 Endpoint Details

The screenshot displays the 'New Service Provider' interface. At the top, there's a 'Services (3/5)' section with a back arrow and a forward arrow. Below this, the 'Type' dropdown is set to 'Others'. The main section is titled 'Endpoint Details (1/3)' and contains four input fields: 'Name' with the value 'getAccountDetails', 'HTTP Method' with a dropdown set to 'GET', 'Endpoint URL' with the value '/service/v1/account/{id}', and 'Context Path' with the value '/gateway'. At the bottom right, there are two buttons: 'Cancel' and 'Next Step'.

- b. Specify the fields on **Endpoint Details** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 5-4 Endpoint Details - Field Description

Field	Description
Name	Specify the name of the operation. Note: • This field appears only if the Type is selected as Others. • Enter 1 to maximum of 255 characters. • No numeric value at beginning and no space allowed.
HTTP Method	Select the HTTP method from the drop-down list. The available options are: • GET • POST • PUT • PATCH • DELETE Note: This field appears only if the Type is selected as Others .
Endpoint URL	Specify the endpoint URL for the operation. Note: • This field appears only if the Type is selected as Others. • Enter 1 to maximum of 2047 characters. • No numeric value at beginning and no space allowed.
Content Path	Context path of below formatted URL http://host:port/context-path/endpoint. Note: • Enter 0 to maximum of 255 characters. • No numeric value at beginning and no space allowed.

- c. Click **Next Step**.

The **Endpoint Headers** screen is displayed.

Figure 5-6 Endpoint Headers

New Service Provider

<

Services (3/5)

>

Type

Others

<

Endpoint Headers (2/3)

>

+
-

Name

Value

Content-Type

application/json

Page 1 of 1 (1 of 1 items) < 1 >

Cancel

Next Step

- d. Specify the fields on **Endpoint Headers** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 5-5 Endpoint Headers - Field Description

Field	Description
Name	Specify the name of the header. Note: - This field appears only if the Type is selected as Others. - Enter 1 to maximum of 2047 characters. - No numeric value at beginning and no space allowed.
Value	Specify the value of the header. Value can be hardcoded or velocity template. Note: This field appears only if the Type is selected as Others .

- e. Click **Next Step**.
The **Endpoint Query Parameters** screen is displayed.

Figure 5-7 Endpoint Query Parameters

The screenshot shows the 'New Service Provider' window. At the top, there's a 'Services (3/5)' tab. Below it, the 'Type' dropdown is set to 'Others'. The 'Endpoint Query Parameters (3/3)' section contains a table with columns 'Name' and 'Value'. The table is currently empty, with a message 'No data to display.' and a pagination bar indicating 'Page 1 (0 of 0 items)'. At the bottom right, there are 'Cancel' and 'Add' buttons.

- f. Specify the fields on **Endpoint Query Parameters** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 5-6 Endpoint Query Parameters - Field Description

Field	Description
Name	Specify the name of the header. Note: - This field appears only if the Type is selected as Others. - Enter 1 to maximum of 2047 characters. - No numeric value at beginning and no space allowed.
Value	Specify the value of the header. Value can be hardcoded or velocity template. Note: This field appears only if the Type is selected as Others .

- g. Click **Add** for adding it in service list.

Parameter Group

Parameter mapping is used to establish the relationship between parameters of 2 different systems i.e., consumer and provider.

Note

Environment variables can also be used to specify the provider parameter value.

So, you can use consumer's parameter to find the corresponding parameter of provider and vice versa.

8. Click **Next**.
The **New Service Provider - Parameter Group** screen is displayed.

Figure 5-8 New Service Provider - Parameter Group

The screenshot shows the 'New Service Provider' window with the 'Parameter Group (4/5)' tab selected. It includes a '+ New Group' button, a dropdown for 'Group_1', and a text field for 'Group Name' containing 'Group_1'. Below this is a table with columns 'Consumer variable' and 'Provider variable', which is currently empty with the message 'No data to display.' A pagination bar at the bottom indicates 'Page 1 (0 of 0 items)' and a 'Next Step' button is in the bottom right corner.

For fetching provider parameter using consumer parameter,
Syntax: \$custom.getParameterValueByConsumerKey (groupName, consumerParameter)

For fetching consumer parameter using provider parameter,
Syntax: \$custom.getParameterValueByProviderKey (groupName, providerParameter)

Certificate Upload

9. Click **Next Step**.
The **Certificate Upload** screen is displayed.

Figure 5-9 Certificate Upload

The screenshot shows the 'New Service Provider' window with the 'Certificate Upload (5/5)' tab selected. It includes a 'Use Custom Certificates' toggle switch and an 'SSL Protocol' dropdown menu set to 'TLS'. Below this is a table with columns 'Type', 'Certificate', 'Password', and 'Alias', which is currently empty with the message 'No data to display.' A pagination bar at the bottom indicates 'Page 1 (0 of 0 items)' and a 'Save' button is in the bottom right corner.

10. Specify the fields on **Certificate Upload** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 5-7 Certificate Upload - Field Description

Field	Description
Use Custom Certificates	This flag enforces Routing Hub to use uploaded certificates rather than relying on default ones, and is toggled off by default.
SSL Protocol	This setting enforces the Routing Hub to use an SSL/TLS protocol supported by the provider. Default value: SSL.
Certificates	This section is used to upload Client and Server certificates required for communication with the provider. Client Certificate is used for client authentication. Supported formats are PFX and P12 (requires a passphrase; alias is optional). Server Certificate is used to verify the identity of the server. Supported formats are PEM and CRT.

Import Service Provider

11. Click **Import**.

The **Import Service Provider** screen is displayed.

Figure 5-10 Import Service Provider

For more information on fields, refer to the field description table below.

Table 5-8 Import Service Provider - Field Description

Field	Description
File	Select the file using Select button. Note: Allows only to select one file and accepts JSON and ZIP file.

Table 5-8 (Cont.) Import Service Provider - Field Description

Field	Description
Overwrite extended templates	Select the respective radio button to overwrite extended templates. The options are: Yes - This option overwrites the extended templates in configuration. No - This option retains the existing extended templates in configuration. Note: This field appears only if the ZIP File is selected.

12. Click **Import** to import the selected file.

Note

The following data needs to be changed after importing provider configuration file:

- Implementation Host and Port
- Implementation Authentication Password

View / Edit Service Provider

13. On **Service Provider** tile, click **View More**, and click **Edit Service Provider**.
The **Edit Service Provider - Service Provider Details** screen is displayed.

Figure 5-11 Edit Service Provider - Service Provider Details

The screenshot shows a web interface titled "Edit Service Provider" with a close button (X) in the top right. Below the title is a breadcrumb "Service Provider Details (1/5)" with left and right navigation arrows. The form contains the following fields:

- Provider Name:** A text input field containing "Oracle_Provider".
- Provider Version:** A text input field containing "14.8.0.0.0".
- Provider Type:** A dropdown menu showing "Internal".
- Active:** A toggle switch that is currently turned on.
- Validation Provider:** Two radio buttons, "Yes" and "No", with "No" selected.

A "Next Step" button is located at the bottom right of the form.

14. Click **Next Step**.
The **Edit Service Provider - Headers** screen is displayed.

Figure 5-12 Edit Service Provider - Headers

Edit Service Provider

Headers (2/5)

No data to display.

Page 1 (0 of 0 items)

Next Step

15. Click **Next Step**.

The **Edit Service Provider - Services** screen is displayed.

Figure 5-13 Edit Service Provider - Services

Edit Service Provider

Services (3/5)

Type: WSDL

URL: Context Path:

WSDL Access Headers:

Import

Search Service

REST GET /service/v1/account/{id} (getAccountDetails)

Page 1 of 1 (1 of 1 items)

Next Step

16. Click **Next Step**.

The **Edit Service Provider - Parameter Group** screen is displayed.

Figure 5-14 Edit Service Provider - Parameter Group

The screenshot shows a dialog box titled "Edit Service Provider" with a close button (X) in the top right corner. Below the title bar is a tab bar with a left arrow, the text "Parameter Group (4/5)", and a right arrow. Under the tab bar is a button labeled "+ New Group". At the bottom right of the dialog is a button labeled "Next Step".

17. Click **Next Step**.

The **Edit Service Provider - Certificate Upload** screen is displayed.

Figure 5-15 Edit Service Provider – Certificate Upload

The screenshot shows a dialog box titled "Edit Service Provider" with a close button (X) in the top right corner. Below the title bar is a tab bar with a left arrow, the text "Certificate Upload (5/5)", and a right arrow. Under the tab bar, there are two sections: "Use Custom Certificates" with a toggle switch, and "SSL Protocol" with a dropdown menu showing "TLS". Below these is a table with columns: "Type", "Certificate", "Password", and "Alias". The table is empty, and below it is the text "No data to display." At the bottom left, there is a pagination bar showing "Page 1 (0 of 0 items)" and navigation arrows. At the bottom right is a button labeled "Save".

18. Click **Save** to save the modified provider details.

Delete Service Provider

The user can delete the provider.

19. On **Service Provider** tile, click **Delete** icon.

The **Confirmation** screen is displayed.

Figure 5-16 Confirmation - Delete

The screenshot shows a dialog box titled "Confirmation" with a close button (X) in the top right corner. Below the title bar is the text "Do you want to delete the record?". At the bottom right are two buttons: "Cancel" and "Confirm".

20. Click **Confirm** to delete the selected Service Provider.

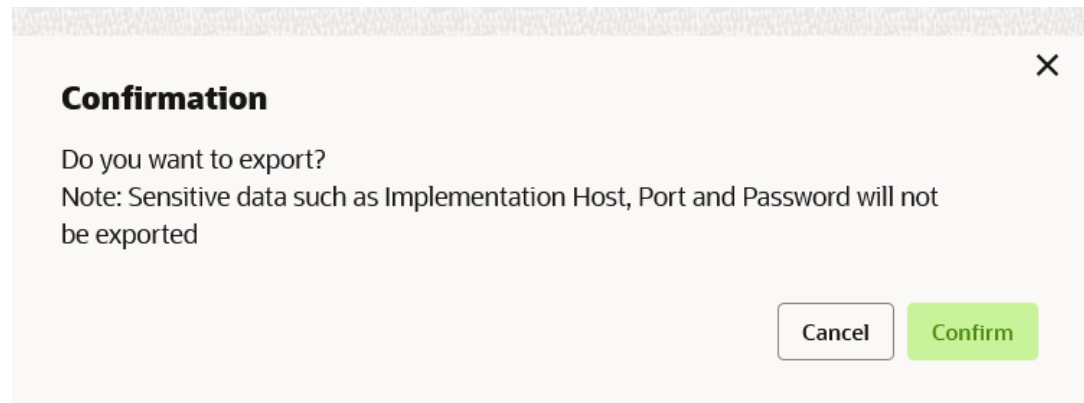
Export Service Provider

The user can export the provider configuration as JSON file.

21. On **Service Provider** tile, click **Operation menu** (3 dots button), and click **Export**.

The **Confirmation** screen is displayed.

Figure 5-17 Confirmation - Export



① Note

The below data cannot be exported:

- Implementation Host
- Implementation Port
- Implementation Authentication Password

The above data needs to be configured manually after importing the configuration file. Same has been mentioned in Import section.

22. Click **Confirm** to export the selected Service Provider.

Configuration

End-user can configure the properties for failing the routing hub requests.

23. On **Service Provider** tile, click **Operation menu** (3 dots button), and click **Configuration**.

The **Configuration** screen is displayed.

Figure 5-18 Configuration

Configuration [X]

▼ **Timeout**

Provider level timeout ? ☐

Connection Timeout

Read Timeout

> **Exception**

> **Connection Pool**

Clear Reset Save

For more information on fields, refer to the field description table below

Table 5-9 Configuration Service Provider - Field Description

Field	Description
Provider level timeout	This property is used to override the global timeout values. Note: Default value is false.
Connection Timeout	This property is used to set the timeout in making the initial connection i.e. connection handshake. Note: Value should be in milliseconds.
Read Timeout	This property is used to set the timeout on waiting to read data. Note: Value should be in milliseconds.
Handle exception	This property is used to fail the routing hub request for failed provider requests. Note: Default value is false.
Status Codes	This property is used to fail routing hub request for specific status codes of failed provider requests. If not specified, then routing hub request will fail for all 4xx and 5xx status codes of failed provider requests.
Inactivity Period	This property is used to specify connection inactivity time for re-validating connections in connection pool. Value should be in milliseconds.

Table 5-9 (Cont.) Configuration Service Provider - Field Description

Field	Description
Keep-Alive duration	This property is used to keep connection alive for that specific time in connection pool before closing it. Value should be in milliseconds.

Request Audit

24. On **Service Provider** tile, click **Operation menu** (3 dots button), and click **Request Audit**.

The **Request Audit** screen is displayed.

Note

Refer to [Request Audit](#) topic for the screen and field description.

Clear Cache

The user can clear the SOAP client cache for the service providers.

25. On **Service Provider** tile, click **Operation menu** (3 dots button), and click **Clear Cache**.

6

Implementation

This topic provides the systematic instructions to configure the implementation.

The implementation includes an instance of the Eureka client, along with the host, port, authentication, and specific service details. The Oracle Banking Routing Hub is compatible with web services and REST APIs.

Note

Default implementation is created whenever a new service provider is added.

1. On **Service Provider** screen, click on the required service provider tile.
The **Implementation** screen is displayed.

Figure 6-1 Implementation



Implementation Details

The user can create the implementation manually.

2. Click **New**.
The **New Implementation - Implementation Details** screen is displayed.

Figure 6-2 New Implementation - Implementation Details

New Implementation

Implementation Details (1/4)

Implementation Name Required

Implementation Description

Implementation Type

Default ☐

Eureka Instance ☒

Single Tenant ☐

Scheme Required

Service Name Required

Host

Port

Use WSDL details (scheme, host and port) for SOAP service invocation ☐

Next Step

- On **New Implementation - Implementation Details** screen, specify the fields.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 6-1 New Implementation - Implementation Details - Field Description

Field	Description
Implementation Name	Specify the name of the implementation. Note: - Enter 1 to maximum of 255 characters. - No numeric value at beginning and no space allowed.
Implementation Description	Specify the description of the implementation. Note: - Enter 0 to 1000 characters. - No space allowed at beginning or ending of the characters.

Table 6-1 (Cont.) New Implementation - Implementation Details - Field Description

Field	Description
Implementation Type	Select the type of implementation from drop-down list. The available options are: • DEFAULT • QUEUE • OIC • SOCKET • KAFKA DEFAULT type is for REST and SOAP API calls. Note: The type as OIC is only applicable for cloud services.
Default	Toggle the button if user wants to default. Each type can have one default implementation.
Single Tenant	Select the toggle to append tenant details with eureka VIP for services which are registered on eureka as single tenant services. Note: This field is available only for internal providers and applicable only for Cloud.
Eureka Instance	Eureka Instance is available only for internal providers and default type. By default, Eureka Instance will be toggled ON for internal providers and OFF for external providers. Note: If the Eureka Instance is toggled ON, the Api-gateway will be removed (if present) from the request URL sent to the provider. If the Eureka Instance is toggled OFF and the authentication type is selected as JWT Token or OAUTH Token, the provider request URL will include apigateway if it's missing. If the Eureka Instance is activated, it propagates the userId, branchCode, piienabled, languageCode, and locale headers from the routing hub request to the service provider request.
Scheme	Select the scheme from drop-down list The available options are: • http • https Scheme option is available only for default type.
Service Name	If Eureka Instance is toggled ON and type is default, then only service name is required. Note: Enter 1 to 100 characters.
Host	Specify the host. Note: • Host cannot be blank. • Enter 1 to 255 characters. • Space is not allowed. If Eureka Instance is toggled OFF and type is default, then only host and port is required. Note: Environment variables can also be used to specify host.
Port	Specify the port number. Note: • Enter 0 to 255 characters. • Enter a port number or an environment variable mapping. If Eureka Instance is toggled OFF and type is default, then only host and port is required. Note: Environment variables can also be used to specify host.

Table 6-1 (Cont.) New Implementation - Implementation Details - Field Description

Field	Description
URL Prefix To Strip	This property is used to remove the specified part from the beginning of a URL before routing the request to provider. Note: - Enter 0 to 255 characters. - No numeric value allowed at beginning. No space allowed.
Use WSDL details (scheme, host and port) for SOAP service	This property is for using WSDL's scheme, host and port details for SOAP service invocation. Instead of using SOAP address's scheme, host and port details appearing in WSDL.
Use Proxy	This property is for using the configured proxy in cloud environment for the external calls outside the environment.

- a. On **New Implementation** screen, for adding queue details manually, select the **Implementation Type** as **Queue** to define the queue details.

The **Queue Details** screen is displayed.

Figure 6-3 Queue Details

- b. Specify the fields on **Queue Details** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 6-2 Queue Details - Field Description

Field	Description
Queue Broker	Select the queue broker from drop-down list. The available options are: WEBLOGIC_JMS

Table 6-2 (Cont.) Queue Details - Field Description

Field	Description
Request Reply Pattern	Select the queue broker from drop-down list. The available options are: JMS_MESSAGEID JMS_CORRELATIONID JMS_MESSAGEID is default request-reply pattern.
Request Connection Factory	Specify the connection factory. Connection Factory is JNDI based connection factory name which is used to create connection for JMS client. Note: - Enter 1 to 100 characters. - No numeric value allowed at beginning. No space allowed.
Request Queue	Specify the queue. Queue Name is JNDI based destination name. Note: - Enter 1 to 100 characters. - No numeric value allowed at beginning. No space allowed.
Response Connection Factory	Specify the connection factory. Response Connection Factory is needed when destination is going to respond back after processing the request.
Response Queue	Specify the queue. Response Queue Name is needed when destination is going to respond back after processing the request.

- c. On **New Implementation** screen, for adding queue details manually, select the **Implementation Type** as **Kafka** to define the queue details.

The **Kafka Details** screen is displayed.

Figure 6-4 Kafka Details

The screenshot shows a web interface titled "New Implementation" with a close button (X) in the top right. Below the title bar, there is a navigation bar with a back arrow, the text "Kafka Details (2/2)", and a forward arrow. The main content area has a label "Topic Name" above a text input field. Below the input field, the word "Required" is displayed. At the bottom right of the form, there is a "Save" button.

- d. Specify the fields on **Kafka Details** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 6-3 Kafka Details - Field Description

Field	Description
Topic Name	Specify the topic name for publishing the message. Note: • Enter 1 to 30 characters. • Only alphanumeric characters, periods, underscores and hyphens are allowed.

- e. On **New Implementation** screen, for adding queue details manually, select the **Implementation Type** as **OIC** to define the queue details.

The **OIC** screen is displayed.

Figure 6-5 OIC

The screenshot shows a web interface titled "New Implementation" with a close button (X) in the top right. Below the title is a navigation bar with a left arrow, the text "Implementation Details (1/3)", and a right arrow. The main content area contains four fields: "Implementation Name" (a text input box with "Required" text below it), "Implementation Description" (a text input box), "Implementation Type" (a dropdown menu showing "OIC"), and "Default" (a toggle switch). At the bottom right, there is a "Next Step" button.

- f. On **New Implementation** screen, for adding queue details manually, select the **Implementation Type** as **Socket** to define the queue details.

The **Socket** screen is displayed.

Figure 6-6 Socket

New Implementation [X]

< **Implementation Details (1/1)** >

Implementation Name Required

Implementation Description

Implementation Type

Default ☐

Scheme

Service Name

Host Required

Port

Use WSDL details (scheme, host and port) for SOAP service invocation ☐

Save

Authentication Details

If external product processor require authentication to connect to it, Oracle Banking Routing Hub provides standard authentication mechanism schemes like Basic, JWT Token, OAuth Token, SSO, Custom.

Note

If there is no authentication, set the Authentication Type to NONE. For identity propagation, set the Authentication Type to SSO. The token is cached for JWT Token, OAUTH_Token authentication type, and OIC Implementation Type.

