Routing Hub Configuration User Guide

Oracle Banking Liquidity Management

Release 14.5.4.0.0

Part Number F54228-01

February 2022



Routing Hub Configuration User Guide

Oracle Financial Services Software Limited Oracle Park Off Western Express Highway Goregaon (East) Mumbai, Maharashtra 400 063 India

Worldwide Inquiries: Phone: +91 22 6718 3000 Fax: +91 22 6718 3001 https://www.oracle.com/industries/financial-services/index.html

Copyright © 2018, 2022, Oracle and/or its affiliates. All rights reserved.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate failsafe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited. The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

This software or hardware and documentation may provide access to or information on content, products and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services.



Contents

1	Prefa	ace		. 1
	1.1	Purp	oose	. 1
	1.2	Inter	nded Audience	. 1
	1.3	Doc	ument Accessibility	. 1
	1.4	Acce	ess to Oracle Support	. 1
	1.5	Stru	cture	. 1
2	Intro	ducti	on	2
	2.1	Acro	onyms & Definitions	3
3	Star	t Mai	ntenance - Login Screen	4
4	Mair	n Mer	nu Screen	. 5
5	Serv	vice C	Consumer	6
	5.1	Add		7
	5.1.1	1	Environment Variables	8
	5.2	Impo	ort	11
	5.3	View	۷	12
	5.4	Edit		13
	5.5	Dele	te	13
	5.6	JSO	N Export	14
	5.7	SQL	Export	14
6	Serv	vice F	Providers	15
	6.1	Add		17
	6.1.1	1	Headers	19
	6.1.2	2	Service	21
	6.2	Impo	ort	23
	6.3	View	V	25
	6.4	Edit		26
	6.5	Dele	ete	26
	6.6	Expo	ort	27
7	Impl	emer	ntation	28
	7.1	Add		30
	7.1.1	1	Authentication	34
	7.1.2	2	Headers	35
	7.1.3	3	Service	37
	7.1.4	1	Queue	38
	7.2	Impo	ort	42



7.3	View	43
7.4	Edit	43
7.5	Delete	
7.6	Export	
8 Con	nsumer Services	45
8.1	Add	
8.1.	1 Attributes	
8.2	Import	
8.3	View	51
8.4	Edit	51
8.5	Delete	
8.6	Export	
9 Trar	nsformation	
9.1	Add	
9.2	Import	
9.3	View	
9.4	Edit	59
9.5	Delete	60
9.6	Export	60
10 Rou	uting	61
10.1	Add	62
10.1	1.1 Add Routing with Custom Rule	63
10.1	1.2 Add Custom Rule using Expression Editor	64
10.1	1.3 Transformations	65
10.2	View	67
10.3	Edit	67
10.4	Delete	68
11 Cha	aining	69
12 Con	nfiguration	71
13 Aud	lit Log	74
14 Das	shboard	77
14.1	Routing Health Indicator Widget	77
15 Trar	nsformation Type	78
15.1	Velocity	
15.2	XSLT	81
15.3	JSLT	81
16 Ora	cle Banking Routing Hub Integration Specification	



16.1	Token Generation	
16.2	Synchronous Dispatch API Specification	83
16.3	Asynchronous Dispatch API Specification	85
16.4	Asynchronous Dispatch Response API Specification	
17 Ora	acle Banking Routing Hub VM Arguments	



1 Preface

1.1 Purpose

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

1.2 Intended Audience

This document is intended for the following audience:

- Customers
- Partners

1.3 Document Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

1.4 Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit

http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or visit

http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.

1.5 Structure

This manual is organized into the following categories:

Preface gives information on the intended audience. It also describes the overall structure of the User Manual.

The subsequent chapters describe following details:

- Introduction
- Preferences & Database
- Configuration / Installation



2 Introduction

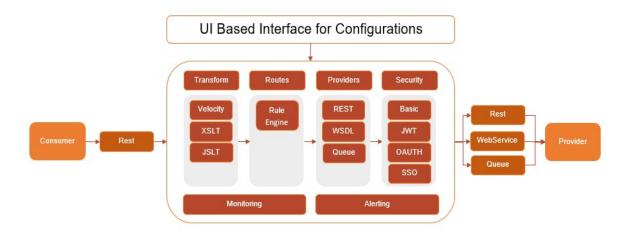
Oracle Banking Routing Hub is routing hub which enables seamless & standardized integrations between FSGBU

Banking Product using configurations provided as part of the product Infrastructure.

Consumer Application does not need to know

- Servicing Providers or Product Processors Product processor to which the integration is required.
- Name of the Service Logical name of the service e.g. Funds Transfer, Letter of Credit Initiation
- Messaging structure of Service Structure of the message e.g Json, XML.
- Communication Protocol Web services, Rest API, Queue.
- Can be integrated with different versions of a Product processors

In this document we have shown the maintenance of two product i.e." Oracle Service Consumer" as Service Consumer and "External Product Processor" as Service Provider





2.1 Acronyms & Definitions

Following are some of the acronyms and abbreviations you are likely to find in this user manual:

Abbreviation & Definitions	Description
Service Consumers	Are Applications need to integrate with multiple product processors with loosely couple integration layer available as Oracle Banking Routing Hub. Service Consumer integrates with Oracle Banking Routing Hub
Service Providers	This are product processors available to serve the request send by Oracle Banking Routing Hub on behalf of Service Consumer
Service	Are Soap Web Services imported through WSDL or Rest Web Services imported through Swagger
Headers	Are headers require by product processor while sending request



3 Start Maintenance - Login Screen

Open Browser, Hit URL and Launch Oracle Banking Routing Hub.

Sign In
User Name *
Password *
Sign In
Cancel

Component I	oriefing			
Component Name	Component Type	ls Mandatory	Data type	Comments
User Name	Text Box	Yes	Alphanumeric	
Password	Text Box	Yes	Alphanumeric with special characters	
Sign In	Button			Navigates to Dashboard / menu screen
Cancel	Button			



4 Main Menu Screen

=	Ê
Menu Item Search Q	
Core Maintenance	
Security Management	

Component briefing		
Component Name	Component Type	Comments
Core Maintenance	Main menu item	
Routing Hub	Sub menu item	
Configuration	Sub menu option	Navigates to Configuration screen
Service Consumer	Sub menu option	Navigates to Service Consumer screen
Request Audit	Sub menu option	Navigates to Request Audit screen



5 Service Consumer

Service Consumer is Oracle product which will invoke Oracle Banking Routing Hub API, Oracle Banking Routing Hub will analyse, evaluate destination product processor and transform data into format of the same.

Service Consumer comprises of the source and destination integration details.