4. Click Next Step.

The **New Implementation - Authentication Details** screen is displayed.

Figure 6-7 New Implementation - Authentication Details

5. On **New Implementation - Authentication Details** screen, specify the fields.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 6-4 New Implementation - Implementation Details - Field Description

Field	Description
Type	Select the type of authentication from drop-down list. The available options are: • Basic • JWT Token • OAUTH Token • SSO • Custom
Encryption	Select the toggle to encrypt user credentials. Note: This field is applicable only for JWT Token and OAUTH Token types. Note: This field depends on the value of api-gateway's property "EncryptionFlag" at provider end. For more information on property value, please refer to the Oracle Banking Microservices Architecture Deployments section in Oracle Banking Microservices Platform Foundation Installation Guide .
Username	Specify the name of the user. Note: • Enter 1 to maximum of 255 characters. • No numeric value at beginning and no space allowed.
Password	Specify the password.

Table 6-4 (Cont.) New Implementation - Implementation Details - Field Description

Field	Description
Consumer Service	Select the service which will be treated as custom authentication service. Note: Custom Authentication flag enabled consumer services are displayed

Headers

A provider implementation might require some standard headers to be passed along with the request. The user can specify the headers which are required by service endpoints but not present in swagger file.

Header step appears only if the Implementation **Type** is selected as **Default** or **OIC**.

Note

Content-type header will be removed from Provider request if header value is NONE.

6. Click Next Step.

The **New Implementation - Headers** screen is displayed.

Figure 6-8 New Implementation - Headers
7. Specify the fields on the New Implementation - Headers screen.**Note**

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 6-5 New Implementation - Headers - Field Description

Field	Description
Name	Specify the name of the header. Note: - Enter 1 to 255 characters. - No numeric value allowed at beginning. No space allowed.
Value	Specify the value of the header. Value can be hardcoded or velocity template.

Services

- **WSDL:**
The Web Services Description Language (WSDL) is an XML-based interface description language that is used for describing the functionality offered by a web service.
Both SSL and non-SSL WSDL URL are supported.
Context path can be modified for existing WSDL operations.

Note

If there is a change in wsdl file, then same wsdl file need to be imported again to update the provided service information in Routing Hub.

- **SWAGGER:**
Swagger is an Interface Description Language for describing RESTful APIs expressed using JSON.
Currently, Swagger 2.0 and OpenAPI 3.0 both are supported.
Existing REST endpoints can also be modified or deleted.

Note

If there is a change in swagger file, then same swagger file need to be imported again in order to update the provided service information in Routing Hub.

- **OTHERS:**
OTHERS option is selected for adding REST API details manually when provider does not have swagger file.

Note

If there is a change in existing endpoint, then the same endpoint details can be modified using edit option.

8. Click **Next Step**.

The **New Implementation - Services** screen is displayed.

Figure 6-9 New Implementation - Services

9. Specify the fields on the **New Implementation - Services** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 6-6 New Implementation - Services - Field Description

Field	Description
Service	The below fields appear only if the Implementation Type is selected as Default or OIC .
Type	Select the type of service from drop-down list. The available options are: • WSDL • SWAGGER • OTHERS
URL	Specify the service URL of the file location. Note: This field appears only if the Type is selected as WSDL and SWAGGER .
Content path Prefix	Context path of below formatted URL. http://host:port/context-path/endpointGateway Note: • Enter 0 to 255 characters. • No numeric value allowed at beginning. No space allowed.
WSDL Access Headers	Specify the headers required for accessing / reading WSDL's.

Table 6-6 (Cont.) New Implementation - Services - Field Description

Field	Description
Import	Click Import to extract the service information from URL and displays it in the Service list. Note: This field appears only if the Type is selected as WSDL and SWAGGER .

- a. On **New Implementation** screen, for adding REST endpoint details manually, select the **Type** as **Others** to define the endpoint details.

The **Endpoint Details** screen is displayed.

Figure 6-10 Endpoint Details

The screenshot shows a web application interface for configuring a new implementation. The main window is titled 'New Implementation' and has a close button (X) in the top right. Below the title bar, there's a breadcrumb 'Services (4/4)' with left and right navigation arrows. The 'Type' dropdown is set to 'Others'. Below this, there's a section titled 'Endpoint Details (1/3)' with its own navigation arrows. This section contains four input fields: 'Name' with the value 'getAccountDetails', 'HTTP Method' with a dropdown set to 'GET', 'Endpoint' with the value '/service/v1/account/{id}', and 'Context Path' with the value '/gateway'. At the bottom right of the form are 'Cancel' and 'Next Step' buttons.

- b. Specify the fields on **Endpoint Details** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 6-7 Endpoint Details - Field Description

Field	Description
Name	Specify the name of the operation. Note: - This field appears only if the Type is selected as Others. - Enter 1 to maximum of 255 characters. - No numeric value allowed at beginning. No space allowed.

Table 6-7 (Cont.) Endpoint Details - Field Description

Field	Description
HTTP Method	Select the HTTP method from the drop-down list. The available options are: • GET • POST • PUT • PATCH • DELETE Note: This field appears only if the Type is selected as Others .
Endpoint URL	Specify the endpoint URL for the operation. Note: • This field appears only if the Type is selected as Others. • Enter 1 to maximum of 2047 characters. • No numeric value allowed at beginning. No space allowed.
Content Path	Context path of below formatted URL http://host:port/context-path/endpoint Note: • Enter 0 to maximum of 255 characters. • No numeric value allowed at beginning. No space allowed.

- c. Click **Next Step**.

The **Endpoint Headers** screen is displayed.

Figure 6-11 Endpoint Headers

New Implementation [X]

Services (4/4) [Previous] [Next]

Type: Others [v]

Endpoint Headers (2/3) [Previous] [Next]

	Name	Value	
☐	Content-Type	application/json	

Page 1 of 1 (1 of 1 items) [Previous] [1] [Next]

[Cancel] [Next Step]

- d. Specify the fields on **Endpoint Headers** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 6-8 Endpoint Headers - Field Description

Field	Description
Name	Specify the name of the header. Note: - This field appears only if the Type is selected as Others. - Enter 1 to maximum of 255 characters. - No numeric value allowed at beginning. No space allowed.
Value	Specify the value of the header. Value can be hardcoded or velocity template. Note: This field appears only if the Type is selected as Others .

- e. Click **Next Step**.

The **Endpoint Query Parameters** screen is displayed.

Figure 6-12 Endpoint Query Parameters

The screenshot shows a 'New Implementation' window with a breadcrumb 'Services (4/4)' and a 'Type' dropdown set to 'Others'. Below this is the 'Endpoint Query Parameters (3/3)' section, which contains an empty table with columns 'Name' and 'Value'. The table shows 'No data to display.' and a pagination bar indicating 'Page 1 (0 of 0 items)'. At the bottom right, there are 'Cancel' and 'Add' buttons.

- f. Specify the fields on **Endpoint Query Parameters** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 6-9 Endpoint Query Parameters - Field Description

Field	Description
Name	Specify the name of the header. Note: - This field appears only if the Type is selected as Others. - Enter 1 to maximum of 255 characters. - No numeric value allowed at beginning. No space allowed.
Value	Specify the value of the header. Value can be hardcoded or velocity template. Note: This field appears only if the Type is selected as Others .

- g. Click **Add** for adding it in service list.

Import Implementation

The user can create an implementation by importing the JSON file. The user can also import zip file in order to import all the configuration JSON files together (except parent level configuration JSON files).

10. On **Implementation** screen, click **Import**.

The **Import Implementation** screen is displayed.

Figure 6-13 Import Implementation

For more information on fields, refer to the field description table.

Table 6-10 Import Implementation - Field Description

Field	Description
File	Click Select to select the file. Note: Allows only to select one file and accepts JSON and ZIP file.

11. Click **Import** to import the selected file.

The below data needs to be changed after importing implementation configuration file:

- Implementation Host and Port
- Implementation Authentication Password

View / Edit Implementation

The user can view or modify implementation details.

12. On **Implementation** screen, click **Edit** icon .

The **Edit Implementation** screen is displayed.

Figure 6-14 Edit Implementation - Implementation Details

The screenshot displays the 'Edit Implementation' window with a title bar and a close button. The main content area is titled 'Implementation Details (1/4)' and contains several form fields and toggle switches. The fields are arranged in two columns. The first column includes 'Implementation Name' (text input with 'Oracle_Provider_Default'), 'Implementation Type' (dropdown menu with 'Default'), 'Eureka Instance' (toggle switch, currently on), 'Scheme' (dropdown menu with 'http'), 'Host' (text input), and 'Use WSDL details (scheme, host and port) for SOAP service invocation' (toggle switch, currently off). The second column includes 'Implementation Description' (text input with 'Default Implementation'), 'Default' (toggle switch, currently on), 'Single Tenant' (toggle switch, currently off), 'Service Name' (text input with 'XXXX'), and 'Port' (text input). A 'Next Step' button is located at the bottom right of the form.

13. Click **Next Step**.

The **Edit Implementation - Authentication Details** screen is displayed.

Figure 6-15 Edit Implementation - Authentication Details

Edit Implementation [X]

< **Authentication Details (2/4)** >

Type:

Encryption: ☐

Username:

Password:

Consumer Service:

Next Step

14. Click **Next Step**.

The **Edit Implementation - Headers** screen is displayed.

Figure 6-16 Edit Implementation - Headers

Edit Implementation [X]

< **Headers (3/4)** >

+ -

	Name	Value
☐		

No data to display.

Page 1 (0 of 0 items) |< < 1 > >|

Next Step

15. Click **Next Step**.

The **Edit Implementation - Services** screen is displayed.

Figure 6-17 Edit Implementation - Services

16. Click **Save** to save the modified implementation details.

Delete Implementation

The user can delete the implementation details.

17. On **Implementation** screen, click **Delete**.

The **Confirmation** screen is displayed.

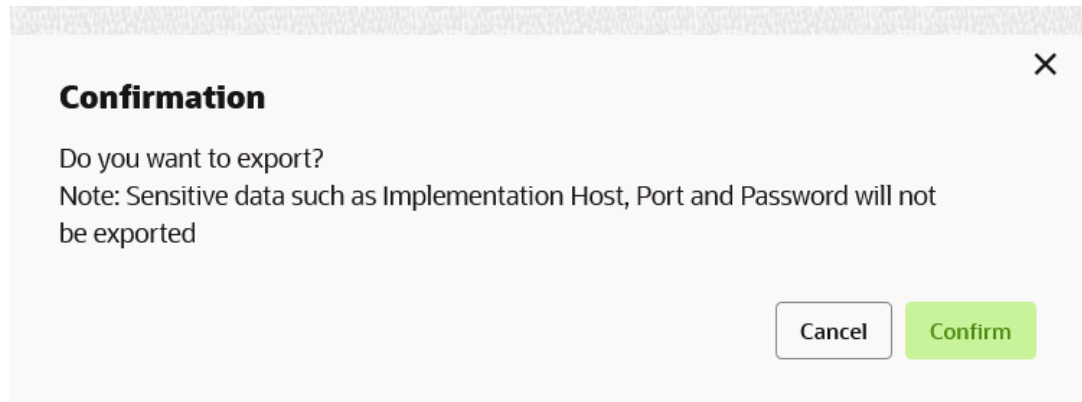
Figure 6-18 Confirmation - Delete

Export Implementation

The user can export the implementation configuration as JSON file.

18. On **Implementation** screen, click **Operation menu** (3 dots button) and click **Export**.

The **Confirmation** screen is displayed.

Figure 6-19 Confirmation - Export Implementation

Below data cannot be exported:

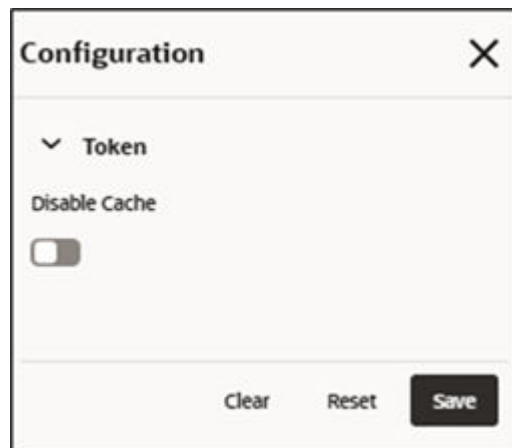
- Implementation Host
- Implementation Port
- Implementation Authentication Password

The above data needs to be configured manually after importing the configuration file. Same has been mentioned in Import section.

Configuration

End-user can configure the properties for failing the routing hub requests.

19. On **Implementation** tile, click **Operation menu** (3 dots button), and click **Configuration**. The **Configuration** screen is displayed.

Figure 6-20 Configuration

For more information on fields, refer to the field description table.

Table 6-11 Configuration - Field Description

Field	Description
Disable cache	This property is used to disable the token caching. Note: Default value is false.

Request Audit

20. On **Implementation** screen, click **Operation menu** (3 dots button) and click **Request Audit**.

The **Request Audit** screen is displayed.

Note

Refer to [Request Audit](#) topic for screen and field description.

Clear Cache

The user can clear the SOAP client cache.

21. On **Implementation** screen, click **Operation menu** (3 dots button) and click **Clear Cache**.

7

Consumer Services

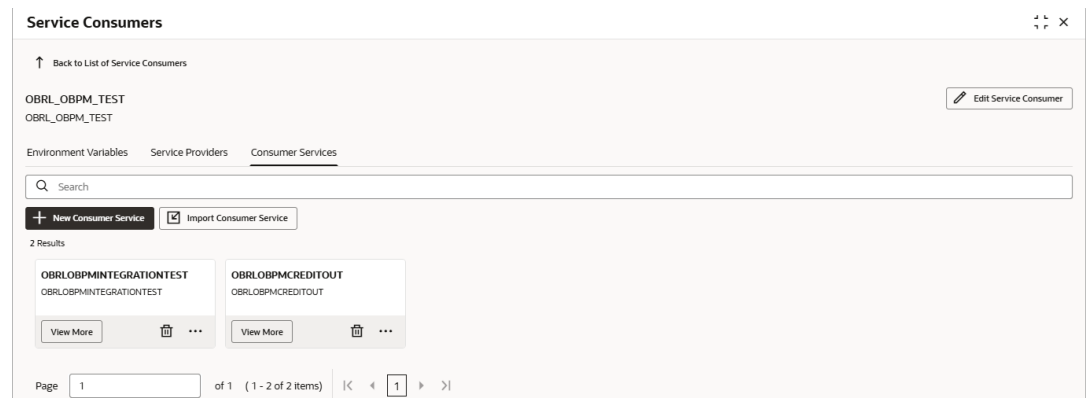
This topic describes the systematic instructions to configure the consumer services.

Consumer Services specifies the service ID that is transmitted by the service consumer. It also handles transitions and route definitions, including the details for source integration.

1. On **Service Consumers** screen, click **Consumer Services**.

The **Consumer Services** screen is displayed.

Figure 7-1 Consumer Services



New Consumer Service

The user can create Consumer Service manually.

2. On **Consumer Services** screen, click **New**.

The **New Consumer Service - Consumer Service Details** screen is displayed.

Figure 7-2 New Consumer Service - Consumer Service Details

New Consumer Service

Consumer Service Details (1/3)

Consumer Service ID Required

Active ☒

Custom Authentication ☐

Retain Routing Configuration ☐

Request Audit
☒ Yes ☐ No
 ⚠ Applicable if the Audit type at 'Service Consumer' is 'Service level configuration'

Consumer Service Description Required

Next Step

3. On **New Consumer Service - Consumer Service Details** screen, specify the fields.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 7-1 New Consumer Service - Consumer Service Details - Field Description

Field	Description
Consumer Service ID	Specify the ID of the consumer service. Note: - Enter 1 to maximum of 255 characters. - No numeric value at beginning and no space allowed.
Active	ON / OFF If this flag is toggled OFF, then all related routes will be stopped.
Custom Authentication	This flag is to mark the consumer service which can be used as custom authentication service in implementation.
Retain Routing Configuration	This toggle determines whether to retain existing routing configuration or not.

Table 7-1 (Cont.) New Consumer Service - Consumer Service Details - Field Description

Field	Description
Request Audit	Select the Audit option for the consumer service. The available options are: Yes-This option is for enabling the audit for consumer service. No-This option is for disabling the audit for consumer service. Note: This option is only applicable if Audit type at Service Consumer is Service level configuration '
Consumer Service Description	Specify the description of the consumer service. Note: - Enter 1 to maximum of 1000 characters. - No space allowed at beginning or ending of the characters.

4. To add **Attributes**, follow the below steps.

- a. Click **Add** icon.

The **Attributes** screen is displayed.

Figure 7-3 Attributes

- b. Specify the fields on **Add Attribute** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 7-2 Add Header - Field Description

Field	Description
Name	Specify the name of the attribute. Note: - Enter 1 to maximum of 255 characters. - No numeric value at beginning and no space allowed.

Table 7-2 (Cont.) Add Header - Field Description

Field	Description
Type	Select the type in which value will be specified. The available options are: - JSONPath - Velocity
Value	Specify the value.

Note

- Using \$.body, the user can access the request body.
Syntax: \$.body.fieldName
Example: \$.body.branchCode
- Using \$.headers, the user can access the request headers.
Syntax: \$.headers["fieldname"][0]
Example: \$.headers["branchCode"][0]
- Using \$.env, the user can access the environment variables.
Syntax: \$.env.group.variable

- c. Click **Next Step**.

The **Custom Endpoint** screen is displayed.

Figure 7-4 Custom Endpoint

New Consumer Service [Close]

Custom Endpoint (3/3)

Swagger URL: [Import] [Add] [Delete]

☐	Endpoint	HTTP Method
No data to display.		

Page 1 (0 of 0 items) [Navigation] [Save]

5. Click **Save** to save the details.

Import Consumer Service

The user can create a consumer service by importing the JSON file.

The user can also import zip file in order to import all the configuration JSON files together (except parent level configuration JSON files).

6. On **Consumer Services** screen, click **Import**.

The **Import Service** screen is displayed.

Figure 7-5 Import Service

Import Consumer Service

Drag and Drop

Select a file or drop one here.

File

Overwrite extended templates

☐ Yes

☒ No

import

For more information on fields, refer to the field description table.

Table 7-3 Import Service - Field Description

Field	Description
File	Select the file using Select button. Note; Allows only to select one file and accepts only JSON file.
Overwrite extended templates	Select the respective radio button to overwrite the extended templates. The available options are: - Yes - This option overwrites the extended templates. - No - This option retains the existing extended templates.

7. Click **Import** to import the selected file.

View / Edit Consumer Service

The user can view or modify consumer service details.

8. On **Consumer Service** tile, click **View More**, and click **Edit Consumer Service**.

The **Edit Consumer Service** screen is displayed.

Figure 7-6 Edit Consumer Service

The screenshot shows the 'Edit Consumer Service' dialog box with the title bar 'Edit Consumer Service' and a close button (X). Below the title bar is a navigation bar with a back arrow, 'Consumer Service Details (1/3)', and a forward arrow. The main content area contains the following fields and controls:

- Consumer Service ID:** A text input field containing 'GET_ACCOUNT_DETAILS'.
- Active:** A toggle switch that is currently turned on (blue).
- Custom Authentication:** A toggle switch that is currently turned off (grey).
- Retain Routing Configuration:** A toggle switch that is currently turned off (grey).
- Request Audit:** Radio buttons for 'Yes' (selected) and 'No'.
- Warning:** A yellow triangle icon followed by the text: 'Applicable if the Audit type at "Service Consumer" is "Service level configuration"'. This text is in a smaller font and appears to be a tooltip or a note.
- Consumer Service Description:** A text input field containing 'Fetches account details'.
- Next Step:** A button in the bottom right corner.

9. Click **Next Step**

The **Edit Consumer Service - Attributes** screen is displayed.

Figure 7-7 Edit Consumer Service - Attributes

The screenshot shows the 'Edit Consumer Service' dialog box with the title bar 'Edit Consumer Service' and a close button (X). Below the title bar is a navigation bar with a back arrow, 'Attributes (2/3)', and a forward arrow. The main content area contains the following elements:

- Table:** A table with columns: Name, Type, Value. The table is currently empty, showing 'No data to display.'.
- Page:** A pagination bar showing 'Page 1 (0 of 0 items)' and navigation arrows.
- Next Step:** A button in the bottom right corner.

10. Click **Next Step**

The **Edit Consumer Service - Custom Endpoint** screen is displayed.

Figure 7-8 Edit Consumer Service - Custom Endpoint

Edit Consumer Service [X]

< Custom Endpoint (3/3) >

Swagger URL **Import**

+ -

☐	Endpoint	HTTP Method
No data to display.		

Page 1 (0 of 0 items) |< < 1 > >|

Save

11. Click **Save** save the modified consumer service details.

Delete Consumer Service

The user can delete the consumer service.

12. On **Consumer Service** tile, click **Delete**.

The **Confirmation** screen is displayed.

Figure 7-9 Confirmation

Confirmation [X]

Do you want to delete the record?

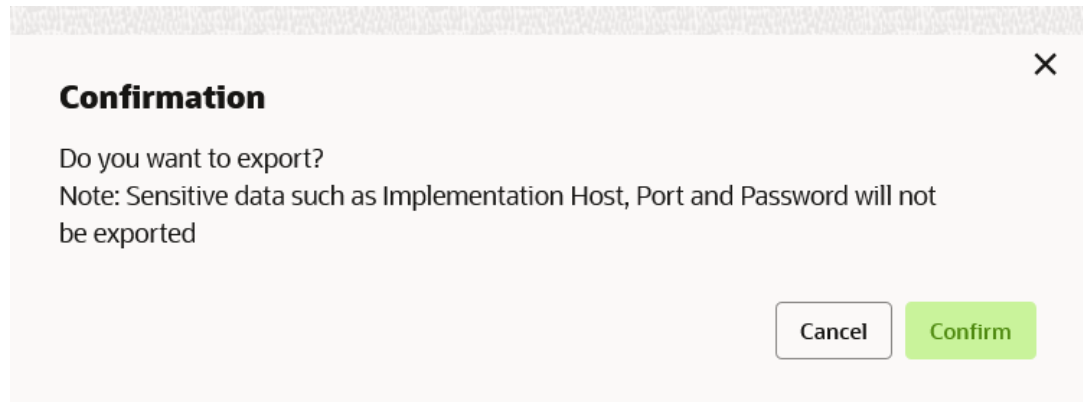
Cancel **Confirm**

Export Consumer Service

The user can export the consumer service configuration as JSON file.

13. On **Consumer Service** tile, click **Operation menu** (3 dots button), and click **Export**.

The **Confirmation** screen is displayed.

Figure 7-10 Confirmation - Export**Consumer Service - Configuration**

14. On **Consumer Service** tile, click **Operation menu** (3 dots button), and click **Configuration**.

The **Configuration** screen is displayed.

Figure 7-11 Consumer Service - Configuration

15. Specify the fields on **Consumer Service - Configuration** screen.

For more information on fields, refer to the field description table.

Table 7-4 Consumer Service - Configuration - Field Description

Field	Description
Allow data masking	Toggle to enable the hiding of sensitive information in request audit messages.

Table 7-4 (Cont.) Consumer Service - Configuration - Field Description

Field	Description
Regex Patterns	Specify the regex patterns for identification of sensitive fields. Note: You can group values by using a sub-pattern that is placed inside parentheses ().
Service level timeout	This property is used to override the global and provider timeout values. Note: Default value is false.
Connection Timeout	This property is used to set the timeout in making the initial connection that is connection handshake. Note: The value should be in milliseconds.
Read Timeout	This property is used to set the timeout on waiting to read data. Note: The value should be in milliseconds.
Handle Timeout Error Code	This property is used to enable/disable the handling of timeout error codes
Connection Timeout Error Code	This property is used to override the default error code of connection timeout.
Read Timeout Error Code	This property is used to override the default error code of read timeout.

Note

Refer to [Configuration](#) topic for the screen and field description of Route Shutdown properties.

Consumer Service - Request Audit

16. On **Consumer Service** tile, click **Operation menu** (3 dots button), and click **Request Audit**.

The **Request Audit** screen is displayed.

Note

Refer to [Request Audit](#) topic for the screen and field description.

8

Transformation

This topic describes the systematic instructions to configure the transformation.

Transformation involves gathering and changing data from one source to another and back again. This process occurs within consumer services. It changes the data from the service consumer into a format suitable for the service provider.

1. From **Consumer Services** screen, click the required consumer service tile.

The **Transformation** screen is displayed.

Figure 8-1 Transformation



New Transformation

The user can create transformation manually.

2. On **Transformation** screen, click **New**.

The **New Transformation - Basic Details** screen is displayed.

Figure 8-2 New Transformation - Basic Details

- Specify the fields on **New Transformation - Basic Details** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 8-1 New Transformation - Basic Details - Field Description

Field	Description
Transformation Name	Specify the name for the transformation. Note: - Enter 0 to maximum of 255 characters. - No numeric value at beginning and no space allowed.
Active	ON / OFF If transformation is turned OFF, the user will be unable to choose transformation in routing.
Product Processor	Select the product processor from the drop-down list.
Implementation	Select the implementation from the drop-down list.
Service	Select the service from the drop-down list.
Service	Displays the service details of the selected service.
Operation	Displays the operation details of the selected service.

- Click **Next Step**.

The **New Transformation - Request Validation** screen is displayed.

Figure 8-3 New Transformation - Request Validation

- Specify the fields on **New Transformation - Request Validation** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 8-2 New Transformation - Request Validation - Field Description

Field	Description
Validation Required?	Select the toggle to enable the validation required for request. Note: Validation Model of Oracle Banking Pricing & Decision Service is only supported.
Product Processor	Select the product processor from the drop-down list.
Implementation	Select the implementation from the drop-down list.
Service	Select the service from the drop-down list.
Template	Specify the template in which validation provider accepts.

6. Click **Next Step**.

The **New Transformation - Request Headers** screen is displayed.

Figure 8-4 New Transformation - Request Headers

The screenshot shows a web interface titled "New Transformation" with a sub-header "Request Headers (3/8)". It contains a table with two columns: "Name" and "Value". The first row has "Content-Type" in the "Name" column and "application/json" in the "Value" column. Below the table, there is a pagination control showing "Page 1 of 1 (1 of 1 items)" and a "Next Step" button.

7. Specify the fields on **New Transformation - Request Headers** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 8-3 New Transformation - Request Headers - Field Description

Field	Description
Name	A list of headers related to the chosen provider, implementation, and service is displayed. The user can only modify the header value.
Value	Displays the value of the headers. Value can be hardcoded value or velocity mapping.

8. Click **Next Step**.

The **New Transformation - Path Parameters** screen is displayed.

Figure 8-5 New Transformation - Path Parameters

New Transformation

<

Path Parameters (4/8)

>

Name	Value	
id		

Page 1 of 1 (1 of 1 items) | < < 1 > > |

Next Step

9. Specify the fields on **New Transformation - Path Parameters** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 8-4 New Transformation - Path Parameters - Field Description

Field	Description
Name	A list of path parameters related to the chosen service is displayed. User can only change the path parameter value.
Value	Displays the value of the headers. Value can be hardcoded value or velocity mapping.

10. Click **Next Step**.

The**New Transformation - Query Parameters** screen is displayed.

Figure 8-6 New Transformation - Query Parameters

New Transformation

<

Query Parameters (5/8)

>

Name	Value	
No data to display.		

Page 1 (0 of 0 items) | < < 1 > > |

Next Step

11. Specify the fields on **New Transformation - Query Parameters** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 8-5 New Transformation - Query Parameters - Field Description

Field	Description
Name	Query parameter list relevant to the selected service is displayed. User can only change the query parameter value.
Value	Displays the value of the headers. Value can be hardcoded value or velocity mapping.

12. Click **Next Step**.

The **New Transformation - Request Transformation** screen is displayed.

Figure 8-7 New Transformation - Request Transformation

The screenshot shows the 'New Transformation' window with a close button (X) in the top right corner. Below the title bar is a navigation bar with a back arrow, the text 'Request Transformation (6/8)', and a forward arrow. The main form area contains four sections: 'Body Type' with a dropdown menu showing 'Raw'; 'Template Type' with a dropdown menu showing 'Velocity'; 'Template' with a large empty text area; and 'Extended Template' with another large empty text area. At the bottom right of the form is a 'Next Step' button.

13. Specify the fields on **New Transformation - Request Transformation** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 8-6 New Transformation - Request Transformation - Field Description

Field	Description
Body Type	Select the body type for the Request Transformation from the drop-down list. The available options are: • RAW • FORM DATA • BINARY Note: This field appears only if the selected service is REST service and RAW option is used for URL-encoded content type.
Template Type	Select the template type for the Request Transformation from the drop-down list. The available options are: • VELOCITY • JSLT • XSLT
Template	Specify the template for the Request Transformation in which provider accepts. Refer to Transformation Type for syntax.
Extended Template	Specify the custom template in order to extend the kernel template. Refer to Extensibility and Transformation Type for syntax. Note: This field appears only if the Body Type is selected as RAW .

14. Click **Next Step**.

The **New Transformation - Response Headers** screen is displayed.

Figure 8-8 New Transformation - Response Headers

The screenshot shows the 'New Transformation' window with the 'Response Headers (7/8)' tab selected. The table below the tab is empty, with columns 'Name' and 'Value'. Below the table, there is a message 'No data to display.' and a pagination bar showing 'Page 1 (0 of 0 items)'. A 'Next Step' button is located at the bottom right of the window.

15. Specify the fields on **New Transformation - Response Headers** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 8-7 New Transformation - Response Headers - Field Description

Field	Description
Name	User can specify the additional headers that are required to be part of Routing Hub response headers. Note: - Enter 1 to maximum of 255 characters. - No numeric value at beginning and no space allowed.
Value	Displays the value of the headers. Value can be hardcoded value or velocity mapping.

16. Click **Next Step.**

The **New Transformation - Response Transformation** screen is displayed.

Figure 8-9 New Transformation - Response Transformation

New Transformation [Close]

Response Transformation (6/6)

Stop route for failed request? ☐

Continue on request timeout? ☐

Template Type
Velocity

Mocking Required? ☐

Mock Type
Template

Mock Template

Template

Extended Template

Save

17. Specify the fields on **New Transformation - Response Transformation screen.**

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 8-8 New Transformation - Response Transformation - Field Description

Field	Description
Stop route for failed request	This property is used to handle response for failed request. Note: Only applicable for API chaining scenario.
Continue on request timeout	This property is used to resume the route instead of breaking the route for timeout scenario
Template Type	Select the template type for the Response Transformation from drop-down list. The available options are: • VELOCITY • JSLT • XSLT
Mocking required?	Click this toggle to enable mocking for the Response Transformation. If the toggle is ON , the Routing Hub will return the mocked template output (with extended template output if mentioned) to consumer without invoking provider API.
Mock Type	This property is used to mock the provider response or routing hub response based on the selected type. The available options are: • Template • Response Note: Default value is Template.
Mock Template	Specify the kernel template for the Response Transformation in which the consumer accepts. Refer Transformation Type for syntax.
Mock Response	Specify the mocked response of provider.
Template	Specify the kernel template in which consumer accepts. Refer Transformation Type for syntax.
Extended Template	Specify the custom template in order to extend the kernel template. Refer to Extensibility and Transformation Type for syntax.

18. Click **Save** to save the details.

Import Transformation

The user can create a transformation by importing the JSON file. The user can also import zip file in order to import all the configuration JSON files together (except parent level configuration JSON files).

19. On **Transformation** screen, click **Import**.

The **Import Transformation** screen is displayed.

Figure 8-10 Import Transformation

Import Transformation

Drag and Drop

Select a file or drop one here.

File

Overwrite extended templates

☐ Yes

☒ No

Import

For more information on fields, refer to the field description table.

Table 8-9 Import Transformation - Field Description

Field	Description
File	Select the file using Select button. Note: Allows only to select one file and accepts JSON and ZIP file.
Overwrite extended templates	Select the respective radio button to overwrite the extended templates. The available options are: - Yes - This option overwrites the extended templates. - No - This option retains the existing extended templates.

20. Click **Import** to import the selected file.

View / Edit Transformation

The user can view or more transformation details.

21. On **Transformation** list, click **Edit**.

The **Edit Transformation - Basic Details** screen is displayed.

Figure 8-11 Edit Transformation - Basic Details

Edit Transformation [Close]

< **Basic Details (1/8)** >

Transformation Name
Account_Transformation

Active
☒

Product Processor
Oracle_Provider 14.8.0.0.0

Implementation

Service
getAccountDetails - /service/v1/account/{id}

Service
GET /service/v1/account/{id}

Operation
getAccountDetails

Next Step

22. Click **Next Step**.

The **Edit Transformation - Request Validation** screen is displayed.

Figure 8-12 Edit Transformation - Request Validation

Edit Transformation

<

Request Validation (2/8)

>

Validation Required

☐

Product Processor

Implementation

Service

Template

Next Step

23. Click **Next Step**.

The **Edit Transformation - Request Headers** screen is displayed.

Figure 8-13 Edit Transformation - Request Headers

Edit Transformation

<

Request Headers (3/8)

>

Name	Value	
Content-Type	application/json	

Page

1

of 1

(1 of 1 items)

|<

<

1

>

>|

Next Step

24. Click **Next Step**.

The **Edit Transformation - Path Parameters** screen is displayed.

Figure 8-14 Edit Transformation - Path Parameters

Name	Value
id	

Page 1 of 1 (1 of 1 items) |< < 1 > >|

Next Step

25. Click **Next Step**.

The **Edit Transformation - Query Parameters** screen is displayed.

Figure 8-15 Edit Transformation - Query Parameters

Name	Value
No data to display.	

Page 1 (0 of 0 items) |< < 1 > >|

Next Step

26. Click **Next Step**.

The **Edit Transformation - Request Transformation** screen is displayed.

Figure 8-16 Edit Transformation - Request Transformation

Edit Transformation

< Request Transformation (6/8) >

Body Type

Raw

Template Type

Velocity

Template

Extended Template

Next Step

27. Click **Next Step**.

The **Edit Transformation - Response Headers** screen is displayed.

Figure 8-17 Edit Transformation - Response Headers

Edit Transformation

< Response Headers (7/8) >

+ -

	Name	Value
No data to display.		

Page 1 (0 of 0 items) |< < 1 > >|

Next Step

28. Click **Next Step**.

The **Edit Transformation - Response Transformation** screen is displayed.

Figure 8-18 Edit Transformation - Response Transformation

Edit Transformation [X]

< Response Transformation (6/6) >

Stop route for failed request? ☐

Continue on request timeout? ☐

Template Type
Velocity

Mocking Required? ☐

Mock Type
Template

Mock Template

Template

Extended Template

Save

29. Click **Save** to save the modified transformation details.

Delete Transformation

The user can delete the transformation.

30. On **Transformation** list, click **Delete**.
The **Confirmation - Delete** screen is displayed.

Figure 8-19 Confirmation - Delete

Confirmation [X]

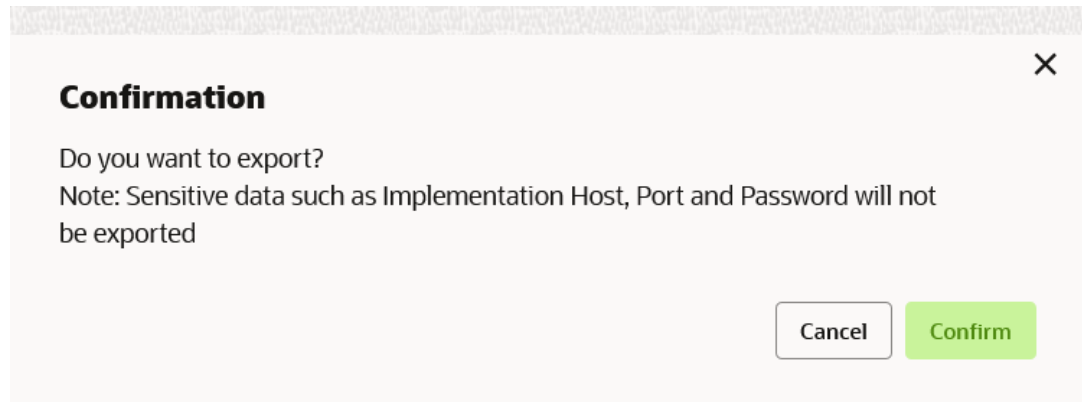
Do you want to delete the record?

Cancel Confirm

Export Transformation

The user can export the transformation configuration as JSON file.

31. On **Transformation** list, click **Operation menu** (3 dots button), and click **Export**.
The **Confirmation** screen is displayed.

Figure 8-20 Confirmation - Export**Request Audit**

32. On **Transformation** list, click **Operation menu** (3 dots button), and click **Request Audit**.

The **Request Audit** screen is displayed.

Note

Refer to [Request Audit](#) topic for screen and field description.

9

Routing

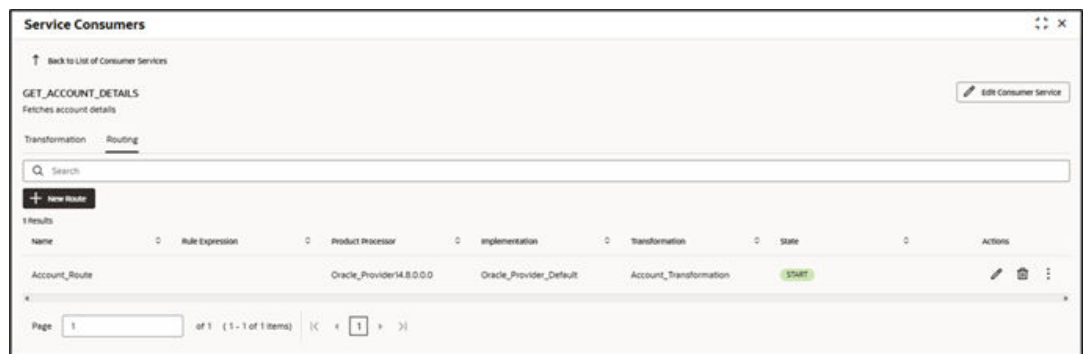
This topic describes the systematic instructions to configure the routing.

Routing does not establish any specific rules or configurations based on rules. Instead, it determines which service provider receives the actual request by considering maintenance and assessment factors.

1. On **Consumer Services** screen, click **Routing**.

The **Routing** screen is displayed.

Figure 9-1 Routing



New Route

The user can create routing manually.

2. On **Routing** screen, click **New**.

The **New Route - Routing Details** screen is displayed.

Figure 9-2 New Route - Routing Details

3. On **New Route - Routing Details** screen, specify the fields.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 9-1 New Route - Routing Details - Field Description

Field	Description
Name	Specify the name for the route. Note: - Enter 1 to maximum of 255 characters. - No numeric value at beginning and no space allowed.
State	Start / Stop If routing is marked as STOP, then consumer request fails at routing hub level only.
Auto Shutdown	ON / OFF If the Auto Shutdown toggle is activated, the route state will switch to STOP if the route failure exceeds the allowed threshold limit set by the monitoring and alert configuration.

Table 9-1 (Cont.) New Route - Routing Details - Field Description

Field	Description
Rule Type	Select the rule type. The available options are: • Default Rule • Custom Rule
Expression Editor	Displays the expression that is formed through expression editor. Note: Maximum length for rule expression is 1000.