Navigation: Core Maintenance -> Routing Hub -> Service Consumers



	× * *,
٩	
View Edit Delete Export ► JSON Configuration SQL Request Audit	
	View Edit Delete Export JSON Configuration SQL

Component briefing			
Component Name	Component Type	Condition	Comments
Add	Button		Pops up add dialog
Import	Button		Pops up import dialog



Search Navigation: Service	Combo Box One	icon (operation	Provides search functionality with case insensitive (Service Consumer Name) menu)
View	menu option	Non-editable	Pops up view dialog
Edit	menu option		Pops up edit dialog
Delete	menu option		
Export	Sub menu item		
JSON	menu option		Exports in JSON
SQL	menu option		Exports in SQL
Configuration	menu option		Pops up configuration dialog
Request Audit	menu option		Pops up request audit log

5.1 Add

User can create Service Consumer manually.

ce Consumers					
vice Consumers					
Add Import search tems to display. 1 of 0 (1 - 0 of 0 items) K X X	Add Service Cons	sumer	255.		s up to a maximum of at beginning.No space
	Oracle_Service_Co		Val	ue	
	No data to display	<u>.</u>		Save	

Navigation: Sorvice Consumers -> Add



Component briefing						
Component Name	Component Type	ls Mandatory	Data type	Validation	Comments	
Name	Text Box	Yes	Alphanumeric with special characters	 Name cannot be blank Enter 0 or more characters, up to a maximum of 255 No numeric value at beginning and no space allowed 	Unique Service Consumer name	
Environment Variables	Table Content					
Save	Button				Saves the Service Consumer	

5.1.1 Environment Variables

User will be able to define the group of variables which can be accessed throughout the specific consumer's configuration.

Below is the syntax for accessing environment variables:

\$env.Environment_Group_Name.Environment_Variable_Name

eg: \$env.COMMON.BRANCH_CODE

Service Consumers		,, ¹² ×
Service Consumers		
Add import search No items to display. Page 1 of 0 (1 - 0 of 0 items) K < > 3	Add Service Consumer × Name * Oracle_Service_Consumer # Environment Variables Add * (Group Variable Variable Variable Variable Variable Variable Sare Sare	



Service Consumers			,* ×
Service Consumers			
Add import search	Add Service Consumer	×	
Page 1 of 0 (1-0 of 0 items) K < > X	Add Environment Group	Enter 0 or more characters, up to a maximum of 255. No numeric value allowed at beginning.No space allowed.	
	Gr C Actions Name No data to display.	OK Value	
		Save	

Service Consumers			
Service Consumers			
Add import search No items to display.	Add Service Consumer	×	
Page 1 of 0 (1+0 of 0 items) K < > ≫	Name *	Enter 0 or more characters, up to a maximum of 255. No numeric value allowed at beginning.No space allowed.	
	G Value	OK	

Component briefing						
Component Name	Component Type	ls Mandatory	Data type	Validation	Comments	
Add	Menu Item					
Group	Menu option				Pops up add group dialog	
Variable	Menu option				Pops up add variable dialog	
Navigation: Service Consumer -> Environment Variables -> 3 dot icon (operation menu)						
Edit	menu option / icon				Pops up edit dialog	



Delete	menu option / icon				Deletes group / variable
Environment Group / Variable					
Name	Text Box	Yes	Alphanumeric with special characters	 Name cannot be blank Enter 0 or more characters, up to a maximum of 255 No numeric value at beginning and no space allowed 	
Value	Text Area				Value can either be hardcoded or Velocity mapping.
ок	Button				Saves the group / variable and displays it in the list



5.2 Import

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.

User can also import zip file in order to import all the configuration JSON files together.

Navigation: Service Consumers -> Import

Service Consumers		e de la companya de l	×
Service Consumers			
Add Dimport search	٩		
No items to display.	Import Service Consumer	×	
Notema to dapay.	File * Oracle_Service_Consumer_Consumer.js Select Name * Oracle_Service_Consumer Service Providers Name External_Product_Processor 1.0	Extract	
		Import	

Component briefing						
Componen t Name	Componen t Type	ls Manda tory	Data type	Validation	Condition	Comments
File	File picker	Yes		Allows only to select one file	Accepts JSON and ZIP file	Pops up file selection dialog box
Extract	Button	Yes				Extracts Consumer Name and Service Provider list from JSON file only and displays it in the respective elements.



Name	Text Box	Yes	Alphanu meric with special charact ers	 Name cannot be blank Enter 0 or more characters, up to a maximum of 255 No numeric value at beginning and no space allowed 	Editable	Name is required only for JSON file
Service Provider	Collapsible Header & Content					Displays the list of service providers that are present in JSON file only
Import	Button					Imports Service Consumer

NOTE: Below data needs to be changed after importing consumer configuration file:

- Implementation Host and Port
- Implementation Authentication Password

5.3 View

User can view consumer details and can also switch to edit form by clicking on edit icon. Navigation: Service Consumers -> Operation Menu (3 dot icon) -> View

Service Consumers					,* ×
Service Consumers	View Service	Consumer		@ ×	
Add import search Oracle_Service_Consumer i	Name Oracle_Sen	rice_Consumer			
Page 1 of 1 (1-1 of 1 items) K < 1 > X	Group	t Variables		_	
	COMMON		*		
	Actions	Name BRANCH_CODE	Value Sheaders["branchCo	de"[0]	



5.4 Edit

User can modify the consumer details.

Navigation: Service Consumers -> Operation Menu (3 dot icon) -> Edit

Service Consumers		, * ×
Service Consumers		
🚯 Add 🔊 Import ora		
	Edit Service Consumer ×	
Oracle_Service_Consumer :	Name *	
	Oracle_Service_Consumer	
Page 1 of 1 (1-1 of 1 items) K < 1 >	A Environment Variables	
	G Add -	
	Group *	
	select 💌	
	Actions Name Value	
	No data to display.	
	Save	

5.5 Delete

User can delete the consumer.

Navigation: Service Consumers -> Operation Menu (3 dot icon) -> Delete

Service Consumers			× * *
Service Consumers			
Add 🛃 Import ora	٩		
Oracle_Service_Consumer :			
Page 1 of 1 (1-1 of 1 items) K < 1	к		
		×	
	Do you want to delete the record?	1	
		Confirm Cancel	



5.6 JSON Export

User can export the consumer configuration as JSON file.

Navigation: Service Consumers -> Operation Menu (3 dot icon) -> Export -> JSON

Service Consumers			,* ×
Service Consumers			
🔂 Add 🔂 Import ora	Export Service Consumer	×	
Oracle_Service_Consumer I Page 1 of 1 (1 - 1 of 1 items) K K I >	Name Oracle_Service_Consumer Service Providers Name Name External_Product_Processor 1.0		
		Export	

Note:

• User has an option to select service providers from the list which needs to be exported or can click on "Select All" option for all service providers.

• JSON Export feature will export 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

5.7 SQL Export

User can export the consumer configuration as SQL file.

Navigation: Service Consumers -> Operation Menu (3 dot icon) -> Export -> SQL

Service Consumers	,	* ×
Service Consumers		
Add P Import ora	٩	
Cracle_Service_Consumer Page 1 of 1 (1-1 of 1 items) K < 1	X CONFIRMATION X Do you want to export? Note: Sensitive data such as Implementation Host, Port and Password will not be exported Confirm Cancel	

NOTE: SQL Export feature will export entire configuration without Host, Port and Authentication Password details.



6 Service Providers

Service Providers are the product processors configure to process request send by Oracle Banking Routing Hub on behalf of service consumers.

Service Provider comprises of destination integration details.

Navigation: Core Maintenance -> Routing Hub -> Service Consumers -> <Specific Service Consumer> -> Service Providers

Service Consumers	,, ² ×
Oracle_Service_Consumer	
Service Providers Consumer Services	
🔁 Add 🛛 🖗 import search 🔍	
External_Product_Processor :	
Version 1.0	
Type EXTERNAL Status ACTIVE	
Page 1 of 1 (1-1 of 1 items) K < 1 > X	

Service Consumers		,я ¹² — Ж
Oracle_Service_Consumer		
Service Providers Consumer Services		
🕂 Add	0	
External_Product_Processor Version 1.0 Type INTERNAL Status ACTIVE Page 1 of1 (1-1of1 items) K < 1	View Edit Delete Export Request Audit	
	Clear Cache	

Component briefing							
Component Name Component Type Condition Comments							
<service Consumer></service 	Button		Navigates back to Service Consumers				



Add	Button		Pops up add dialog
Import	Button		Pops up import dialog
Search	Combo Box One		Provides search functionality with case insensitive (Service Provider Name)
Navigation: Serv	ice Providers -> 3 dot	icon (operation	menu)
View	menu option	Non-editable	Pops up view dialog
Edit	menu option		Pops up edit dialog
Delete	menu option		
Export	menu option		Exports in JSON
Request Audit	menu option		Pops up request audit log
Clear Cache	menu option		Clears SOAP client cache



6.1 Add

User can create Service Provider manually.

Navigation: Service Providers-> Add

Service Consumers			× *,
Oracle_Service_Consumer			
Service Providers Consumer Services			
Add 🔂 Import search	Add Service Provider	Enter 0 or more characters, up to a maximum of 255.	,
External_Product_Processor	Product Name *	No numeric value allowed at beginning.No space allowed.	
Version 1.0 Type EXTERNAL Status ACTIVE	Version *	Active	
Page 1 of 1 (1-1 of 1 items) K <	Headers		
	Service		
		Save	

Component briefing						
Component Name	Component Type	ls Mandatory	Data type	Validation	Comments	
Product Name	Text Box	Yes	Alphanumeric with special characters	 Name cannot be blank Enter 0 or more characters, up to a maximum of 255. No numeric value at beginning and no space allowed. 	Unique provider name	
Туре	Combo Box One	Yes			Predefined Values: INTERNAL / EXTERNAL INTERNAL type should be used for oracle products.	



					EXTERNAL type should be used for non- oracle products
Version	Text Box	Yes	Number	 Version cannot be blank Enter 0 or more characters, up to a maximum of 255. Enter only numeric or decimal values. 	Unique provider version
Active	Switch				Predefined Values: ACTIVE / INACTIVE If provider is marked as inactive, then all related routes will be stopped.
Headers	Collapsible Header & Content				Provider specific headers
Service	Collapsible Header & Content				Provider specific service details
Save	Button				Saves the Service Provider



6.1.1 Headers

External product processor might require some standard headers to be passed along with the request.

User can specify the headers which are required by service endpoints for its all implementations but not present in swagger file.

These headers can be configured in Oracle Banking Routing Hub using the steps given below

Service Consumers	
Oracle_Service_Consumer	Add Service Provider ×
Service Providers Consumer Services	
Add Finport search	Product Nam Add Header Enter 0 or more characters, up to a maximum of 255. External_Proc. No numeric value allowed at beginning.No space
	Version * Name * allowed.
External_Product_Processor	1.0
Version 1.0 Type EXTERNAL	A Headers
Status ACTIVE	🕀 Add
	Actions
Page 1 of 1 (1 - 1 of 1 items) K < 1	
	OK OK
	Save

racle_Service_Consumer	Add Service Provider		×		
rvice Providers Consumer Services	Concernence of				
Add Timport search	Product Name *		Туре *		
Mad P import search	External_Product_Processo	or.	EXTERNAL	*	
	Version *		Active		
External_Product_Processor	1.0				
Version 1.0	d Headers				
Type EXTERNAL Status ACTIVE	Add	🔁 Add			
	Actions	Name	Value		
ge 1 of 1 (1 - 1 of 1 items) K <	1 Edit	appld	CMNCORE		
	▶ s Delete				
				Save	
					4

Component briefing						
Component Name	Component Type	ls Mandatory	Data type	Validation	Comments	
Add	Button				Pops up add dialog	



Navigation: Service Providers -> Headers -> 3 dot icon (operation menu)						
Edit	menu option				Pops up edit dialog	
Delete	menu option				Deletes header	
Navigation: So	ervice Provide	rs -> Headers	s -> Add			
Name	Text Box	Yes	Alphanumeric with special characters	 Name cannot be blank Enter 0 or more characters, up to a maximum of 255. No numeric value at beginning and no space allowed. 		
Value	Text Area	Yes	Alphanumeric with special characters	• Enter 0 or more characters, up to a maximum of 255.	Value can either be hardcoded or can be Velocity mapping.	
ОК	Button				Saves the header details and displays it in the list	



6.1.2 Service

Add Service Provider	
Add Service Provider ×	
External_Product_Processor Headers	
Version 1.0 Service	
Status ACTIVE URL WSDL * http://whi00bzdr?023/FCU85-ELCMWeb/EValidLimitService?WSDL Import	
age 1 of 1 (1-1 of 1 items) K C	
ElValidLimitService (ElValidLimitServiceSEI) QueryValidLimitIO	

Component briefing						
Component Name	Component Type	ls Mandatory	Comments			
Туре	Combo Box One	Yes	Predefined Values: WSDL / SWAGGER / OTHERS			
URL	Text Box	Yes	Service URL of the file location			
Gateway Prefix	Text Box		Gateway Prefix is context path of below formatted URL http://host:port/gateway-prefix/endpoint			
Import	Button		Extracts the service information from URL and displays it in the Service list			

6.1.2.1 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.

NOTE: In case there is a change in wsdl file, then same wsdl file need to be imported again in order to update the provided service information in routing hub.



6.1.2.2 SWAGGER

Swagger is an Interface Description Language for describing RESTful APIs expressed using JSON.

Currently, Swagger 2.0 & OpenAPI 3.0 both are supported.