Add Custom Rule using Expression Attributes

4. To add rule, follow the below steps.
 - a. On **New Route** screen, click **Custom** button.
The **Expression Editor** screen is displayed.

Figure 9-3 Expression Editor

New Route [X]

< **Routing Details (1/2)** >

Name
a

State
Start Stop

Auto Shutdown
☐

Rule
☐ Default ☒ Custom

Expression

+ -

	Attribute	Operator	Value	Condition Type
No data to display.				

Page 1 (0 of 0 items) |< < 1 > >|

Next Step

- b. Specify the fields on **Expression Editor** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 9-2 Expression Editor - Field Description

Field	Description
Attribute	Select consumer service attribute from drop-down list.
Operator	Select the logical operators to form an expression from drop-down list.
Value	Specify the value.
Condition Type	Select the condition type from drop-down list.

Note

String values must be enclosed in single quotes ('). For example: 'abc'. List values should be separated by commas and also enclosed in single quotes ('). For example: 'abc,xyz,1.23,true'. Environment variables can also be accessed using \$env.

Transformations

Users can set a series of transformations for each routing to determine how a request is handled. The order of transformations in the list can be modified using a drag-and-drop feature.

5. To add **Transformations**, follow the below steps.
 - a. On **New Route** screen, click **Add** icon.
The **Transformations** screen is displayed.

Figure 9-4 Transformations

New Route [X]

Transformations (2/2) [Previous] [Next]

+ [Icon]

☐	Product Processor	Implementation	Transformation
☐			

Page 1 of 1 (1 of 1 items) |< < 1 > >|

Product Processor
[Dropdown] Required

Implementation
[Dropdown] Required

Transformation
[Dropdown] Required

Header Name	Header Value
No data to display.	

Page 1 (0 of 0 items) |< < 1 > >|

[Save]

- b. Specify the fields on **Transformations** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 9-3 Transformations - Field Description

Field	Description
Product Processor	Select the product processor from the drop-down list.
Implementation	Select the implementation from the drop-down list.
Transformation	Select the transformation from the drop-down list.

- c. Specify the header values if required.
6. Click **Save** to save the details.

Edit Route

The user can modify the routing details.

7. On **Routing** screen, click **Edit** icon.

The **Edit Route** screen is displayed.

Figure 9-5 Edit Route

Edit Route [X]

< **Routing Details (1/2)** >

Name
Account_Route

State
Start Stop

Auto Shutdown
☐

Rule
☒ Default ☐ Custom

Next Step

8. Click **Next Step**.

The **Edit Route - Transformations** screen is displayed.

Figure 9-6 Edit Route - Transformations

Edit Route

Transformations (2/2)

Product Processor

Implementation

Transformation

Oracle_Provider 14.8.0.0.0

Oracle_Provider_Default

Account_Transformation

Page 1 of 1 (1 of 1 items) |< < 1 > >|

Product Processor

Oracle_Provider 14.8.0.0.0

Implementation

Oracle_Provider_Default

Transformation

Account_Transformation

Header Name

Header Value

Content-Type

application/json

Page 1 of 1 (1 of 1 items) |< < 1 > >|

Save

9. Click **Save** to save the modified transformation details.

Delete Route

The user can delete the routing details.

10. On **Routing** screen, click **Delete**.
The **Confirmation** screen is displayed.

Figure 9-7 Confirmation - Delete

Confirmation

Do you want to delete the record?

Cancel

Confirm

11. Click **Confirm** to delete the selected routing.

Configuration

12. On **Routing** screen, click **Operation menu** (3 dots button), and click **Configuration**.
The **Configuration** screen is displayed.

Note

Refer to [Configuration](#) topic for screen and field description.

Routing - Request Audit

13. On **Routing** screen, click **Operation menu** (3 dots button), and click **Request Audit**.
The **Request Audit** screen is displayed.

Note

Refer to [Request Audit](#) topic for screen and field description.

10

Chaining

This topic provides the information about chaining of the transformation.

The end-user can define the sequence of transformations for each routing in which the request needs to be processed.

Chaining can be achieved by using the snapshot list. The snapshot list stores the response body and response headers whenever the transformation is processed. Therefore, the end-user can access the response body or headers of all processed transformations at any stage.

Syntax: `$snapshot.get(index).body` or `$snapshot.get(index).headers`

Note

`$body` and `$headers` refers to the response body and headers of previous step.

Figure 10-1 Chaining

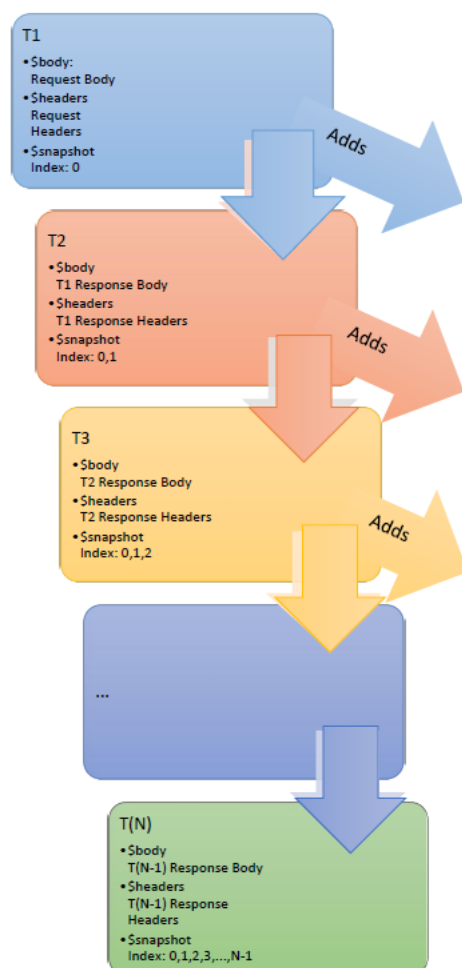


Table 10-1 Snapshot List

Index	Body	Headers
0	Request Body	Request Headers
1	T1 Response Body	T1 Response Headers
2	T2 Response Body	T2 Response Headers
3	T3 Response Body	T3 Response Headers
...	...	...
N-1	T(N-1) Response Body	T(N-1) Response Headers

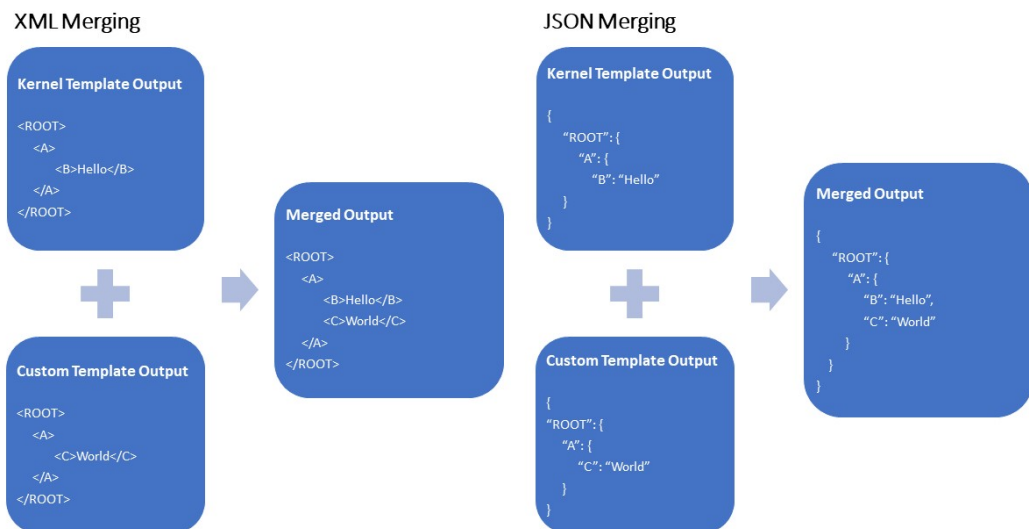
Template Extensibility

Template Extensibility in Routing Hub refers to template extensibility and is achieved by specifying the extended templates for request and response kernel transformation templates. And as part of extensibility, Routing Hub merges the output of kernel template and custom template in terms of JSON / XML merging.

In case of request, Routing Hub will send the merged output as request payload to provider.

In case of response, Routing Hub will return the merged output as response back to consumer

Figure 11-1 Extensibility - Example



Note

Order of existing elements in custom template should be same as kernel template.

- [XML merging attributes](#)

11.1 XML merging attributes

This topic contains the following subtopics:

- [Identity Matcher](#)
- [Skip Matcher](#)

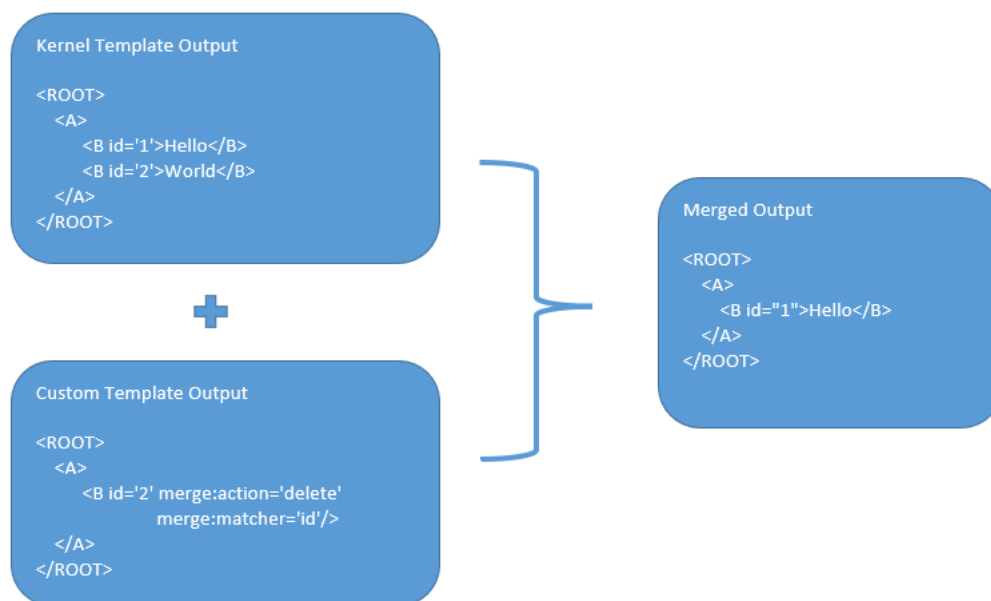
- [Override Action](#)
- [Complete Action](#)
- [Replace Action](#)
- [Preserve Action](#)
- [Delete Action](#)

11.1.1 Identity Matcher

Matcher attribute must be used when merge action has to be performed for specific element.

Syntax: `merge:matcher='<ATTRIBUTE_NAME>'`

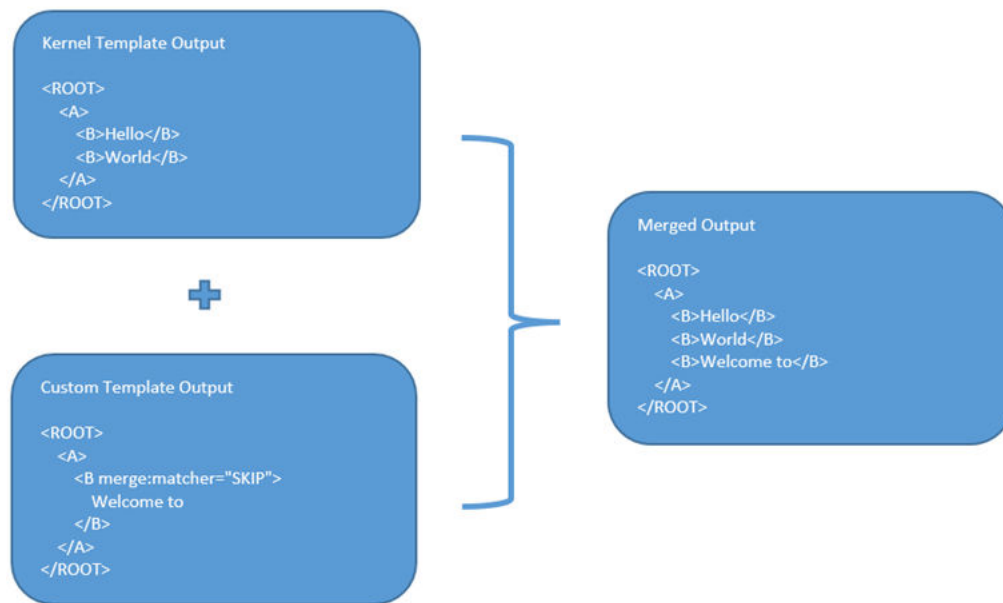
Figure 11-2 Identity Matcher



11.1.2 Skip Matcher

Skip matcher strategy is used to insert the elements forcefully without matching the original element and patch element.

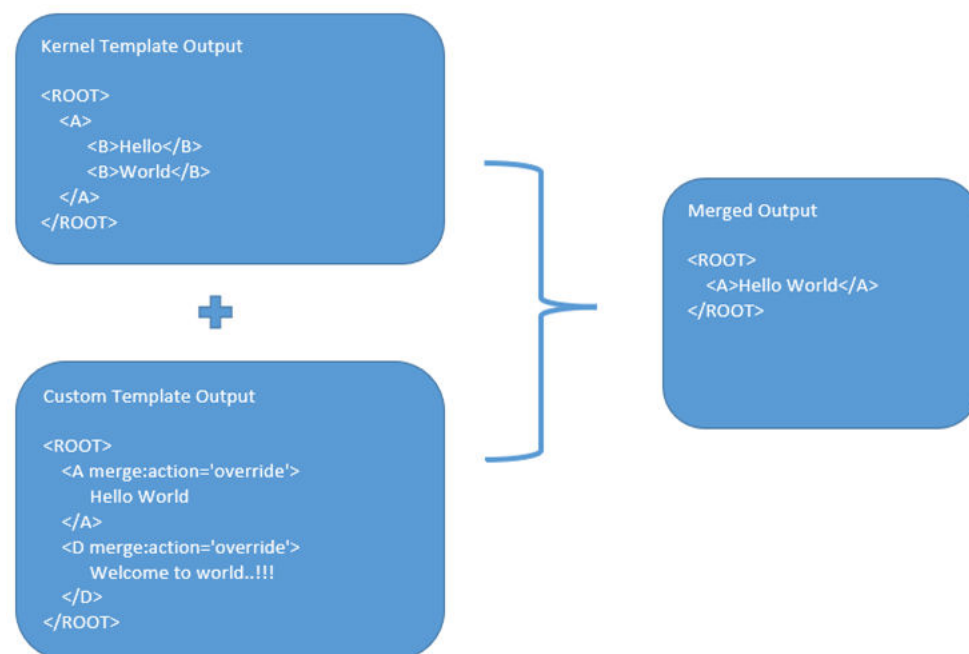
Syntax: `merge:action='SKIP'`

Figure 11-3 Skip Matcher

11.1.3 Override Action

Replaces the original element with the patch element only if it exists in kernel/mock template.

Syntax: `merge:action='override'`

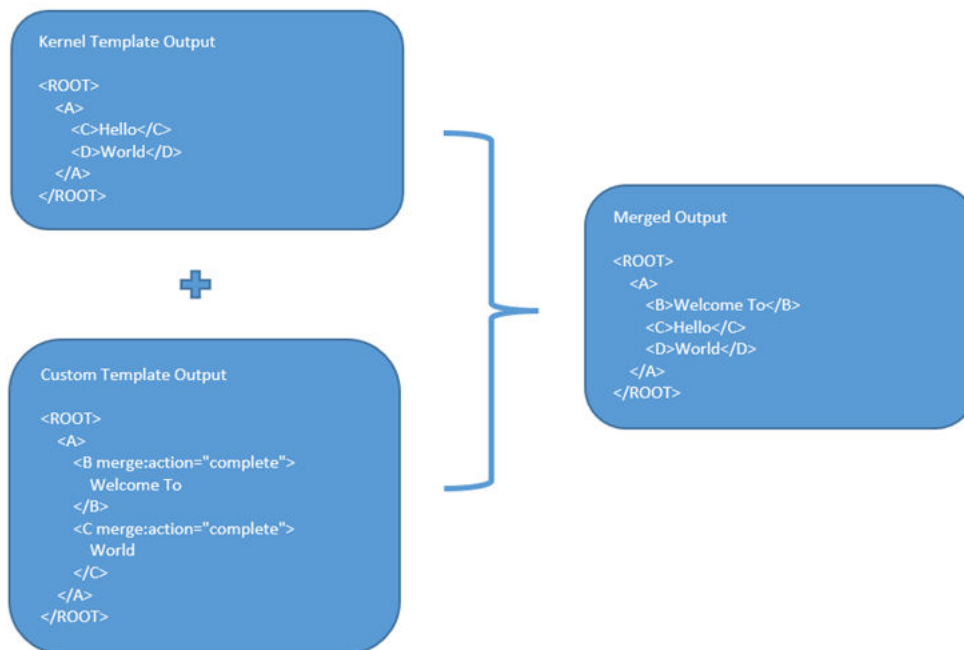
Figure 11-4 Override Action

11.1.4 Complete Action

Copies the patch element only if it does not exist in kernel/mock template.

Syntax: `merge:action='complete'`

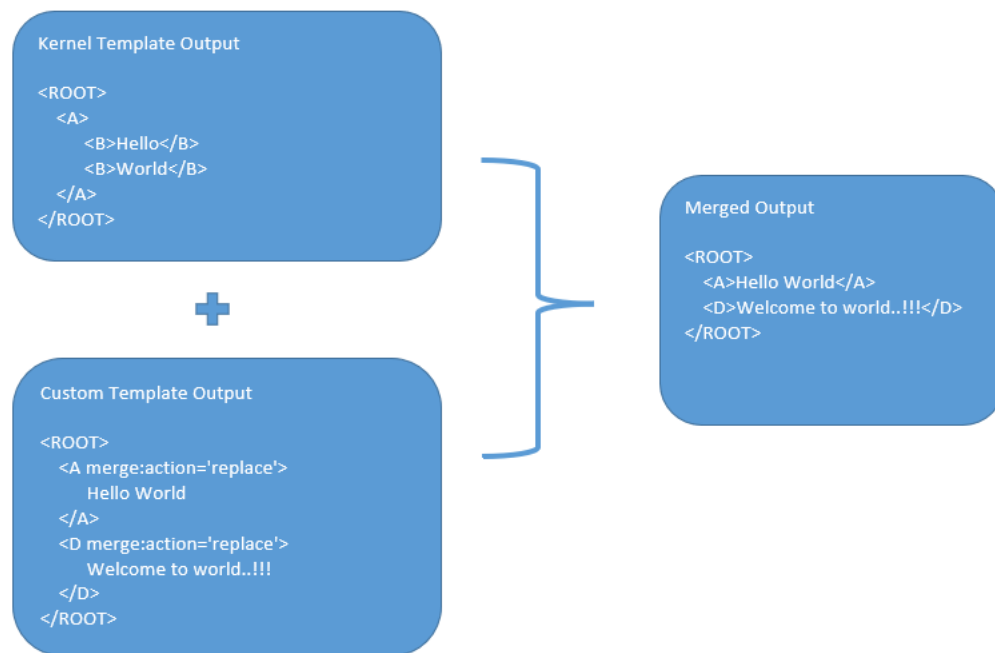
Figure 11-5 Complete Action



11.1.5 Replace Action

Replaces the original element with the patch element or creates the element if it does not exist in kernel/mock template.