NOTE: In case 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.



6.1.2.3 OTHERS

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

Service Consumers				× * 4
Oracle_Service_Consumer	Edit Service Provider		×	
Service Providers Consumer Services	Service		^	
🕂 Add 🖓 Import Search	Type Name *			
	Http Method * Endpoint *		. 1	
External_Product_Processor	Select 💌			
Version 1.0 Type INTERNAL	Gateway Prefix 🕢		11	
Status ACTIVE	Service Headers			
Page 1 of 1 (1 - 1 of 1 items)	Service Query Params		1	
		Add	10	
	Service	Operation		
	ElValidLimitService (ElValidLimitServiceSEI)	QueryValidLimitIO		
			~	
		Sav	e	

Component b	Component briefing						
Component Name	Component Type	ls Mandatory	Validation	Comments			
Name	Text Box	Yes	 Name cannot be blank No space allowed at beginning. 	Name of operation			
Http Method	Combo Box One	Yes		Predefined Values: GET / POST / PUT / PATCH / DELETE			
Endpoint	Text Box	Yes	 Endpoint cannot be blank No space allowed at beginning. 	Endpoint URL of operation			
Gateway Prefix	Text Box			Gateway Prefix is context path of below formatted URL http://host:port/gateway- prefix/endpoint			



Service Headers	Collapsible Header & Content		Endpoint specific headers Value can either be hardcoded or can be Velocity mapping.
Service Query Params	Collapsible Header & Content		Endpoint specific query parameters Value can either be hardcoded or can be Velocity mapping.
Add	Button		Adds the endpoint details in the Service list

NOTE: In case there is a change in existing endpoint, then same endpoint details need to be entered again with the new changes in order to update the existing provided service information in routing hub.

6.2 Import

User can create a service provider by importing the JSON file.

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

Navigation: Service Providers -> Import

Service Consumers		"" ×
Oracle_Service_Consumer		
Service Providers Consumer Services		
Add 🔂 Import search		
External_Product_Processor :		
Version 1.0 Type EXTERNAL Status ACTIVE Page	Import Service Provider × File * Select Import	



Component briefing					
Component Name	Component Type	ls Mandatory	Validation	Condition	Comments
File	File picker	Yes	Allows only to select one file	Accepts JSON and ZIP file	Pops up file selection dialog box
Import	Button				Imports Service Provider

NOTE: Below data needs to be changed after importing provider configuration file:

- Implementation Host and Port
- Implementation Authentication Password

6.3 View

User can view provider details and can also switch to edit form by clicking on edit icon. Navigation: Service Providers -> Operation Menu (3 dot icon) -> View

Service Consumers				* * *
Oracle_Service_Consumer				
Service Providers Consumer Services				
Add P Import search	View Service Provider		8)	·
External_Product_Processor	Product Name	Туре		
Version 1.0 Type EXTERNAL Status ACTIVE	External_Product_Processor Version	EXTERNAL		
Page 1 of 1 (1-1 of 1 items) K <	1.0 Headers	On		
	Service			
	Service		Operation	•
	FIValidI imitService (FIValidI imitService)	FN	Ouen/ValidLimitIO	



6.4 Edit

User can modify the provider details.

Navigation: Service Providers -> Operation Menu (3 dot icon) -> Edit

Service Consumers				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Oracle_Service_Consumer				
Service Providers Consumer Services				
Add Emport search	Edit Service Provider		×	
External_Product_Processor	Product Name *	Type *		
Version 1.0	External_Product_Processor	EXTERNAL	·	
Type EXTERNAL	Version *	Active		
Status ACTIVE	1.0			
Page 1 of 1 (1-1 of 1 items) K <	Headers			
	A Service			
	Type URL			
			Save	

6.5 Delete

User can delete the provider.

Navigation: Service Providers -> Operation Menu (3 dot icon) -> Delete

Service Consumers			,," ×
Oracle_Service_Consumer			
Service Providers Consumer Services			
Add 🔁 Import search	٩		
External_Product_Processor			
Version 1.0 Type EXTERNAL Status ACTIVE		×	
Page 1 of 1 (1-1 of 1 items) K < 1	Do you want to delete the record?	Confirm Cancel	



6.6 Export

User can export the provider configuration as JSON file.

Navigation: Service Providers -> Operation Menu (3 dot icon) -> Export

			Shihpai Branch (004) Jun 25, 2020	JOHN DOE johndaem@obrh.com
Service Consumers				,," ×
Oracle_Service_Consumer				
Service Providers Consumer Services				
Add 🔁 Import search	٩			
External_Product_Processor	:			
Version 1.0 Type EXTERNAL Status ACTIVE Page 1 of1 (1-1 of 1 items) K < 1	CONFIRMATION De you want to export? Note: Sensitive data such as imple	mentation Host. Port and Password w		

NOTE: Below data will not 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



7 Implementation

Implementation comprises of Eureka client instance, Queue, Host, Port, authentication and implementation specific service details. Oracle Banking Routing Hub supports webservice and Rest API.

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

Navigation: Core Maintenance -> Routing Hub -> Service Consumers -> <Specific Service Consumer> -> Service Providers -> <Specific Service Provider> -> Implementation

Oracle_Service_Consumer Service Providers External_Product_Processor 1.0 Implementation							
Add Import Search Actions Name Description External_Product_Processor_Default Default Implementation xxxx							
Actions Name Description Service Name Host Port Queue I: External_Product_Processor_Default Default Implementation xxxxx 0							
External_Product_Processor_Default Default Implementation xxxx 0							
Page 1 of1 (1-1 of 1 items) K < 1 > X							
Service Consumers							
Oracle_Service_Consumer > Service Providers > External_Product_Processor 1.0							
Implementation							
🕂 Add							
Actions Name Description Service Name Host Port Queue							
View uct_Processor_Default Default Implementation xxxx 0							
Pa Edit of 1 items) K < 1 > X Delete							
Dente Eport							
Request Audit							
Request Audit Clear Cache							



Component briefing						
Component Name	Component Type	Condition	Comments			
<service Consumer></service 	Button		Navigates back to Service Consumers			
<service Provider></service 	Button		Navigates back to Service Providers			
Add	Button		Pops up add dialog			
Import	Button		Pops up import dialog			
Search	Combo Box One		Provides search functionality with case insensitive (Implementation Name)			
Navigation: Implementation -> 3 dot icon (operation menu)						
View	menu option	Non- editable	Pops up view dialog			
Edit	menu option		Pops up edit dialog			
Delete	menu option					
Export	menu option		Exports in JSON			
Request Audit	menu option		Pops up request audit log			
Clear Cache	Menu option		Clears SOAP client cache			



7.1 Add

User can create Implementation manually.