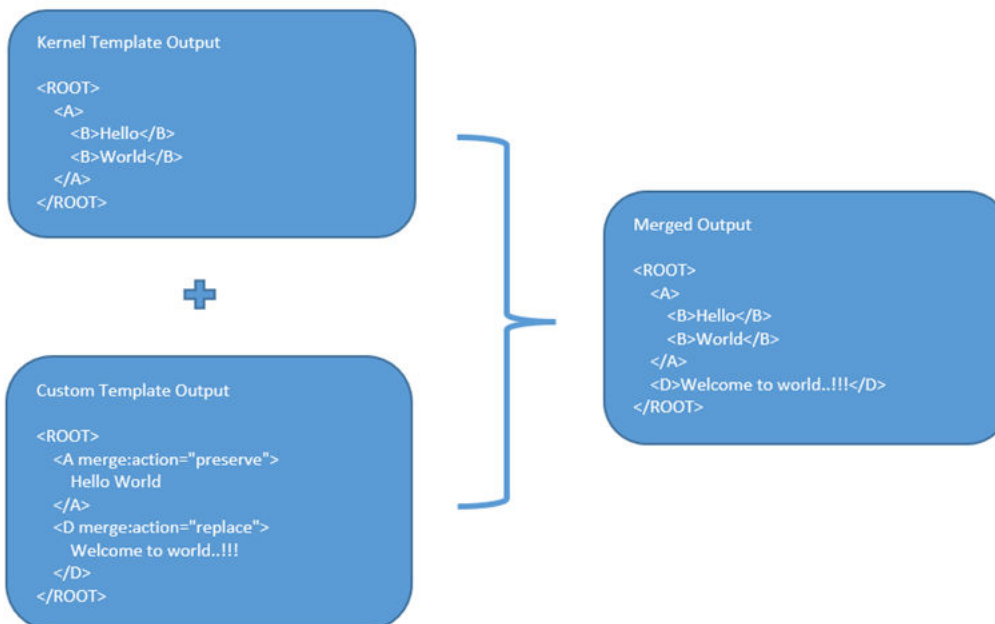
Syntax: `merge:action='replace'`

Figure 11-6 Replace Action

11.1.6 Preserve Action

No replace action is performed on the original element.

Syntax: `merge:action='preserve'`

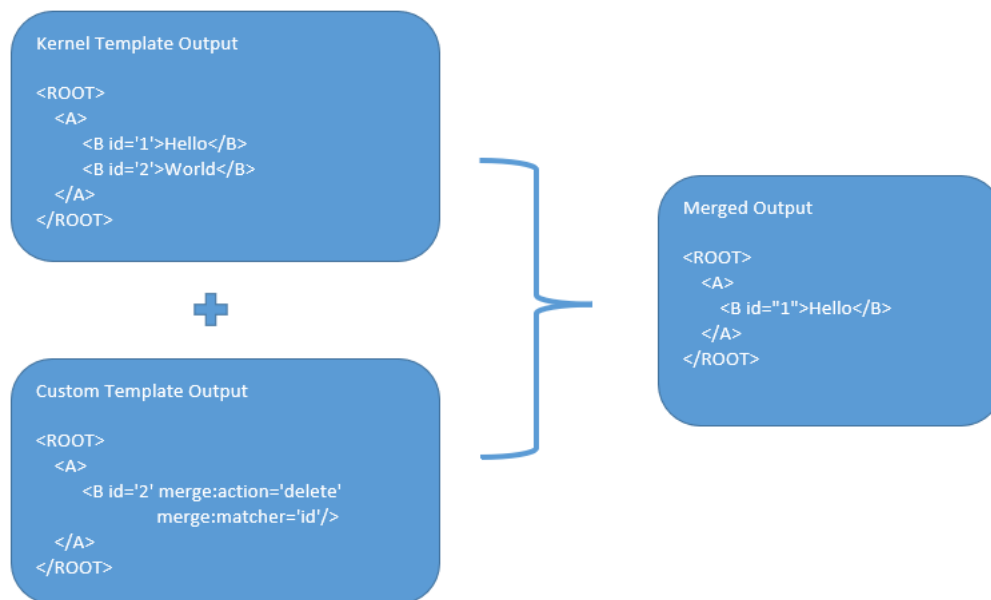
Figure 11-7 Preserver Action

11.1.7 Delete Action

Deletes the original element.

Syntax: `merge:action='delete'`

Figure 11-8 Delete Action



Audit Purging / Archiving

Purging/Archiving of audit data is done on the basis of retention policy.

This process uses plato-batch-server for Job execution.

The following steps are required to schedule purging/archiving job (routingHubAuditRetentionJob) once cmc-obrh-services and plato-batch-server is UP and RUNNING:

1. On **Home** screen, click **Task Management**. Under **Task Management** menu, click **Configure Tasks**.
2. Select **Schedule** option.
3. Select **Task Name** as routingHubAuditRetentionJob and **Task Trigger Name** will be generated automatically.
4. Specify the CRON expression to daily EOD.

In order to resolve table space issue of Audit table (CMC_RH_AUDIT_EVENT_LOG), Database Management Team has to configure database job which should be triggered after routingHubAuditRetentionJob. This database job can be redefining the table (DBMS_REDEFINITION) after purging/archiving is done or other approach. So, the unused LOB segment space can be released. And in order to resolve table space issue of Audit history table (CMC_RH_AUDIT_EVENT_LOG_HISTORY), Database Management Team has to configure database job to truncate table periodically basis.

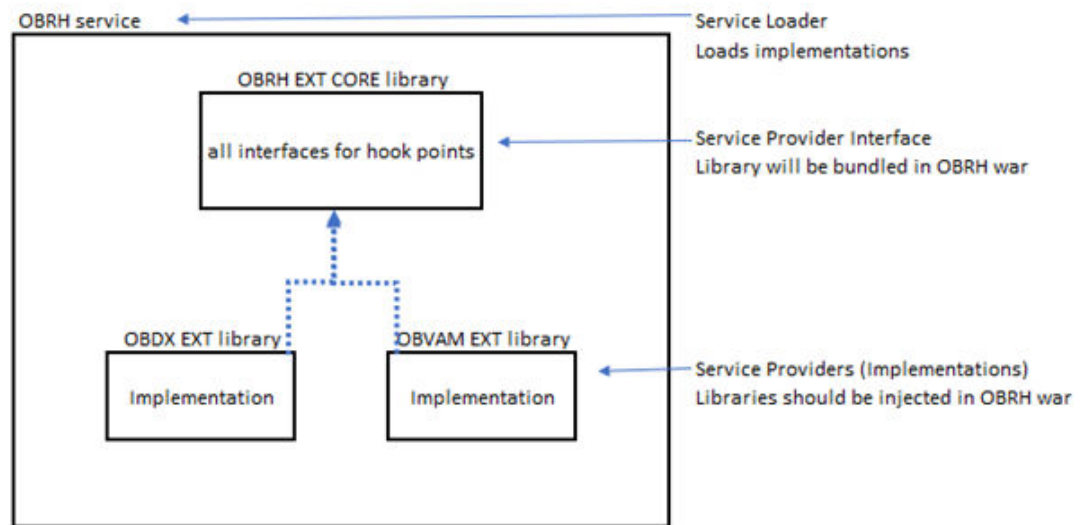
13

Hookpoints

Service Provider Interface (SPI) mechanism is used to make Routing Hub more extensible. SPI provides an option to extend interfaces without modifying the core application. All we need to do is provide a new implementation of the service that follows certain rules and plug it into the application.

Using the SPI mechanism, the application will load the new implementation and work with it.

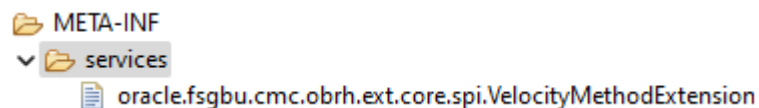
Figure 13-1 Hookpoints



Below steps to follow for specifying implementation:

- Extract the "cmc-obrh-ext-core-x.y.z.jar" (Extension Core) library from "cmc-obrh-service-x.y.z.war" artifact.
- Create library by consuming extension core library of Routing Hub.
- Specify the required implementations.
- In order to get it discovered, provider configuration file has to be created under "META-INF" as below:

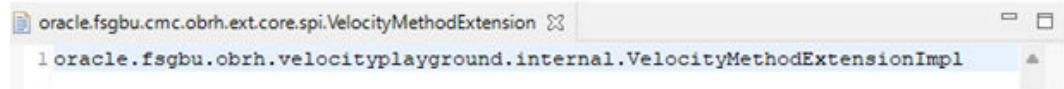
Figure 13-2 META-INF



Here, file name will be "PackageName.InterfaceName".

- Specify the implementation in above file as below:

Figure 13-3 Implementation



Here, file name will be "PackageName.InterfaceName".

- Inject the implementation library in "cmc-obrh-service-x.y.z.war" artifact.
- [Available Interfaces](#)

13.1 Available Interfaces

VelocityMethodExtension

This interface is for using existing client-specific logic in velocity templates.

In order to use it in velocity templates, processInput method needs to be called.

Syntax: \$custom.processInput(String implementationName, Object... args)

Here, implementationName is mandatory if multiple implementations are present.

SoapOutInterceptorExtension

This interface is for processing the unmarshalled message data.

Note

During PRE_LOGICAL and PRE_LOGICAL ENDING phases, the interceptions will be made automatically if the implementation is present.

SocketMessageHandlerExtension

This interface is for manipulating inbound and outbound socket messages.

Currently, supported socket implementations are Netty and JAVA socket and supported message types are string and hexstring.

CustomAuditEventExtension

This interface is for implementing the custom audit layer instead of using the pre-defined one.

14

Multipart Request

This topic provides the sample template for the multipart request

Example 14-1 Multipart Request

```
[
  {
    "key": "file",
    "type": "FILE",
    "value": "$body.files.get(0).file"
  },
  {
    "key": "name",
    "type": "TEXT",
    "value": "$body.name.get(0).content"
  }
]
```

15

URL Encoded Request

This topic provides the sample template for url encoded request.

Example 15-1 URL Encoded Request

```
{  
  "client_id": "am9obg",  
  "client_secret": "am9obmRvZQ"  
}
```

Note

Body type should be RAW.

16

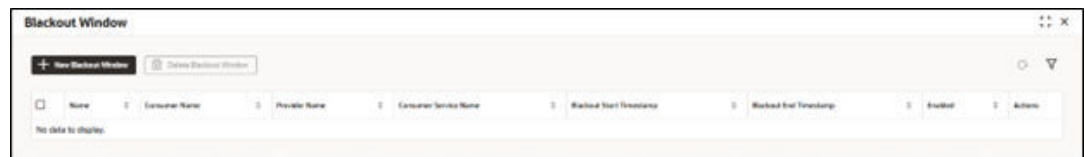
Blackout Window

This topic describes the systematic instructions to perform the configuration.

End-user can configure the blackout windows of providers or consumer services to block the routing hub requests for the specific period.

1. From **Home** screen, click **Core Maintenance**. Under **Core Maintenance**, click **Interconnect**.
2. Under **Interconnect**, click **Routing Hub**. Under **Routing Hub**, click **Blackout Window**.
The **Blackout Window** screen is displayed.

Figure 16-1 Blackout Window

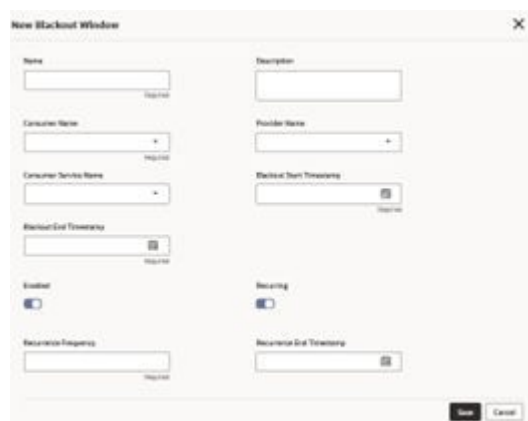


New Blackout Window

Users can create blackout windows.

3. Click **New Blackout Window**.
The **New Blackout Window** screen is displayed.

Figure 16-2 New Blackout Window



4. Specify the fields on the **New Template** screen.

Table 16-1 New Blackout Window - Field Description

Field	Description
Name	Specify the name of the blackout. Note: - Enter 0 to maximum of 255 characters. - No numeric value at beginning and no space allowed.
Description	Specify the description. Note: - Enter 0 to maximum of 1000 characters. - No space allowed at beginning or ending of the characters.
Consumer Name	Select the consumer name for which blackout is applicable.
Provider Name	Select the provider name for which blackout is applicable.
Consumer Service Name	Select the consumer service name for which window is applicable.
Blackout Start Timestamp	Effective start date and time for the scheduled blackout.
Blackout End Timestamp	Effective end date and time for the scheduled blackout.
Enabled	Toggle to enable or disable the blackout window.
Recurring	Toggle to enable or disable the recurrence of blackout window.
Recurrence Frequency	Specify the frequency for the blackout to repeat. Note: Frequency has to be mentioned in terms of days.
Recurrence End Timestamp	Effective end date and time for the recurrence

- Click **Save** to save the details.

View / Edit Blackout Window

The user can view or modify blackout window.

- Click **Edit** icon.

The **Edit Blackout Window** is displayed.

Figure 16-3 Edit Blackout Window

The screenshot shows the 'Edit Blackout Window' dialog box with the following details:

- Name:** Scheduled_Maintenance
- Description:** Scheduled maintenance of oracle_provider
- Consumer Name:** Oracle_Consumer
- Provider Name:** Oracle_Provider
- Consumer Service Name:** (empty)
- Blackout Start Timestamp:** 9/16/2025, 12:00 AM
- Blackout End Timestamp:** 9/18/2025, 12:00 AM
- Enabled:** ☒
- Recurring:** ☒
- Recurrence Frequency:** 7
- Recurrence End Timestamp:** (empty)
- Buttons:** Save, Cancel

- Click **Save** to save the modified blackout window details.

Delete Blackout Window

The user can delete the blackout window.

8. Click **Delete Blackout Window** button.

The **Blackout Window** gets deleted.

17

Configuration

This topic describes the systematic instructions to perform the configuration.

End-user can configure the properties w.r.t. monitoring, alert and export.

End-user can configure the same at System level and granular levels such as Consumer, Consumer Service and Routing.

The **Configuration** screen contains the following sections.

- **Monitoring** - It has the features required by the breaker to store and aggregate the result of calls.
- **Alert** - It has the features required for transitioning circuit breaker.
- **Email Alert** - It has the feature required for mail notification.
- **Export** - It has the properties that are required for exporting the configuration JSON and will be visible at system level only.

1. On **Home** screen, click **Core Maintenance**. Under **Core Maintenance**, click **Interconnect**.
2. Under **Interconnect**, click **Routing Hub**. Under **Routing Hub**, click **Configuration**.

The **Configuration** screen is displayed.

Figure 17-1 Configuration

The screenshot shows a web-based configuration interface titled "Configuration". It has a sidebar on the left with a dropdown menu set to "Route shutdown properties". The main content area contains several input fields: "Window Size" with a value of "100", "Minimum number of calls" with a value of "100", "Failure Rate Threshold" with a dropdown set to "50%", and "Email Addresses" with an empty text box. There are also radio buttons for "Count" (selected) and "Type". At the bottom, there are expandable sections for "Export" and "Data Masking", and buttons for "Clear", "Reset", and "Save".

3. On **Configuration** screen, specify the fields.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 17-1 Configuration - Field Description

Field	Description
Window Type	Select the type of the window. The available options are: Count: The count-based sliding window aggregates the outcome of the last N calls (Window Size). Time: The time-based sliding window aggregates the outcome of the calls of the last N seconds (Window Size).
Window Size	Specify the window size to record the outcome of the calls when the circuit breaker is closed. - For Count window type, The window size is N calls. - For Time window type, The window size has N seconds.
Minimum number of calls	Specify the minimum number of calls. For example, if the minimum required number of calls is 10, you need to record at least 10 calls before you can determine the failure rate. If only nine calls are logged, the circuit breaker will not switch to open, even if all nine calls are unsuccessful.
Failure rate threshold	Specify the failure rate threshold in percentage. If the failure rate meets or exceeds the threshold, the breaker opens and begins to short-circuit calls.
Email Addresses	Specify the E-mail address. The user can use semi-colon to add more email addresses. Once the failure rate crosses the Failure rate threshold , a mail is sent to the end-user about the event.
Mark data as factory shipped	Select the toggle to mark the exported configuration JSON as factory shipped JSON. The end-user will not be able to modify or delete the certain data once imported. By default, the toggle is OFF.
Allow data masking	Turn on the toggle to hide sensitive information in request audit messages.
Regex patterns	Specify the regex patterns for identification of sensitive fields. Note : You can group values by using a sub-pattern that is placed inside parentheses ().

Example:

Table 17-2 Configuration - Field Entry Values

Field	Entry Values
Window Type	Count
Window Size	20
Minimum number of calls	10
Failure rate Threshold	50%

Configured properties will result as below:

After 10 (minimum number of calls) calls, routing would get shutdown if 50% (failure rate) of almost last 20 (window size) calls have failed. If the email address property is configured, then the end-user is notified as well.

4. Perform one of the following action:

- a. Click **Clear** to clear all the specified details.
- b. Click **Reset** to reset the details.
- c. Click **Save** to save all the details.

Request Audit - Log

This topic describes the systematic instructions to check the audit log in Oracle Banking Routing Hub.

- 1. On **Home** screen, click **Core Maintenance**. Under **Core Maintenance**, click **Interconnect**.
- 2. Under **Interconnect**, click **Routing Hub**. Under **Routing Hub**, click **Request Audit**.
The **Request Audit - Log** screen is displayed.

Figure 18-1 Request Audit - log

Request Audit

From Timestamp
7/26/2026, 9:56 AM

Request Id

Provider Implementation

User Id

From Timestamp (UTC)
2026-07-26T04:26:00

Consumer

Provider Service

Reference No

To Timestamp
7/27/2026, 9:56 AM

Consumer Service

Transformation

To Timestamp (UTC)
2026-07-27T04:26:00

Provider

Route

Search

Timestamp (UTC)

Request Id

Consumer

Consumer Service

Provider

Provider Implementation

Provider Service

Transformation

Route

Status

User Id

No data to display.

Page 1 of 0 (1 - 0 of 0 items)

- 3. Specify the fields on **Request Audit - log** screen.

Note

The fields marked as **Required** are mandatory.

For more information on fields, refer to the field description table.

Table 18-1 Request Audit - log - Field Description

Field	Description
Request ID	Specify the request ID.
Consumer	Specify the consumer name.
Consumer Service	Specify the consumer service name.
Provider	Specify the provider name.
Provider Implementation	Specify the provider implementation name.
Provider Service	Specify the provider service name.
Transformation	Specify the transformation name.
Route	Specify the route name.
User ID	Specify the user ID.

Table 18-1 (Cont.) Request Audit - log - Field Description

Field	Description
Reference Number	Specify the reference number to track the requests audit. Note: To track by reference number, one has to pass rh-reference-no header in routing hub request
Status	Status field indicates the outcome of the routing hub request with values indicating SUCCESS , FAILURE , or PENDING . Note: SUCCESS signifies that the request was completed successfully. FAILURE signifies that the request was unsuccessful. PENDING signifies that the request is being processed.

- Click the **Search** button to fetch the request audit details.
- Click on the **Request ID** to view the step-by-step execution of request audit details.
The **Request Audit Details** screen is displayed.

Figure 18-2 Request Audit Details

For more information on fields, refer to the field description table.

Table 18-2 Request Audit Details - Field Description

Field	Description
Request ID	Displays the selected request ID.
OBRH Request	Displays the status of Routing Hub request.
Provider Request	Displays the status of provider request.
Provider Response	Displays the status of provider response.
OBRH Response	Displays the status of Routing Hub response.
Timestamp	Displays the date and time.
Message	Displays the message.

Monitoring Dashboard

Monitoring dashboard has been provided to System integrators and IT administrators to review the health of the integrations. It displays data using different type of widgets to help users to assess the performance of integrations and identify the areas that requires attention.

This dashboard requires 'routingHubAuditSummaryJob' job to be executed periodically using plato-batch-server.

Below are steps to schedule the job once cmc-obrh-services and plato-batch-server is UP and RUNNING:

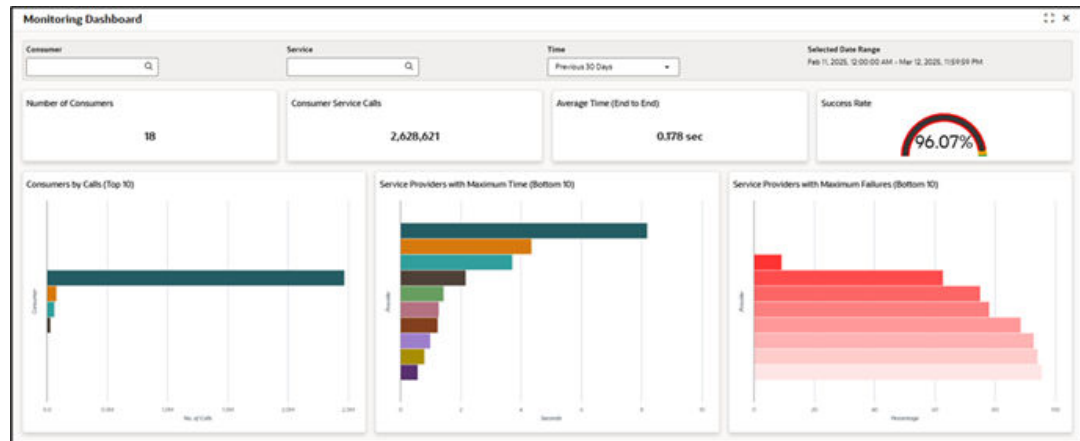
1. On **Home** screen, click **Task Management**. Under **Task Management** menu, click **Configure Tasks**.
2. Select **Schedule** option.
3. Select **Task Name** as routingHubAuditRetentionJob and **Task Trigger Name** will be generated automatically.
4. Specify the CRON expression to daily EOD.

To resolve table space issue of Audit summary table, (CMC_RH_AUDIT_SUMMARY), Database Management Team has to configure database job to truncate table periodically basis.

Note

Monitoring Dashboard will not be available if audit logs are turned off.

1. On **Home** screen, click **Core Maintenance**. Under **Core Maintenance**, click **Interconnect**.
2. Under **Interconnect**, click **Routing Hub**. Under **Routing Hub**, click **Monitoring Dashboard**.
3. Under **Interconnect**, click **Routing Hub**. Under **Routing Hub**, click **Monitoring Dashboard**.

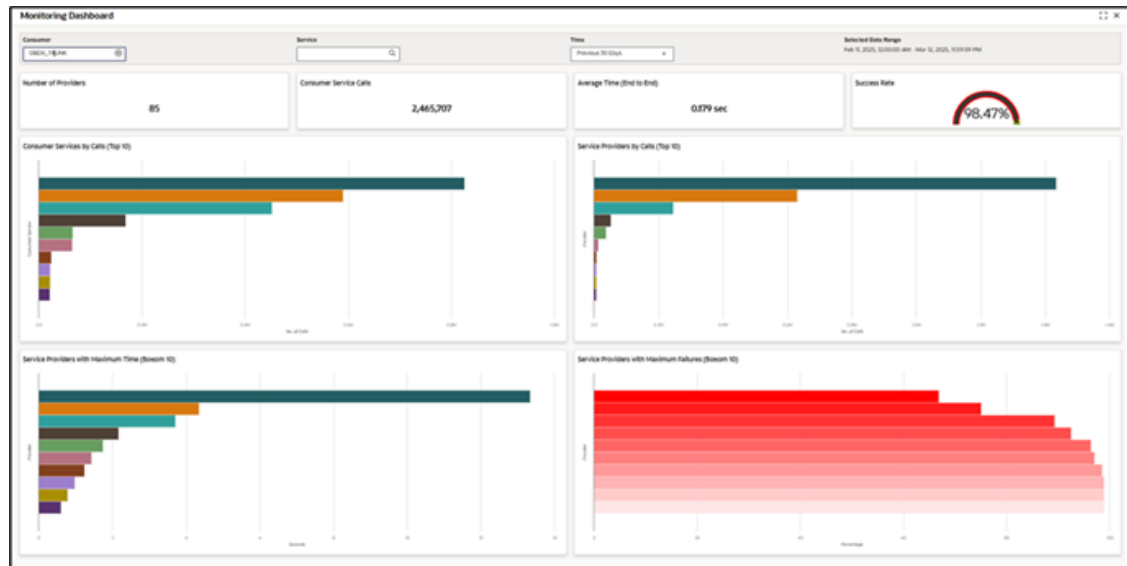
Figure 19-1 Monitoring Dashboard

- **Number of Consumers:** This widget displays total number of consumers configured in the Oracle Banking Routing Hub.
- **Consumer Service Calls:** This widget displays total number of consumer services requested during chosen period.
- **Average Time (End to End):** This widget displays the average time (in seconds) taken to process successful requests, during chosen period.
- **Success Rate:** This widget provides an indicator of how many successful requests were made during chosen period.
- **Consumers by Calls (Top 10):** This widget provides a graphical display of the top 10 consumers based on requests they have made during chosen period. A link on the bar graph is provided to view further details of the Consumer.
- **Service Providers with Maximum Time (Bottom 10):** This widget provides a graphical display of bottom 10 providers based on the time taken to process requests, during s chosen period.
- **Service Providers with Maximum Failures (Bottom 10):** This widget provides a graphical display of bottom 10 providers based on failed requests, during s chosen period.

Consumer Page

The End-user can navigate to this page by either using the filter option provided on the landing page or by clicking on specific consumer service in “**Consumer Service by Calls (Top 10)**” chart.

Figure 19-2 Consumer Page



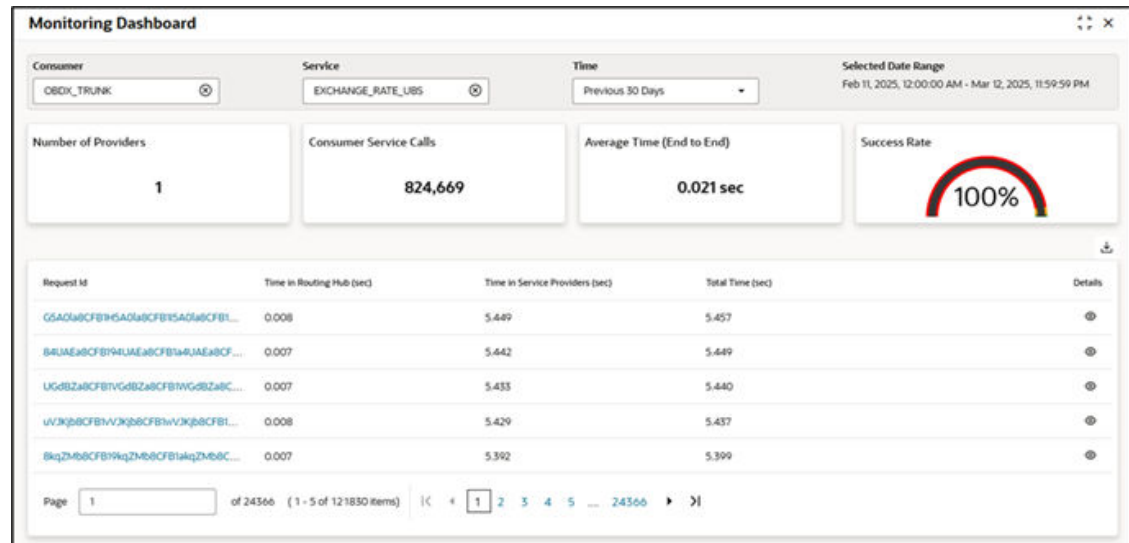
This page displays following information:

- **Number of Providers:** This widget displays the total number of service providers configured in Oracle Banking Routing Hub for the selected consumer.
- **Consumer Service Calls:** This widget displays total number of consumer services requested by the selected consumer during chosen period.
- **Average Time (End to End):** This widget displays the average time (in seconds) taken to process successful requests made by the selected consumer, during chosen period.
- **Success Rate:** This widget provides an indicator of how many successful requests were made by the selected consumer during chosen period.
- **Consumer Services by Calls (Top 10):** This widget provides a graphical display of the top 10 consumers Services during chosen period. A link on the bar graph is provided to view further details of the Consumer Service.
- **Service Providers by Calls (Top 10):** Shows top 10 service providers based on the maximum requests which are requested chosen period.
- **Service Providers with Maximum Time (Bottom 10):** Shows bottom 10 providers based on the maximum time taken to process successful requests which are requested during chosen period.
- **Service Providers with Maximum Failures (Bottom 10):** Shows bottom 10 providers based on the maximum number of failed requests which are requested during chosen period.

Consumer Service Page

The End-user can navigate to this page by either using the filter option provided on the landing page or by clicking on specific consumer service in “**Consumer Service by Calls (Top 10)**” chart.

Figure 19-3 Consumer Service Page

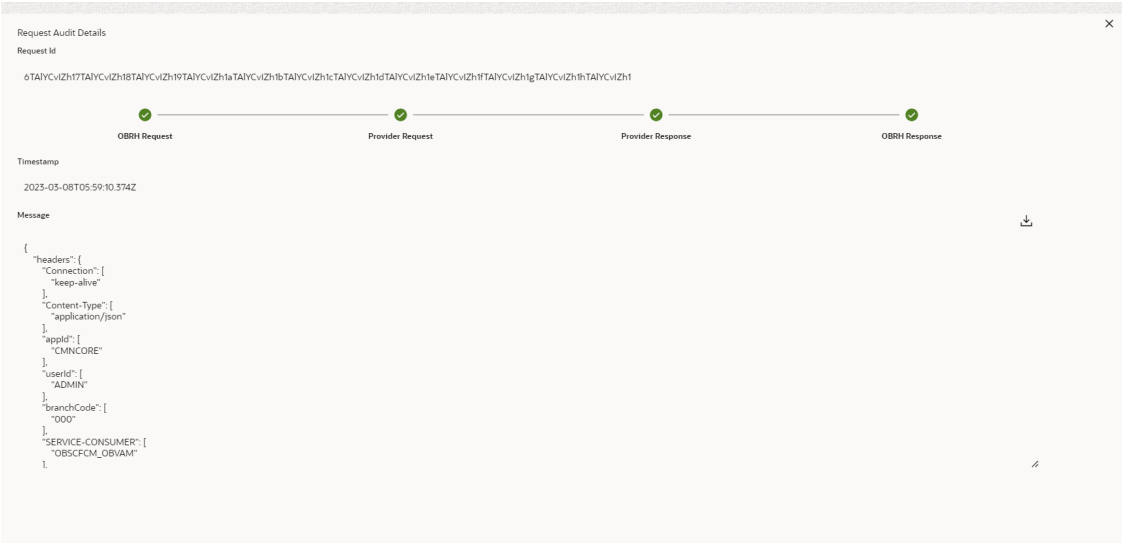


- **Number of Providers:** This widget displays total number of service providers to which this request is routed to complete the integration.
- **Consumer Service Calls:** This widget displays total number of consumer services made during chosen period.
- **Average Time (End to End):** This widget displays the average time taken to process successful requests made during chosen period.
- **Success Rate:** Shows the percentage of successful requests which are made during chosen period.
- **Request Details:** The table displays the list of requests which are requested during chosen period. Following are the details which are provided for each request.

Component Name	Component Type
Request Id	This is system generated reference number for each request. Click on the Request Id displays audit log information of the request.
Time in Routing Hub (Sec)	This field displays the time taken by Routing Hub (in seconds) to route the request between Consumer Service and Providers.
Time in Service Providers (Sec)	This field displays the total time taken by Service provides (in seconds) to process the request.
Total Time (Sec)	This field displays the total time to process the request
Provider Service	Text box
Details	Displays the tabular view of the time taken by individual providers (in case of chaining of the request)

End-user can view request details by clicking on Request Id.

Figure 19-4 Request Audit Details



Component Name	Comments
Number of Providers	Shows total number of service providers.
Consumer Service Calls	Shows total number of consumer services requested during selected time.
Average Time (End to End)	Shows the average time taken to process successful requests which are requested during selected time.
Success Rate	Shows the percentage of successful requests which are requested during selected time.
Request Audit	Shows list of requests which are requested during selected time.

Transformation Type

This topic provides the information about the transformation types.

Velocity

Velocity is a Java-based template engine. It is used to generate XML files, SQL, PostScript, and most other text-based formats.

Note

In Routing Hub, velocity is used to generate JSON and XML files.

Table 20-1 Access request or response body

Access request or response body	
Syntax	<code>\$body.fieldName</code>
Example	<code>\$body.branchCode</code>

Table 20-2 Access request or response headers

Access request or response headers	
Syntax	<code>\$headers["fieldName"][0]</code>
Example	<code>\$headers["branchCode"][0]</code>

Table 20-3 Access response body as string

Access response body as string	
Syntax	<code>\$bodyAsString</code>

Table 20-4 Date Conversion (Routing Hub's custom date conversion)

Date Conversion (Routing Hub's custom date conversion)	
Syntax	<code>\$dateUtil.convert(inputDate, fromPattern, toPattern)</code>
Parameters	<inputdatestring </inputdatestring fromPattern : String toPattern : String
Returns	String
Reference	Date patterns: https://docs.oracle.com/javase/8/docs/api/java/text/SimpleDateFormat.html

Table 20-5 Returns default Value if input value is null or empty

Returns default Value if input value is null or empty	
Syntax	<code>\$custom.defaultvalue(inputValue, defaultValue)</code>
Parameters	<inputvalue :="" object<br=""></inputvalue> defaultValue : String
Returns	Object

Table 20-6 Null Check

Null Check	
Syntax	<code>\$custom.isNull(inputValue)</code>
Parameters	inputValue : Object
Returns	boolean

Table 20-7 Random Number

Random Number	
Syntax	<code>\$mathUtil.getRandom()</code>
Returns	Object of Random class (java.util.Random)

Table 20-8 Xml Tool

Xml Tool	
Syntax	<code>\$xml.methodName()</code>
Reference	https://velocity.apache.org/tools/3.1/apidocs/org/apache/velocity/tools/generic/XmlTool.html

Table 20-9 Date Tool

Date Tool	
Syntax	<code>\$date.methodName()</code>
Reference	https://velocity.apache.org/tools/3.1/apidocs/org/apache/velocity/tools/generic/DateTool.html

Table 20-10 Json Tool

Json Tool	
Syntax	<code>\$json.methodName()</code>
Reference	https://velocity.apache.org/tools/3.1/apidocs/org/apache/velocity/tools/generic/JsonTool.html

Table 20-11 Math Tool

Math Tool	
Syntax	<code>\$math.methodName()</code>
Reference	https://velocity.apache.org/tools/3.1/apidocs/org/apache/velocity/tools/generic/MathTool.html

Table 20-12 Number Tool

Number Tool	
Syntax	<code>\$number.methodName()</code>
Reference	https://velocity.apache.org/tools/3.1/apidocs/org/apache/velocity/tools/generic/NumberTool.html

Table 20-13 Escape Tool

Escape Tool	
Syntax	<code>\$esc.methodName()</code>
Reference	https://velocity.apache.org/tools/3.1/apidocs/org/apache/velocity/tools/generic/EscapeTool.html

Table 20-14 Serialization of object into its equivalent Json representation

Serialization of object into its equivalent Json representation	
Syntax	<code>\$custom.toJson(src)</code>
Parameters	src - Object
Returns	String

Table 20-15 Get additional field's value based on fieldname

Get additional field's value based on fieldname	
Syntax	<code>\$custom.getFieldValueById(jsonString, fieldname)</code>
Parameters	<pre>jsonString : String fieldname : String</pre>
Returns	String

Table 20-16 Get list of additional fields based on fieldname prefix

Get list of additional fields based on fieldname prefix	
Syntax	<code>\$custom.getAdditionalFieldSetByType(jsonString, prefixval)</code>
Parameters	<pre>jsonString - String prefixval - String</pre>

Table 20-16 (Cont.) Get list of additional fields based on fieldname prefix

Get list of additional fields based on fieldname prefix	
Returns	List<AdditionalAttributes>

Table 20-17 XML parsing

XML parsing	
Syntax	\$custom.parseXml(xmlString)
Parameters	xmlString : String
Returns	Object

Table 20-18 JSON parsing

JSON parsing	
Syntax	\$custom.parseJson(jsonString)
Parameters	jsonString : String
Returns	Object

Table 20-19 Get expiry time from token of expiry time

Get expiry time from token of expiry time	
Syntax	\$custom.getExpiryTime(token) \$custom.getExpiryTime(token, expiryTimeField)
Parameters	token : String expiryTimeField : String (Default value: exp)
Returns	String

Table 20-20 Base64 encoding with padding option

Base64 encoding with padding option	
Syntax	\$custom.encodeToBase64(input,paddingFlag)
Parameters	input : String / Byte array paddingFlag : Boolean
Returns	String

Table 20-21 Generate client assertion

Generate client assertion	
Syntax	<pre> \$custom.generateClientAssertion(clientId, kId) \$custom.generateClientAssertion(clientId, kId, validitySeconds) \$custom.generateClientAssertion(clientId, kId, validitySeconds, keyAlias) \$custom.generateClientAssertion(clientId, kId, validitySeconds, keyAlias, algorithm) \$custom.generateClientAssertion(clientId, kId , validitySeconds, keyAlias, algorithm, tokenEndpointUrl) </pre>
Parameters	<pre> clientId : String kId : String validitySeconds : Integer (Default value: 300) keyAlias : String algorithm : String (Default value: RS256) tokenEndpointUrl : String </pre>
Returns	String

- If issue occurred with hyphen in velocity template of Request or Response Transformation, then use get method.

Example:

```

<FCUBS_BODY>
  <Customer-IO>
    <CUSTNO>003942</CUSTNO>
  </Customer-IO>
</FCUBS_BODY>

```

If `$in.FCUBS_BODY.Customer-IO.CUSTNO` does not work ,
use `$in.FCUBS_BODY.get("Customer-IO").CUSTNO` to get customer number.

XSLT

XSLT is a language for transforming XML documents into other XML documents, or other formats such as HTML for web pages, plain text or XSL formatting objects, which may subsequently be converted to other formats, such as PDF, PostScript and PNG.

Note

In Routing Hub, XSLT is used to transform arbitrary XML to JSON.

JSLT

JSLT is a complete query and transformation language for JSON.

21

Configuration Scenarios

- [Custom Authentication](#)
This topic describes how to configure custom authentication in Routing Hub.
- [Preserve Routing Configuration](#)
(Required) <Enter a short description here.>
- [Removal of cached token](#)
This topic describes how to remove a cached authentication token in Routing Hub.
- [Certificate Upload](#)
This topic describes how to upload certificates for secure authentication and communication in Routing Hub.

21.1 Custom Authentication

This topic describes how to configure custom authentication in Routing Hub.

Purpose

Currently, routing hub offers few different authentication options.

However, these options are not flexible enough to handle every authentication scenario.

To address this, we have introduced a new option: Custom Authentication.

How it works

User simply need to specify the token endpoint details in routing hub. This ensures that routing hub can seamlessly connect to and communicate with your authentication configuration.

How it is different from Chaining?

You can use Chaining, where the token endpoint transformation is created directly inside the consumer service, but it does not support token cache management. This means every request hits your token endpoint first, regardless of the token's expiry time.

Custom Authentication solves this problem by treating the token endpoint as a separate consumer service and performing token cache management. This prevents unnecessary token endpoint hits.

Steps for Maintenance

1. Create an implementation specifically for Token Endpoint.
2. Create consumer service for token integration and toggle ON the "Custom Authentication" flag.
3. Create transformation and routing for token integration.
(Note: Response transformation template should be kept empty if token field is and expiry time field is).
4. Change the authentication type of implementation to Custom Auth and select the token integration's consumer service in ConsumerService drop-down.