Navigation: Implementation-> Add

Service Consumers					$_{\mu^{ab}}$ \times
Oracle_Service_Consumer > Service Pro	Add Implementation	×			
Implementation		_			
Add 🔂 Import Search	Name *				
Actions Name	Description *		Host	Port	Queue
External_Product_Processor_Default			XXXXX	0	
Page 1 of1 (1-1 of1 items) K < 1 >	Type * Default Eureka Instance DEFAULT * Service Name * Select * Headers & Sandra	Save			

Component briefing					
Component Name	Component Type	ls Mandatory	Data type	Validation	Comments
Name	Text Box	Yes	Alphanum eric with special characters	 Name cannot be blank Enter 0 or more characters, up to a maximum of 255. No numeric value at beginning and no space allowed. 	Unique implementation name



Description	Text Area	Yes	Alphanum eric with special characters	 Description cannot be blank Enter 0 or more characters, up to a maximum of 1000. No space allowed at beginning or ending of the value. 	
Туре	Combo Box One	Yes			Predefined Values: DEFAULT / QUEUE Note: DEFAULT type is for REST and SOAP API calls.
Default	Switch				Each type can have one default implementation.
Eureka Instance	Switch				Eureka Instance option 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.



Scheme	Combo Box One	Yes			Scheme option is available only for default type. Predefined Values: HTTPS / HTTP
Service Name	Text Box	Yes		 Service Name cannot be blank Enter 0 or more characters, up to a maximum of 255. No space allowed. 	If Eureka Instance is toggled ON and type is default, then only service name is required.
Host	Text Box	Yes	Alphanum eric with special characters	 Host cannot be blank Enter 0 or more characters, up to a maximum of 255. No space allowed. 	If Eureka Instance is toggled OFF and type is default, then only host and port is required.
Port	Text Box	Yes	Number	 Port cannot be blank Enter 0 or more characters, up to a maximum of 6. Only numeric value allowed. 	If Eureka Instance is toggled off and type is default, then only host and port is required.



Authenticati on Headers	Collapsible Header & Content Collapsible		Authentication option is available only when Eureka Instance is toggled OFF and type is default. Header option is available only when
	Header & Content		type is default.
Service	Collapsible Header & Content		Service option is available only when type is default.
Queue	Content		Queue content is available only when type is queue.
Save	Button		Saves the Implementation



7.1.1 Authentication

If External Product processor require authentication to connect to it, Oracle Banking Routing Hub provides standard authentication mechanism schemes like BASIC, JWT, OAUTH_TOKEN, SSO.

NOTE: In case of no authentication, NONE needs to be set as Authentication Type. In case of identity propagation, SSO needs to be set as Authentication Type.

Process of configuration of these is described below.

Service Consumers							$\times ~^{a}\kappa$
Oracle_Service_Consumer > Service Pro	Edit Implementation			×			
Implementation	Default Implementation			^			
🕂 Add							
Actions Name	Scheme * Host *		Port *	er	vice Name	Host	Port
External_Product_Processor_Default			U			XXXXX	0
Page 1 of 1 (1 - 1 of 1 items) K < 1 >	Authentication Type			- 1			
	NONE	•		- II			
	NONE	^					
	BASIC						
	JWT_TOKEN			- 1			
	OAUTH_TOKEN			~			
	SSO	~		Save			

Component b	Component briefing								
Component Name	Component Type	ls Mandatory	Data type	Validation	Comments				
Туре	Combo Box One	Yes			Predefined Values: NONE / BASIC / JWT_TOKEN / OAUTH_TOKEN / SSO				
Username	Text Box		Alphanum eric with special characters	 Username cannot be blank Enter 0 or more characters, up to a maximum of 255. 	Username is mandatory if authentication type is BASIC / JWT_TOKEN / OAUTH_TOKEN				



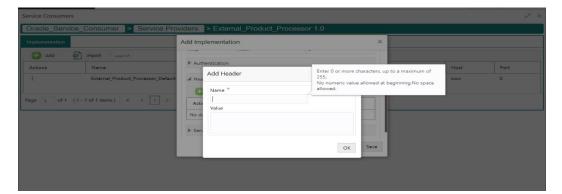
			 No numeric value at beginning and no space allowed. 	
Password	Text Box	Alphanum eric with special characters	Password cannot be blank	Password is mandatory if authentication type is BASIC / JWT_TOKEN / OAUTH_TOKEN

7.1.2 Headers

External product processor might require some standard headers to be passed along with the request.

User can specify the headers which are required by service endpoints for specific implementation but not present in swagger file.

These headers can be configured in Oracle Banking Routing Hub using the steps given below



Service Consumers							,,** ×
Oracle_Service	e_Consumer > Service Pro	viders > Externa	al_Product_Pr	ocessor 1.0			
Implementation		Add Implementation	ı		×		
🔂 Add 🖨	Import search	map	non				1
Actions	Name	Authentication				Host	Port
	External_Product_Processor_Default	I Headers				xxxxx	0
		🔂 Add					
Page 1 of 1 (1	1 - 1 of 1 items) K < 1 >	Actions	Name	Value			
		Edit	appld	CMNCORE			
		▶ s Delete					
					Save		
					Save		



Component b	prieting		1		
Component Name	Component Type	ls Mandatory	Data type	Validation	Comments
Add	Button				Pops up add dialog
Navigation: Ir	nplementation	-> Headers ->	> 3 dot icor	(operation menu)	<u> </u>
Edit	menu option				Pops up edit dialog
Delete	menu option				Deletes header
Navigation: Ir	nplementation	-> Headers ->	> Add	I	I
Name	Text Box	Yes	Alphanu meric with special characte rs	 Name cannot be blank Enter 0 or more characters, up to a maximum of 255. No numeric value at beginning and no space allowed. 	
Value	Text Area	Yes	Alphanu meric with special characte rs	• Enter 0 or more characters, up to a maximum of 255.	Value can either be hardcoded or can be Velocity mapping.
ОК	Button				Saves the heade details and displays it in the list



7.1.3 Service

Service Consumers					,,, ¹ ,
Oracle_Service_Consumer > Service Pro	viders > External_Pr	roduct_Processor 1.	D		
Implementation					
Add import search	Add Implementation		×		
Actions Name				Host	Port
External_Product_Processor_Default	▶ Headers			XXXXX	0
Раде 1 of 1 (1-1 of 1 items) к < 1 >	A Service				1
	Type URL WSDL V		Import		
	Service	Operation	import		
	No. No. No. No.	Operation			
	No data to display.				
			Save		

Component briefing								
Component Name	Component Type	Is Mandatory	Comments					
Туре	Combo Box One	Yes	Predefined Values: WSDL / SWAGGER / OTHERS					
URL	Text Box	Yes	Service URL of the file location					
Gateway Prefix	Text Box		Gateway Prefix is context path of below formatted URL http://host:port/gateway- prefix/endpoint					
Import	Button		Extracts the service information from URL and displays it in the Service list					



7.1.3.1 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.