(Here, implementation will be referring the actual service endpoints/operations of provider)

Sample Configuration

```
Token_CS (Consumer Service) (Custom Authentication flag -> true)
    Provider (Service Provider)
        Auth_Impl (Implementation) (Authentication Type -> None/Basic)

FetchBalance_CS (Consumer Service)
    Provider (Service Provider)
        Bal_Impl (Implementation) (Authentication Type -> Custom Auth &
Consumer Service -> Token_CS
```

How to maintain sensitive fields?

Environment variables need to be created for all the fields which are sensitive in nature. In environment variables, we have a "Sensitive" flag which will ensure that the values are not stored as plaintext in routing hub.

21.2 Preserve Routing Configuration

(Required) <Enter a short description here.>

In order to preserve the existing routing configuration, user need to toggle ON the "Retain Configuration" flag in Consumer Service screen.

Impact on Transformation

1. **Case:** Retain Configuration flag is OFF.
Existing transformations that are not present in the JSON file will be removed.
2. **Case:** Retain Configuration flag is ON.
Existing transformations will be preserved.

Note

In both cases, new transformations will be added or existing ones will be updated based on the JSON file. "Transformation Name" is used as the key for these checks.

Impact on Routing

1. **Case:** Retain Configuration flag is OFF.
Existing routings that are not present in the JSON file will be removed.
2. **Case:** Retain Configuration flag is ON.
Existing routings will be preserved. Kernel JSON will not append or overwrite the existing routing configuration.

Additional Changes (if applicable)

1. **Case:** Requirement to update the kernel template in an existing transformation.
User need to maintain a new transformation.
2. **Case:** Requirement to integrate with a provider other than the qualified provider.
User need to maintain a new provider.

21.3 Removal of cached token

This topic describes how to remove a cached authentication token in Routing Hub.

Token caching is enabled by default. To explicitly remove the cached token, users need to simply re-save the implementation.

21.4 Certificate Upload

This topic describes how to upload certificates for secure authentication and communication in Routing Hub.

Certificate Upload feature allows users to configure secure communication parameters connecting with the provider.

By default, the Use Custom Certificates flag is toggled off. When enabled, it forces the Routing Hub to utilize explicitly uploaded certificates instead of relying on default system certificates.

Additionally, the SSL Protocol setting dictates the communication security layer by enforcing an SSL/TLS protocol version supported by the provider, with SSL set as the default value.

The Certificates subsection manages the security credentials necessary for establishing trusted connections:

The Client Certificate is used for client authentication and supports PFX and P12 formats, which require a passphrase alongside an optional alias.

The Server Certificate is used to verify the identity of the remote server and supports PEM and CRT formats.

22

FAQ

1. Outbound calls are slow during high load
This may be caused by connection handshake overhead. If a new handshake is performed for every request instead of reusing existing connections, performance will degrade significantly under high load.

HTTP connection pooling must be enabled and configured to eliminate the overhead of repeated handshakes using below properties

Table 22-1 Parameters

Parameters	Default	Values
obrh.rest.connectionpool.enabled	false	true / false
obrh.rest.connectionpool.totalConnectionCount	20	<POOL_TOTAL_CONN_COUNT>
obrh.rest.connectionpool.maxConnectionCountPerRoute	2	<POOL_MAX_CONN_PER_ROUTE>
obrh.rest.connectionpool.timeToLive.ms	-1	<POOL_TTL>

2. Default request auditing approach causing performance degradation under high load
Transition to Kafka or JMS auditing to eliminate the overhead of the audit API calls that occur with the default approach using property obrh.audit.type.
3. Thread Starvation in the TaskExecutor Pool
A small thread pool causes blocking during high load, where routing hub integration calls wait for a free thread, degrading overall system throughput.

This can be addressed by configuring the thread pool using below properties:

Table 22-2 Tomcat Deployment

Parameters	Default	Values
obrh.taskexecutor.corepoolsize	50	<CORE_POOLSIZE>
obrh.taskexecutor.maxpoolsize	50	<MAX_POOLSIZE>
obrh.taskexecutor.queuecapacity	100	<QUEUE_CAPACITY>

4. Request Auditing (Kafka Approach) fails for messages exceeding the default 1 MB size limit.

This requires to increase request size with following steps:

- a. Increase the max request size for cmc-obrh-services (Client)
Add the below key with value in properties table for cmc-obrh-services application.

Key: spring.kafka.producer.properties.max.request.size

Value: <MAX_SIZE_IN_BYTES>

Note

"cmc-obrh-service" service restart is required.

- b. Increase the max request size for Kafka (Server)
Execute the below command to increase the size only for routing hub audit topic.

SASL_SSL protocol

```
sh kafka-configs --bootstrap-server <KAFKA_HOST>:<KAFKA_PORT> \  
--alter --entity-type topics \  
--entity-name rh-audit-message \  
--add-config max.message.bytes=<MAX_SIZE_IN_BYTES> \  
--command-config <CLIENT_SSL_PROPERTIES_FILE_PATH>
```

PLAINTEXT protocol

```
sh kafka-configs --bootstrap-server <KAFKA_HOST>:<KAFKA_PORT> \  
--alter --entity-type topics \  
--entity-name rh-audit-message \  
--add-config max.message.bytes=<MAX_SIZE_IN_BYTES>
```

Note

No Kafka-Zookeeper restart is required.

23

Error Codes

This topic describes the error codes used in Routing Hub.

Table 23-1 List of Error Codes

Error Code	Description
CMC-OB RH-001	Error is raised when details are already present for the key fields.
CMC-OB RH-003	Error is raised when details to be fetched, modified or deleted does not exist.
CMC-OB RH-004	Error is raised when details to be deleted does not exist (id is missing)
CMC-OB RH-009	Error is raised when details to be retrieved for data loading on screens does not exist.
CMC-OB RH-012	Error is raised when routing hub integration JSON or swagger import is failed.
CMC-OB RH-015	Error is raised when route state cannot be changed to Start state as Consumer Service / Provider is inactive.
CMC-OB RH-016	Error is raised when attribute is already in use by routes.
CMC-OB RH-020	Error is raised when routing hub integration JSON is failed to import.
CMC-OB RH-022	Error is raised when MissingServletRequestParameterException or ConstraintViolationException.
CMC-OB RH-027	Error is raised when consumer service is already in use by implementation as custom authentication service.
CMC-OB RH-028	Error is raised when secure store API is failed to process the request.
CMC-OB RH-029	Error is raised when file does not exist or has permission issue.
CMC-OB RH-030	Error is raised when secure store response does not have details.
CMC-OB RH-031	Error is raised when connection got timed out for IDCS endpoint.
CMC-OB RH-032	Error is raised when IDCS failed to process the request.
CMC-OB RH-033	Error is raised when secure store API is failed to update attribute details.
CMC-OB RH-034	Error is raised when certificate is not present with the specified alias at service startup.
CMC-OB RH-035	Error is raised when key store is failed to load at service startup.
CMC-OB RH-036	Error is raised when trust store is failed to load at service startup.
CMC-OB RH-037	Error is raised when key store is failed to load at service startup.
CMC-OB RH-038	Error is raised when encrypted text fails to decrypt.
CMC-OB RH-039	Error is raised when plain text fails to encrypt.
CMC-OB RH-040	Error is raised when recurrence frequency is not configured for blackout window.
CMC-OB RH-041	Error is raised when blackout window is not associated with a provider or consumer service.
CMC-OB RH-042	Error is raised when integration request is rejected due to blackout window.
CMC-OB RH-043	Error is raised when there is connection issue or configuration issue with JMS broker.
CMC-OB RH-044	Error is raised when JMS connection failed to initialize.

Table 23-1 (Cont.) List of Error Codes

Error Code	Description
CMC-OB RH-045	Error is raised when there is connection issue or configuration issue with JMS broker.
CMC-OB RH-046	Error is raised when message body is missing for Kafka.
CMC-OB RH-047	Error is raised when the request sending the message is interrupted while waiting.
CMC-OB RH-048	Error is raised when there is connection issue with kafka broker.
CMC-OB RH-049	Error is raised when connection got timed out for kafka broker.
CMC-OB RH-050	Error is raised when connection got timed out for provider's WSDL URL.
CMC-OB RH-051	Error is raised when WSDL URL is incorrect or unreachable.
CMC-OB RH-052	Error is raised when the SOAP request message is malformed.
CMC-OB RH-053	Error is raised when token endpoint has returned malformed response.
CMC-OB RH-054	Error is raised when token endpoint is failed to process the request.
CMC-OB RH-055	Error is raised when connection got timed out for token endpoint.
CMC-OB RH-056	Error is raised when the request payload for the token endpoint is malformed.
CMC-OB RH-057	Error is raised when implementation information is missing in routing hub integration JSON file.
CMC-OB RH-058	Error is raised when transformation information is missing in routing hub integration JSON file.
CMC-OB RH-059	Error is raised when provider service information is missing in routing hub integration JSON file.
CMC-OB RH-060	Error is raised when consumer information is missing in routing hub integration JSON file.
CMC-OB RH-061	Error is raised when provider information is missing in routing hub integration JSON file.
CMC-OB RH-062	Error is raised when consumer JSON file import is attempted at sections other than consumer section.
CMC-OB RH-063	In case of ZIP, Error is raised when environment variable JSON file import is attempted at sections other than consumer and environment variable sections. In case of JSON, Error is raised when environment variable JSON file import is attempted at sections other than environment variable section.
CMC-OB RH-064	In case of ZIP, Error is raised when provider JSON file import is attempted at sections other than consumer, provider and consumer service sections. In case of JSON, Error is raised when provider JSON file import is attempted at sections other than provider section.
CMC-OB RH-065	In case of ZIP, Error is raised when implementation JSON file import is attempted at sections other than consumer, provider, consumer service and implementation sections. In case of JSON, Error is raised when implementation JSON file import is attempted at sections other than implementation section.
CMC-OB RH-066	In case of ZIP, Error is raised when consumer service JSON file import is attempted at sections other than consumer, provider and consumer service sections. In case of JSON, Error is raised when consumer service JSON file import is attempted at sections other than consumer service section.

Table 23-1 (Cont.) List of Error Codes

Error Code	Description
CMC-OB RH-067	In case of ZIP, Error is raised when transformation JSON file import is attempted at sections other than consumer, provider, consumer service and transformation sections. In case of JSON, Error is raised when transformation JSON file import is attempted at sections other than transformation section.
CMC-OB RH-068	Error is raised when details of multiple consumers are present in consumer JSON file.
CMC-OB RH-069	Error is raised when route information is missing in consumer and consumer service JSON files.
CMC-OB RH-070	Error is raised when consumer name is missing in JSON file while processing it.
CMC-OB RH-071	Error is raised when provider API specification is not WSDL and Swagger.
CMC-OB RH-072	Error is raised when swagger specification fails to process or download.
CMC-OB RH-073	Error is raised when the JSON file could not be processed.
CMC-OB RH-074	Error is raised when request payload is missing in multipart request.
CMC-OB RH-075	Error is raised when binary data is missing in request.
CMC-OB RH-076	Error is raised when serialization of request body is failed for outbound REST request.
CMC-OB RH-077	Error is raised when template evaluation is failed.
CMC-OB RH-078	Error is raised when template evaluation is failed.
CMC-OB RH-079	Error is raised when template evaluation is failed.
CMC-OB RH-080	Error is raised when template evaluation is failed for path parameter.
CMC-OB RH-081	Error is raised when implementation is not available for velocity method extension.
CMC-OB RH-082	Error is raised when implementation name is missing while calling the velocity hookpoint.
CMC-OB RH-083	Error is raised when WSDL import failed due to connection issue.
CMC-OB RH-084	Error is raised when WSDL import failed to process.
CMC-OB RH-085	Error is raised when malformed url received.
CMC-OB RH-086	Error is raised when JSON merging fails.
CMC-OB RH-087	Error is raised when retrieving the request audit data failed.
CMC-OB RH-088	Error is raised when export type is not JSON for exporting the integration details.
CMC-OB RH-089	Error is raised when I/O operation failed or interrupted while processing WSDL or audit summary.
CMC-OB RH-090	Error is raised when consumer service has no configured route to process the request.
CMC-OB RH-091	Error is raised when route condition is not satisfied.
CMC-OB RH-092	Error is raised when route could not be added due to a configuration issue.
CMC-OB RH-093	Error is raised when route could not be removed.
CMC-OB RH-094	Error is raised when provider request is failed.
CMC-OB RH-095	Error is raised when template evaluation is failed for header configured in response header transformation.
CMC-OB RH-096	Error is raised when deserialization of JSON message body failed while processing transformation.

Table 23-1 (Cont.) List of Error Codes

Error Code	Description
CMC-OB RH-097	Error is raised when configured path parameter has no value.
CMC-OB RH-098	Error is raised when template evaluation is failed for query parameter.
CMC-OB RH-099	Error is raised when template evaluation is failed for header configured in routing.
CMC-OB RH-100	Error is raised when template evaluation is failed for header configured in transformation.
CMC-OB RH-101	Error is raised when route is not started.
CMC-OB RH-102	Error is raised when route could not be stopped.
CMC-OB RH-103	Error is raised when route could not be started due to configuration issue.
CMC-OB RH-104	Error is raised when route is stopped.
CMC-OB RH-105	Error is raised when consumer name is incorrect in dispatch or template evaluation request.
CMC-OB RH-106	Error is raised when consumer service name is incorrect in dispatch or template evaluation request.
CMC-OB RH-107	Error is raised when connection got timed out for provider endpoint.
CMC-OB RH-108	Error is raised when provider endpoint is failed to process the request.
CMC-OB RH-109	Error is raised when consumer service information is missing in routing hub integration JSON file.
CMC-OB RH-110	Error is raised when user is not authorized for outbound OBMA based direct provider calls.
CMC-OB RH-111	Error is raised when consumer name header is missing in dispatch or template evaluation request.
CMC-OB RH-112	Error is raised when consumer service name header is missing in dispatch or template evaluation request.
CMC-OB RH-113	Error is raised when transformation name header is missing in template evaluation request.
CMC-OB RH-114	Template is blank.
CMC-OB RH-115	Error is raised when transformation does not exist for specified transformation name for template evaluation request.
CMC-OB RH-116	Error is raised when name is missing.
CMC-OB RH-117	Error is raised when request audit type is missing.
CMC-OB RH-118	Error is raised when factory shipped flag is missing.
CMC-OB RH-119	Error is raised when maximum length of name is exceeded.
CMC-OB RH-120	Error is raised when maximum length of description is exceeded.
CMC-OB RH-121	Error is raised when value of request audit type is invalid.
CMC-OB RH-122	Error is raised when value of factory shipped flag is invalid.
CMC-OB RH-123	Error is raised when request audit flag is missing.
CMC-OB RH-124	Error is raised when value of request audit flag is invalid.
CMC-OB RH-125	Error is raised when custom authentication flag is missing.
CMC-OB RH-126	Error is raised when value of custom authentication flag is invalid.
CMC-OB RH-127	Error is raised when attribute name is missing.
CMC-OB RH-128	Error is raised when attribute value is missing.
CMC-OB RH-129	Error is raised when value of attribute value type is invalid.
CMC-OB RH-130	Error is raised when maximum length of attribute name is exceeded.
CMC-OB RH-131	Error is raised when attribute value type is missing.

Table 23-1 (Cont.) List of Error Codes

Error Code	Description
CMC-OB RH-132	Error is raised when status is missing.
CMC-OB RH-133	Error is raised when value of status is invalid.
CMC-OB RH-134	Error is raised when mock type is missing.
CMC-OB RH-135	Error is raised when value of mock type is invalid.
CMC-OB RH-136	Error is raised when stop route flag is missing.
CMC-OB RH-137	Error is raised when value of stop route flag is invalid.
CMC-OB RH-138	Error is raised when mock flag is missing.
CMC-OB RH-139	Error is raised when value of mock flag is invalid.
CMC-OB RH-140	Error is raised when value of request body type is invalid.
CMC-OB RH-141	Template type is missing.
CMC-OB RH-142	Error is raised when value of template type is invalid.
CMC-OB RH-143	Error is raised when validation required flag is missing.
CMC-OB RH-144	Error is raised when value of validation required flag is invalid.
CMC-OB RH-145	Error is raised when transformation type is missing.
CMC-OB RH-146	Error is raised when value of transformation type is invalid.
CMC-OB RH-147	Error is raised when sibling order is missing.
CMC-OB RH-148	Error is raised when maximum length of sibling order is exceeded.
CMC-OB RH-149	Error is raised when maximum length of rule expression is exceeded.
CMC-OB RH-150	Route state is missing.
CMC-OB RH-151	Error is raised when value of route state is invalid.
CMC-OB RH-152	Error is raised when auto-shutdown flag is missing.
CMC-OB RH-153	Error is raised when value of auto-shutdown flag is invalid.
CMC-OB RH-154	Error is raised when validation provider flag is missing.
CMC-OB RH-155	Error is raised when value of validation provider flag is invalid.
CMC-OB RH-156	Version is missing.
CMC-OB RH-157	Error is raised when maximum length of version is exceeded.
CMC-OB RH-158	Error is raised when provider type is missing.
CMC-OB RH-159	Error is raised when value of provider type is invalid.
CMC-OB RH-160	Error is raised when encryption required flag is missing.
CMC-OB RH-161	Error is raised when value of encryption required flag is invalid.
CMC-OB RH-162	Error is raised when implementation type is missing.
CMC-OB RH-163	Error is raised when value of implementation type is invalid.
CMC-OB RH-164	Error is raised when maximum length of consumer service name is exceeded.
CMC-OB RH-165	Error is raised when maximum length of hostname is exceeded.
CMC-OB RH-166	Error is raised when maximum length of username is exceeded.
CMC-OB RH-167	Error is raised when maximum length of port number is exceeded.
CMC-OB RH-168	Error is raised when maximum length of service name is exceeded.
CMC-OB RH-169	Error is raised when eureka instance flag is missing.
CMC-OB RH-170	Error is raised when value of eureka instance flag is invalid.
CMC-OB RH-171	Error is raised when authentication type is missing.
CMC-OB RH-172	Error is raised when value of authentication type is invalid.
CMC-OB RH-173	Error is raised when WSDL endpoint usage flag is missing.

Table 23-1 (Cont.) List of Error Codes

Error Code	Description
CMC-OB RH-174	Error is raised when value of WSDL endpoint usage flag is invalid.
CMC-OB RH-175	Error is raised when default implementation flag is missing.
CMC-OB RH-176	Error is raised when value of default implementation flag is invalid.
CMC-OB RH-177	Error is raised when single tenant flag is missing.
CMC-OB RH-178	Error is raised when value of single tenant flag is invalid.
CMC-OB RH-179	Error is raised when value of scheme is invalid.
CMC-OB RH-180	Error is raised when queue broker is missing.
CMC-OB RH-181	Error is raised when value of queue broker is invalid.
CMC-OB RH-182	Error is raised when request-reply pattern is missing.
CMC-OB RH-183	Error is raised when value of request-reply pattern is invalid.
CMC-OB RH-184	Error is raised when request connection factory is missing.
CMC-OB RH-185	Error is raised when maximum length of request connection factory is exceeded.
CMC-OB RH-186	Error is raised when request queue is missing.
CMC-OB RH-187	Error is raised when maximum length of request queue is exceeded.
CMC-OB RH-188	Error is raised when maximum length of response connection factory is exceeded.
CMC-OB RH-189	Error is raised when maximum length of response queue is exceeded.
CMC-OB RH-190	Error is raised when topic name is missing.
CMC-OB RH-191	Error is raised when maximum length of topic name is exceeded.
CMC-OB RH-192	Error is raised when property name is missing.
CMC-OB RH-193	Error is raised when maximum length of property name is exceeded.
CMC-OB RH-194	Error is raised when category name is missing.
CMC-OB RH-195	Error is raised when maximum length of category name is exceeded.
CMC-OB RH-196	Error is raised when entity type is missing.
CMC-OB RH-197	Error is raised when maximum length of entity type is exceeded.
CMC-OB RH-198	Error is raised when maximum length of entity value is exceeded.
CMC-OB RH-199	Error is raised when value of recurring flag is invalid.
CMC-OB RH-200	Error is raised when consumer name is missing.
CMC-OB RH-201	Error is raised when maximum length of consumer name is exceeded.
CMC-OB RH-202	Error is raised when maximum length of provider name is exceeded.
CMC-OB RH-203	Error is raised when maximum length of consumer service name is exceeded.
CMC-OB RH-204	Error is raised when enabled flag is missing.
CMC-OB RH-205	Error is raised when value of enabled flag is invalid.
CMC-OB RH-206	Error is raised when start timestamp is missing.
CMC-OB RH-207	Error is raised when end timestamp is missing.
CMC-OB RH-208	Error is raised when consumer id is missing.
CMC-OB RH-209	Error is raised when consumer service id is missing.
CMC-OB RH-210	Error is raised when provider id is missing.
CMC-OB RH-211	Error is raised when template is missing in common templates screen.
CMC-OB RH-212	Error is raised when common template information is missing in routing hub integration JSON file.