NOTE: In case there is a change in wsdl file, then same wsdl file need to be imported again in order to update the provided service information in routing hub.

7.1.3.2 SWAGGER

Swagger is an Interface Description Language for describing RESTful APIs expressed using JSON.

Currently, Swagger 2.0 & OpenAPI 3.0 both are supported.

NOTE: In case 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.

7.1.3.3 OTHERS

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

Service Consumers					$_{\mu}^{\mu}$ \times
	viders > External Product Processor 1.0				
Implementation	Edit Implementation	×			
🕂 Add	▲ Service	^			
Actions Name	Type Name * OTHERS		Host	Port	Queue
External_Product_Processor_Default	Http Method * Endpoint *		xxxxx	o	
Page 1 of 1 (1 - 1 of 1 items) K < 1 >	Select 👻				
	Gateway Prefix 🚳				
	Service Headers				
	Service Query Params				
		Add			
	Service Operation				
	No data to display.				
		~			
		Save			
		bure			

Component briefing								
Component Name	Component Type	ls Mandatory	Validation	Comments				
Name	Text Box	Yes	 Name cannot be blank No space allowed at beginning. 	Name of operation				



Http Method	Combo Box One	Yes		Predefined Values: GET / POST / PUT / PATCH / DELETE
Endpoint	Text Box	Yes	 Endpoint cannot be blank No space allowed at beginning. 	Endpoint URL of operation
Gateway Prefix	Text Box			Gateway Prefix is context path of below formatted URL http://host:port/gateway- prefix/endpoint
Service Headers	Collapsible Header & Content			Endpoint specific headers Value can either be hardcoded or can be Velocity mapping.
Service Query Params	Collapsible Header & Content			Endpoint specific query parameters Value can either be hardcoded or can be Velocity mapping.
Add	Button			Adds the endpoint details in the Service list

NOTE: In case there is a change in existing endpoint, then same endpoint details need to be entered again with the new changes in order to update the existing provided service information in routing hub.



7.1.4 Queue

	Add Implementation		×			
lementation	Type *	Default				
Add	QUEUE	•				
	Queue Broker *	Request Reply Pattern *			1200	
ions Name	WEBLOGIC_JMS	 JMS_MESSAGEID 	· ·	Host	Port	Queue
External_Product_Processor_Default	A Request Queue			XOOOX	0	
1 of 1 (1 - 1 of 1 items) K < 1		Queue *				
	A Response Queue					
	Connection Factory	Queue				
			Save			

Component briefing	Component briefing					
Component Name	Component Type	Is Mandatory	Comments			
Queue Broker	Combo Box One	Yes	Predefined Values: WEBLOGIC_JMS			
Request Reply Pattern	Combo Box One	Yes	Predefined Values: JMS_MESSAGEID / JMS_CORRELATIONID JMS_MESSAGEID is default request-reply pattern.			



Connection Factory	Text Box	Connection Factory is JNDI
		based connection factory
		name which is used to
		create connection for JMS
		client.
		Request Connection Factory
		is mandatory, and Response
		Connection Factory is
		optional.
		Response Connection
		Factory is needed when
		destination is going to
		respond back after
		processing the request.
Queue	Text Box	Queue Name is JNDI based
		destination name.
		Request Queue Name is
		mandatory, and Response
		Queue Name is optional.
		Response Queue Name is
		needed when destination is
		going to respond back after
		processing the request.



7.2 Import

User can create an implementation by importing the JSON file.

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

Navigation: Implementation -> Import

Service Consumers					,,** ×
Oracle_Service_	Consumer > Service Providers >	> External_Product_Prod	cessor 1.0		
Implementation					
	Import search Q				
Actions	Name		Description	Host	Port
1	External_Product_Processor_Default	-	Default Implementation	XXXX	0
	-1 of 1 Hems) K < 1 > X	Import Implementation	Select		

Component briefing							
Component Name	Component Type	ls Mandatory	Data type	Validation	Conditio n	Comments	
File	File picker	Yes		Allows only to select one file	Accepts JSON and ZIP file	Pops up file selection dialog box	
Import	Button					Imports Implementation	

NOTE: Below data needs to be changed after importing implementation configuration file:

- Implementation Host and Port
- Implementation Authentication Password



7.3 View

User can view implementation details and can also switch to edit form by clicking on edit icon.

Navigation: Implementatio	n -> Operation Menu	(3 dot icon) -> View
---------------------------	---------------------	----------------------

Add	import search	View Impleme	retation		₿ ×		
Actions	Name	view impleme				Host	Port
i ige 1 of 1 i	External_Product_Processor_Default (1 - 1 of 1 items) K < 1 >	Name External_Pr Description Default Imples	oduct_Processor_Default	Default On		X00X	0
		Scheme http Authentica	Host xxxx	Port 0	_		
		Headers					

7.4 Edit

User can modify the implementation details.

Navigation: Implementation -> Operation Menu (3 dot icon) -> Edit

Service Consumers							,, ¹⁸ ×
Oracle_Service	Consumer > Service Pro	viders > Exter	al_Product_l	Processor 1.0			
Implementation							
Add a	Import search	Edit Implementati	on		×		
Actions	Name					Host	Port
I	External_Product_Processor_Default	Name * External_Product_F	rocessor_Default	Default		XXXXX	0
Page 1 of 1 (1 - 1 of 1 items) K < 1 →	Description * Default Implement	ation				
		Scheme *	Host *	Port *			
		http	X000X	0			
		Authentication					
					Save		
					_		



7.5 Delete

User can delete the implementation.

Navigation: Implementation -> Operation Menu (3 dot icon) -> Delete

Add	Import search	٩			
Actions	Name		Description	Host	Port
1	External_Product_Processor_D	efault	Default Implementation	XXXXX	0
		Do you want to delete the record?	Confirm Cancel		

7.6 Export

User can export the implementation configuration as JSON file.

Navigation: Implementation -> Operation Menu (3 dot icon) -> Export

Service Consumers				, ^w >
Oracle_Servic	e_Consumer > Service Providers > External_Pro	duct_Processor 1.0		
Implementation				
Add 6	Import search Q			
Actions	Name	Description	Host	Port
Actions	External_Product_Processor_Default	Default Implementation	XXXXX	0
	Do you want to export? Note: Sensitive data such as Implem	entation Host, Port and Password will not be exported		

NOTE: Below data will not 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



8 Consumer Services

Consumer Services defines the service ID which is going to be send from service consumer. This will also cater transformation and route definition as well.

Consumer Services comprises of source integration details.

Navigation: Core Maintenance -> Routing Hub -> Service Consumers -> <Specific Service Consumer> -> Consumer Services

Oracle Service				, ¹⁶ ×
	Consumer			
Service Providers	Consumer Services			
-		0		
Actions	Name		Description	
:	List_Facilities		This service fetches the list of facilities available for party id	
Page 1 of 1 (1-1 of 1 items) K < 1 > >			
Service Consumers				, st ×
Oracle_Service	Consumer			
Service Providers	Consumer Services			
😝 Add 🗧		Q		
Add Actions		0	Description	
Actions	Import search	٩,	Description This service fetches the list of facilities available for party id	
Actions I View	Import search C Name Facilities	٩		
Actions : View Page Edit	Import search C	٩		
Actions : View Page Edit Delete	Import search C Name Facilities	٩		
Actions : View Page Edit	Import search C Name Facilities I items) K < 1 > 3	٩,		
Actions View Page Edit Delete Export	Import search C Name	0		
Actions I View Pag Edit Delete Export Configuratio	Import search C Name	0		
Actions I View Pag Edit Delete Export Configuratio	Import search C Name	٩		
Actions I View Pag Edit Delete Export Configuratio	Import search C Name	٩		
Actions I View Pag Edit Delete Export Configuratio	Import search C Name	Q,		
Actions I View Pag Edit Delete Export Configuratio	Import search C Name	9		
Actions I View Pag Edit Delete Export Configuratio	Import search C Name	٩		
Actions : Page Edit Delete Export Configuratio	Import search C Name	٩		

Component briefing					
Component Name	Component Type	Condition	Comments		
<service consumer=""></service>	Button		Navigates back to Service Consumers		
Add	Button		Pops up add dialog		



Import	Button		Pops up import dialog				
Search	Combo Box One		Provides search functionality with case insensitive (Consumer Service Name)				
Navigation: Consumer Services -> 3 dot icon (operation menu)							
View	menu option	Non-editable	Pops up view dialog				
Edit	menu option		Pops up edit dialog				
Delete	menu option						
Export	menu option		Exports in JSON				
Configuration	menu option		Pops up configuration dialog				
Request Audit	menu option		Pops up request audit log				

8.1 Add

User can create Consumer Service manually.

Navigation: Consumer Services-> Add

Service Consumer	'S							,, ^w ×
Oracle_Servi	ice_Consumer							
Service Providers	Consumer Services	Add Service		Enter 0 or m 255.	ore characters, up to	a maximum of		
Add	import search	ID *			value allowed at begi	nning.No space		
Actions	Name	I)			
1	List_Facilities	Description *						
Page 1 of 1	(1 - 1 of 1 items) K < 1 >							
		🔂 Add					 	
		Actions	Actions Attribute Name		json path			
		No data to display.	i.					
		1						
					Sa	ive		

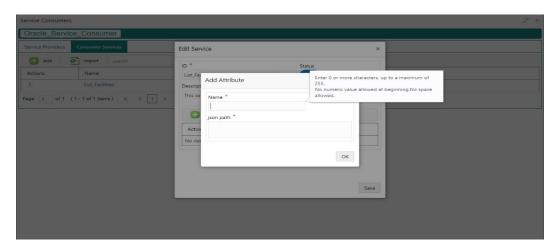


Component briefing							
Component Name	Component Type	ls Manda tory	Data type	Validation	Comments		
ld	Text Box	Yes	Alphanum eric with special characters	Name cannot be blank Enter 0 or more characters, up to a maximum of 255. No numeric value at beginning and no space allowed.	Unique Service Id		
Status	Switch	Yes			Predefined Values: ACTIVE / INACTIVE If consumer service is marked as inactive, then all related routes will be stopped.		
Description	Text Area	Yes	Alphanum eric with special characters	Description cannot be blank Enter 0 or more characters, up to a maximum of 1000. No space allowed at beginning or ending of the value.			
Attributes	Table Content						
Save	Button				Saves the Consumer Service		



8.1.1 Attributes

Service Consumers						× ⁹ 4
Oracle_Servic	ce_Consumer					
Service Providers	Consumer Services	Edit Service			×	
Add	Import search	ID *		tatus		
Actions	Name	List_Facilities				
i	List_Facilities	Description *				
Page 1 of 1 ((1 - 1 of 1 items) K < 1 >	This service fetche	es the list of facilities available fo	r party id		
		Add				
		Actions	Attribute Name	json path		
		Edit	ENTITY	\$.body.entity		
		Delete				
					Save	



Component b	Component briefing							
Component Name	Component Type	ls Mandatory	Data type	Validation	Condit ion	Comments		
Add	Button					Pops up add		
Navigation: C	Navigation: Consumer Services -> Headers -> 3 dot icon (operation menu)							
Edit	menu option					Pops up edit dialog		
Delete	menu option					Deletes attribute		



Navigation: C	onsumer Serv	ices -> Header	s -> Add		
Name	Text Box	Yes	Alphanumeri c with special characters	Name cannot be blank Enter 0 or more characters, up to a maximum of 255. No numeric value at beginning and no space allowed.	
JSON Path	Text Area	Yes	Alphanumeri c with special characters	Value cannot be blank Enter 0 or more characters, up to a maximum of 255. No space allowed.	Value will be JSON path.
ОК	Button				Saves the header details and displays it in the list

NOTE:

- Using \$.body, user can access request body.
 Syntax: \$.body.fieldName
 Example: \$.body.branchCode
- Using \$.headers, user can access request headers.
 Syntax: \$.headers["fieldName"][0]
 Example: \$.headers["branchCode"][0]



8.2 Import

User can create a consumer service by importing the JSON file.

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

Navigation: Consumer Services -> Import

Service Consumers			× *,
Oracle_Service_Consumer			
Service Providers Consumer Services			
😝 Add 🛛 🔊 Import search 🔍			
Actions Name	Description		
1 List_Facilities	This service feto	thes the list of facilities available for party id	
Page 1 of1 (1-1 of1 items) K < 1 > > In	nport Service	×	
	°ile *	Select	

Component briefing							
Component Name	Component Type	ls Mandatory	Data type	Validation	Condition	Comments	
File	File picker	Yes		Allows only to select one file	Accepts JSON and ZIP file	Pops up file selection dialog box	
Import	Button					Imports Consumer Service	



8.3 View

User can view consumer service details and can also switch to edit form by clicking on edit icon. Navigation: **Consumer Services -> Operation Menu (3 dot icon) -> View**

Service Consumers				,," ×
Oracle_Service_Consumer				
Service Providers Consumer Services	View Service		₿ ×	
Add 🔂 Import search	ID	Status		
Actions Name	List_Facilities	On		
E List_Facilities	Description			
Page 1 of 1 (1 - 1 of 1 items) K	This service fetches the list of	facilities available for party id		
	Actions Attrib	ute Name json path	path	
	No data to display.			

8.4 Edit

User can modify the consumer service details.