Table 23-1 (Cont.) List of Error Codes

Error Code	Description
CMC-OB RH-213	In case of ZIP, Error is raised when common template JSON file import is attempted at sections other than consumer and common template sections. In case of JSON, Error is raised when common template JSON file import is attempted at sections other than common template section.
CMC-OB RH-214	Error is raised when request transformation template is failed to evaluate for validation provider endpoint.
CMC-OB RH-215	Error is raised when response transformation template is failed to evaluate for validation provider endpoint.
CMC-OB RH-216	Error is raised when multiple default routes exist.
CMC-OB RH-217	Error is raised when provider endpoint is failed to respond in given time.
CMC-OB RH-218	Error is raised when IDCS endpoint is failed to respond in given time.
CMC-OB RH-219	Error is raised when token endpoint is failed to respond in given time.
CMC-OB RH-220	Error is raised when maximum length of implementation URL prefix to strip is exceeded.
CMC-OB RH-221	Error is raised when file could not be generated for the specified content type during the formation of provider request.
CMC-OB RH-222	Error is raised when file could not be generated due to missing content type during the formation of the provider request.
CMC-OB RH-223	Error is raised when required file or content is missing for the provider request.
CMC-OB RH-224	Error is raised when duplicate entries are being configured for the REST endpoint.
CMC-OB RH-225	Error is raised when value of proxy enabled flag is invalid.
CMC-OB RH-226	Error is raised when file does not exist or is blank.
CMC-OB RH-227	Error is raised when "Continue on request timeout" flag is missing.
CMC-OB RH-228	Error is raised when value of "Continue on request timeout" flag is invalid.
CMC-OB RH-229	Error is raised when maximum length of port template is exceeded.
CMC-OB RH-230	Error is raised when template evaluation is failed for host and port.
CMC-OB RH-231	Error is raised when template evaluation is failed for provider parameters.
CMC-OB RH-232	Error is raised when "Retain Configuration" flag is missing.
CMC-OB RH-233	Error is raised when value of "Retain Configuration" flag is invalid.
CMC-OB RH-234	Error is raised when client ID is missing for OAuth client assertion.
CMC-OB RH-235	Error is raised when token endpoint URL is missing for OAuth client assertion.
CMC-OB RH-236	Error is raised when key ID is missing for OAuth client assertion.
CMC-OB RH-237	Error is raised when client certificate is missing.
CMC-OB RH-238	Error is raised when multiple matching client certificates are found.
CMC-OB RH-239	Error is raised when unsupported private key type is used for OAuth client assertion.
CMC-OB RH-240	Error is raised when signing of token is failed.
CMC-OB RH-241	Error is raised when signing algorithm is not compatible with private key for OAuth client assertion.
CMC-OB RH-242	Error is raised when custom trust store is failed to load.
CMC-OB RH-243	Error is raised when custom SSLContext is failed to build.

Oracle Banking Routing Hub VM Arguments

This topic provides information about Oracle Banking Routing Hub VM arguments.

Common Core Managed Server

Table 24-1 CMC-OB RH-SERVICE

Parameters	Default	Values
cmc-obrh-services.server.port	-	<SERVER_PORT>
cmc-obrh-services.server.port	-	<SERVER_PORT>
obrh.db.jndi	-	<CMNCORE_JNDI>
cmc-obrh-services.oic.secretStore.url	-	<OIC_SECRET_STORE_URL>
cmc-obrh-services.audit.retention.days	-	<AUDIT_RETENTION_POLICY_DAYS>
cmc-obrh-services.audit.retention.archival	-	Y / N (Y for archiving and N for purging)

Table 24-2 Enable and configure connection pooling for REST calls

Parameters	Default	Values
obrh.rest.connectionpool.enabled	false	true / false
obrh.rest.connectionpool.totalConnectionCount	20	<POOL_TOTAL_CONN_COUNT>
obrh.rest.connectionpool.maxConnectionCountPerRoute	2	<POOL_MAX_CONN_PER_ROUTE>
obrh.rest.connectionpool.timeToLive.ms	-1	<POOL_TTL>

Table 24-3 Receive routing failure mail notification via plato-alerts-management-service

Parameter	Default	Values
obrh.alerts.enabled	false	true / false

Table 24-4 Change approach for auditing

Parameters	Default	Values
obrh.audit.type	KAFKA	DEFAULT / KAFKA / JMS / LOG / OFF For KAFKA option, cmc-obrh-kafka-consumer service needs to be deployed. For JMS option, cmc-obrh-jms-consumer service needs to be deployed.

Table 24-4 (Cont.) Change approach for auditing

Parameters	Default	Values
obrh.audit.type.log.event	NONE	DISPATCH_REQUEST / DISPATCH_RESPONSE / ROUTE_INVOKE_START / ROUTE_INVOKE_FAILURE / TRANSFORMATION_TEMPLATE_EVAL UATION_START / TRANSFORMATION_TEMPLATE_EVAL UATION_END / TRANSFORMATION_EXTENDED_TEM PLATE_EVALUATION_START / TRANSFORMATION_EXTENDED_TEM PLATE_EVALUATION_END / PROVIDED_SERVICE_REQUEST / PROVIDED_SERVICE_RESPONSE This property is used to specify the events (comma-separated values) for which CLOB data needs to be logged and only considered if obrh.audit.type is LOG

Table 24-5 Overwrite the customization that is not part of configuration json

Parameters	Default	Values
obrh.import.overwrite	false	true / false

Table 24-6 Use Custom Keystore and Truststore for HTTPS scheme

Parameters	Default	Values
obrh.keystore.password.encoded	-	true / false (true, if password is base 64 encoded)
obrh.truststore.path	-	<TRUSTSTORE_PATH>
obrh.truststore.password	-	<TRUSTSTORE_PASSWORD>
obrh.usekeystore	-	true / false (true, if keystore is required along with truststore)
obrh.keystore.path	-	<KEYSTORE_PATH>
obrh.keystore.password	-	<KEYSTORE_PASSWORD>
obrh.keystore.alias	-	<KEYSTORE_ALIAS_LIST>
obrh.keystore.aliaspassword	-	<KEYSTORE_ALIAS_PASSWORD_LIS T>
obrh.ssl.protocol	TLS	TLS / TLSv1 / TLSv1.1 / TLSv1.2

Table 24-7 For tomcat deployment

Parameters	Default	Values
obrh.server.isJavaEE	true	true / false (false for tomcat)

Table 24-7 (Cont.) For tomcat deployment

Parameters	Default	Values
obrh.taskexecutor.corepoolsize	50	<CORE_POOLSIZE>
obrh.taskexecutor.maxpoolsize	50	<MAX_POOLSIZE>
obrh.taskexecutor.queuecapacity	100	<QUEUE_CAPACITY>

Set Proxy settings for HTTPS: As per the Java Networking documentation, HTTPS protocol handler will use the same as the http handler (i.e. http.nonProxyHosts). But in case of Weblogic, http.nonProxyHosts will not work for some reason. So, use https non proxy host argument (i.e. https.nonProxyHosts).

Table 24-8 Set Proxy settings for HTTPS

Parameters	Default	Values
https.proxyHost	-	<PROXY_HOST_NAME>
https.proxyPort	-	<PROXY_PORT>
https.nonProxyHosts	-	<NON_PROXY_HOST_LIST>
http.nonProxyHosts	-	<NON_PROXY_HOST_LIST>

This property will enforce WebLogic Server to use SUN SSL implementation (javax package) rather than the WebLogic one.

Table 24-9 Support SSL based SOAP provider calls in weblogic environment

Parameters	Default	Values
UseSunHttpHandler	-	true

Table 24-10 CMC-OB RH-KAFKA-CONSUMER

Parameters	Default	Values
cmc-obrh-kafka-consumer.server.port	-	<SERVER_PORT>
obrh.audit.id-generator	UUID	UUID / SNOWFLAKE

Table 24-11 CMC-OB RH-JMS-CONSUMER

Parameters	Default	Values
cmc-obrh-jms-consumer.server.port	-	<SERVER_PORT>
cmc-obrh-jms-consumer.connectionFactory	-	<JMS_CONN_FACTORY_JNDI>
cmc-obrh-jms-consumer.queue	-	<JMS_CONN_QUEUE_JNDI>

Table 24-12 Change ID generator

Parameters	Default	Values
obrh.audit.id-generator	UUID	UUID / SNOWFLAKE

Plato Core Managed Server

Oracle Banking Routing Hub is using Multipart for Import feature. By default, spring supports max 1MB file size and 10MB request size for Multipart.

To import bigger files,

`plato-api-gateway.multipart.max-file-size=<MAX_FILE_SIZE>` (default is 200MB)

`plato-api-gateway.multipart.max-request-size=<MAX_REQUEST_SIZE>` (default is 200MB)

Note

-1 for no size constraint

Example,

`plato-api-gateway.multipart.max-file-size=-1`

`plato-api-gateway.multipart.max-request-size=-1`

Functional Activity Codes

Table 25-1 List of Functional Activity Codes

Screen Name	Functional Activity Codes	Action	Description
Routing Hub	CMC_FA_RH_APPLICATION	VIEW	Service Consumers UI in Routing Hub
Routing Hub	CMC_FA_RH_AUDIT_LOG	CREATE	Log audit information in Routing Hub
Routing Hub	CMC_FA_RH_AUDIT_SUMMARY	GET	Audit Summary
Routing Hub	CMC_FA_RH_AUDIT_SUMMARY_DATA	GET	Audit Summary Data
Routing Hub	CMC_FA_RH_CLEAR_SOAP_CLIENT_CACHE	CLEAR	Clears Soap Client Cache in Routing Hub
Routing Hub	CMC_FA_RH_CONFIG	VIEW	Configuration UI in Routing Hub
Routing Hub	CMC_FA_RH_CONFIG_CREATE	CREATE	Creates configuration
Routing Hub	CMC_FA_RH_CONFIG_DELETE	DELETE	Deletes configuration
Routing Hub	CMC_FA_RH_CONFIG_GET	GET	Fetches configuration
Routing Hub	CMC_FA_RH_CONFIG_MODIFY	MODIFY	Updates configuration
Routing Hub	CMC_FA_RH_CONSUMER_QUEUE_CREATE	CREATE	Saves new Consumer Queue Mapping
Routing Hub	CMC_FA_RH_CONSUMER_QUEUE_DELETE	DELETE	Deletes specific Consumer Queue Mapping
Routing Hub	CMC_FA_RH_CONSUMER_QUEUE_GETALL	GET	Fetches all Consumer Queue Mappings
Routing Hub	CMC_FA_RH_CONSUMER_QUEUE_GETBYID	GET	Fetches specific Consumer Queue Mapping
Routing Hub	CMC_FA_RH_CONSUMER_QUEUE_MODIFY	MODIFY	Updates specific Consumer Queue Mapping
Routing Hub	CMC_FA_RH_DASHBOARD	VIEW	Monitoring Dashboard UI
Routing Hub	CMC_FA_RH_DISPATCH_AUDIT_GETALL	GET	Fetches routing hub requests from audit log
Routing Hub	CMC_FA_RH_DISPATCH_AUDIT_LOG	VIEW	Request Audit UI in Routing Hub
Routing Hub	CMC_FA_RH_ROUTE_DISPATCH	INTEGRATION CALL	Synchronous/Asynchronous integration call
Routing Hub	CMC_FA_RH_ROUTE_DISPATCH_RESPONSE	GET	Fetches provider response of asynchronous routing hub request

Table 25-1 (Cont.) List of Functional Activity Codes

Screen Name	Functional Activity Codes	Action	Description
Routing Hub	CMC_FA_RH_SERVICECONSUMER_CREATE	CREATE	Creates consumer
Routing Hub	CMC_FA_RH_SERVICECONSUMER_DELETE	DELETE	Deletes consumer
Routing Hub	CMC_FA_RH_SERVICECONSUMER_ENV_VARIABLE_EXPORT	EXPORT	Exports environment variables from Routing Hub Maintenance
Routing Hub	CMC_FA_RH_SERVICECONSUMER_ENV_VARIABLE_IMPORT	IMPORT	Imports environment variables
Routing Hub	CMC_FA_RH_SERVICECONSUMER_EXPORT	EXPORT	Exports consumer
Routing Hub	CMC_FA_RH_SERVICECONSUMER_GETALL	GET	Fetches all consumers
Routing Hub	CMC_FA_RH_SERVICECONSUMER_GETBYID	GET	Fetches specific consumer
Routing Hub	CMC_FA_RH_SERVICECONSUMER_IMPORT	IMPORT	Imports consumer
Routing Hub	CMC_FA_RH_SERVICECONSUMER_MODIFY	MODIFY	Updates consumer
Routing Hub	CMC_FA_RH_SERVICECONSUMER_PROCESSJSON	GET	Extracts configuration from configuration file
Routing Hub	CMC_FA_RH_SERVICECONSUMER_SERVICEROUTING_CREATE	CREATE	Creates route
Routing Hub	CMC_FA_RH_SERVICECONSUMER_SERVICEROUTING_DELETE	DELETE	Deletes route
Routing Hub	CMC_FA_RH_SERVICECONSUMER_SERVICEROUTING_GETALL	GET	Fetches all routes
Routing Hub	CMC_FA_RH_SERVICECONSUMER_SERVICEROUTING_GETBYID	GET	Fetches specific route
Routing Hub	CMC_FA_RH_SERVICECONSUMER_SERVICEROUTING_MODIFY	MODIFY	Updates route
Routing Hub	CMC_FA_RH_SERVICECONSUMER_SERVICETRANSFORMATION_CREATE	CREATE	Creates transformation
Routing Hub	CMC_FA_RH_SERVICECONSUMER_SERVICETRANSFORMATION_DELETE	DELETE	Deletes transformation
Routing Hub	CMC_FA_RH_SERVICECONSUMER_SERVICETRANSFORMATION_EXPORT	EXPORT	Exports transformation
Routing Hub	CMC_FA_RH_SERVICECONSUMER_SERVICETRANSFORMATION_GETALL	GET	Fetches all transformations
Routing Hub	CMC_FA_RH_SERVICECONSUMER_SERVICETRANSFORMATION_GETBYID	GET	Fetches transformation
Routing Hub	CMC_FA_RH_SERVICECONSUMER_SERVICETRANSFORMATION_IMPORT	IMPORT	Imports transformation
Routing Hub	CMC_FA_RH_SERVICECONSUMER_SERVICETRANSFORMATION_MODIFY	MODIFY	Updates transformation
Routing Hub	CMC_FA_RH_SERVICECONSUMER_SERVICE_CREATE	CREATE	Creates service
Routing Hub	CMC_FA_RH_SERVICECONSUMER_SERVICE_DELETE	DELETE	Deletes service

Table 25-1 (Cont.) List of Functional Activity Codes

Screen Name	Functional Activity Codes	Action	Description
Routing Hub	CMC_FA_RH_SERVICECONSUMER_SERVICE_EXPORT	EXPORT	Exports service
Routing Hub	CMC_FA_RH_SERVICECONSUMER_SERVICE_GETALL	GET	Fetches all services
Routing Hub	CMC_FA_RH_SERVICECONSUMER_SERVICE_GETBYID	GET	Fetches specific service
Routing Hub	CMC_FA_RH_SERVICECONSUMER_SERVICE_IMPORT	IMPORT	Imports service
Routing Hub	CMC_FA_RH_SERVICECONSUMER_SERVICE_MODIFY	MODIFY	Updates service
Routing Hub	CMC_FA_RH_SERVICEPROVIDER_CREATE	CREATE	Creates provider
Routing Hub	CMC_FA_RH_SERVICEPROVIDER_DELETE	DELETE	Deletes provider
Routing Hub	CMC_FA_RH_SERVICEPROVIDER_EXPORT	EXPORT	Exports provider
Routing Hub	CMC_FA_RH_SERVICEPROVIDER_GENERATEREQUEST	GET	Extracts provider service's request definition
Routing Hub	CMC_FA_RH_SERVICEPROVIDER_GETALL	GET	Fetches all providers
Routing Hub	CMC_FA_RH_SERVICEPROVIDER_GETBYID	GET	Fetches provider
Routing Hub	CMC_FA_RH_SERVICEPROVIDER_IMPL_CREATE	CREATE	Creates implementation
Routing Hub	CMC_FA_RH_SERVICEPROVIDER_IMPL_DELETE	DELETE	Deletes implementation
Routing Hub	CMC_FA_RH_SERVICEPROVIDER_IMPL_EXPORT	EXPORT	Exports implementation
Routing Hub	CMC_FA_RH_SERVICEPROVIDER_IMPL_GENERATEREQUEST	GET	Extracts implementation service's request definition
Routing Hub	CMC_FA_RH_SERVICEPROVIDER_IMPL_GETALL	GET	Fetches all implementations of specific provider
Routing Hub	CMC_FA_RH_SERVICEPROVIDER_IMPL_GETBYID	GET	Fetches specific implementation of specific provider
Routing Hub	CMC_FA_RH_SERVICEPROVIDER_IMPL_IMPORT	IMPORT	Imports implementation
Routing Hub	CMC_FA_RH_SERVICEPROVIDER_IMPL_MODIFY	MODIFY	Updates implementation
Routing Hub	CMC_FA_RH_SERVICEPROVIDER_IMPORT	IMPORT	Imports provider
Routing Hub	CMC_FA_RH_SERVICEPROVIDER_MODIFY	MODIFY	Updates provider

Index

A

Audit Purging / Archiving, [1](#)
Available Interfaces, [2](#)

B

Blackout Window, [1](#)

C

Certificate Upload, [3](#)
Chaining, [1](#)
Common Templates, [1](#)
Complete Action, [4](#)
Configuration, [1](#)
Configuration Scenarios, [1](#)
Consumer Services, [1](#)
Custom Authentication, [1](#)

D

Delete Action, [5](#), [6](#)

E

Environment Variables, [1](#)
Error Codes, [1](#)

F

FAQ, [1](#)
Functional Activity Codes, [1](#)

H

Hookpoints, [1](#)

I

Identity Matcher, [2](#)
Implementation, [1](#)

J

JSLT, [6](#)

M

Monitoring Dashboard, [1](#)
Multipart Request, [1](#)

O

Oracle Banking Routing Hub VM Arguments, [1](#)
Override, [3](#)

P

Preserve Routing Configuration, [2](#)

R

Removal of cached token, [3](#)
Replace Action, [4](#)
Request Audit - Log, [1](#)
Routing, [1](#)

S

Service Consumers, [1](#)
Service Providers, [1](#)
Skip Matcher, [2](#)

T

Template Extensibility, [1](#)
Transformation, [1](#)
Transformation Type, [1](#)

U

URL Encoded Request, [1](#)

V

Velocity, [1](#)

X

XSLT, [5](#)

XML merging attributes, [1](#)