Navigation: Consumer Services -> Operation Menu (3 dot icon) -> Edit

Service Consumers				× * ×
Oracle_Service_Consumer				
Service Providers Consumer Services	Edit Service		×	
🕒 Add 🛛 🔂 Import search	ID *	Status		
Actions Name	List_Facilities			
E List_Facilities	Description *			
Page 1 of 1 (1 - 1 of 1 items) K < 1	> This service fetches	the list of facilities available for part	ly id	
	Add			
	Actions	Attribute Name	json path	
	No data to display.			
			800775	
			Save	



8.5 Delete

User can delete the consumer service.

Navigation: Consumer Services -> Operation Menu (3 dot icon) -> Delete

Service Consumers			* ×
Oracle_Service	e_Consumer		
Service Providers	Consumer Services		
Add 🗧	Import search	Q	
Actions	Name		Description
i	List_Facilities		This service fetches the list of facilities available for party id
Page 1 of 1 (1 - 1 of 1 items) K < 1	CONFIRMATION Do you want to delete the	

8.6 Export

User can export the consumer service configuration as JSON file.

Navigation: Consumer Services -> Operation Menu (3 dot icon) -> Export

Service Consumers			,* ×
Oracle_Servic	e_Consumer		
Service Providers	Consumer Services		
Add 😜	Import search	٩	
Actions	Name		Description
I	List_Facilities		This service fetches the list of facilities available for party id
Page 1 of 1 (1 - 1 of 1 items) K < 1	CONFIRMATION	Confirm Cancel



9 Transformation

Transformation acts as an assembling and transforming data from source to destination and viceversa. This will take place under consumer service. This converts data of service consumer into service provider

Navigation: Core Maintenance -> Routing Hub -> Service Consumers -> <Specific Service Consumer> -> Consumer Services -> <Specific Consumer Service> -> Transformation

Oracle Se					×*
	ervice_Consumer >	Consum	er Services > List_Facilities		
Transformatio	n Routing				
🔂 Add	Import search		٩		
Actions	Name	Status	Product Processor	Implementation	Service
1	List_Facilities_Trf_01	ACTIVE	External_Product_Processor 1.0		ElValidLimitService (ElValidLimitServiceSEI) - QueryValidLimitIO
Page 1 0	of 1 (1 - 1 of 1 items) K	< 1	к		
		Consum	er Services > List Facilities		
Oracle_Se	ervice_Consumer >	Consum	er Services > List_Facilities		مر.
Oracle_Se	ervice_Consumer >	Consum			مر
Oracle_Se Transformatio	n Routing		Q	Implementation	
Dracle_Se fransformation	ervice_Consumer >	Consum Status ACTIVE		Implementation	Service EVValidLimitService(EVValidLimitServiceSEI) - QueryV4lidLimitIO
Add Actions	n Routing Mine Search	Status ACTIVE	Q Product Processor	Implementation	Service
Dracle_Se Transformation Add Actions View	n Routing m Routing import search Name List Facilities_Trf_01 1 items) K	Status ACTIVE	Q Product Processor External_Product_Processor 1.0	Implementation	Service
Dracle_Se Transformation Add Actions	n Routing import search Name List Facilities_Trf_01 1 items) K	Status ACTIVE	Q Product Processor External_Product_Processor 1.0	Implementation	Service
Oracle_Se Transformation Add Actions View Pag Edit Delete Export	n Routing import search Name List Facilities_Trf_01 1 items) K	Status ACTIVE	Q Product Processor External_Product_Processor 1.0	Implementation	Service
Transformation Transformation Add Actions I View ag Edit Delete Export	n Routing import search Name List Facilities_Trf_01 f1 items) K	Status ACTIVE	Q Product Processor External_Product_Processor 1.0	Implementation	Service
Oracle_Se Transformation Add Actions View Pag Edit Delete Export	n Routing import search Name List Facilities_Trf_01 f1 items) K	Status ACTIVE	Q Product Processor External_Product_Processor 1.0	Implementation	Service
View Pag Edit Delete Export	n Routing import search Name List Facilities_Trf_01 f1 items) K	Status ACTIVE	Q Product Processor External_Product_Processor 1.0	Implementation	Service
Oracle_Se Transformation Add Actions View Pag Edit Delete Export	n Routing import search Name List Facilities_Trf_01 f1 items) K	Status ACTIVE	Q Product Processor External_Product_Processor 1.0	Implementation	Service
Oracle_Se Transformation Add Actions View Pag Edit Delete Export	n Routing import search Name List Facilities_Trf_01 f1 items) K	Status ACTIVE	Q Product Processor External_Product_Processor 1.0	Implementation	Service

Component briefing							
Component Name	Component Type	Condition	Comments				
<service Consumer></service 	Button		Navigates back to Service Consumers				



Pops up request audit log

<consumer Service></consumer 	Button		Navigates back to Consumer Services
Add	Button		Pops up add dialog
Import	Button		Pops up import dialog
Search	Combo Box One		Provides search functionality with case insensitive (Transformation Name)
Navigation: Tr	ansformation -> 3 d	ot icon (operatior	n menu)
View	menu option	Non-editable	Pops up view dialog
Edit	menu option		Pops up edit dialog
Delete	menu option		
Export	menu option		Exports in JSON

Request

Audit

menu option



9.1 Add

User can create Transformation manually.

Navigation: Transformation-> Add

Service Consumers					," ×	
Oracle_Service_Consumer	> Consumer Services > Lis	t_Facilities				
Transformation Routing	Add Transformation	255.	No numeric value allowed at beginning.No space			
Actions Name						
List_Facilities_Trf_01	A Product Processor			l) - QueryValidLimit	10	
Page 1 of 1 (1-1 of 1 items)	Product Processor *	Implementation	Service *			
	select 🔻	select	▼ select	*		
	Service	▶ Service				
	Request Transformation					
	Response Transformation					
				Save		
				Jure		

Component briefing								
Component Name	Component Type	ls Mand atory	Data type	Validation	Comments			
Name	Text Box	Yes	Alphanum eric with special characters	 Name cannot be blank Enter 0 or more characters, up to a maximum of 255. No numeric value at beginning and no space allowed. 	Unique Transformation Name			
Active	Switch				Predefined Values: ACTIVE/INACTIVE If transformation is marked as inactive, then user will not be able to select transformation in routing.			



Product Processor	Collapsible Header			
Product Processor	Combo Box One	Yes		Displays provider list relevant to consumer
Implementati on	Combo Box One			Displays implementation list relevant to selected provider
Service	Combo Box One	Yes		Displays service list relevant to selected provider and implementation
Service	Collapsible Header & Content			Displays service details of selected service
Headers	Collapsible Header & Content			Displays header list relevant to selected provider, implementation and service User can change the header values. Value can either be hardcoded or can be Velocity mapping.
Path Params	Collapsible Header & Content			Displays path param list relevant to selected service User can change the param values. Value can either be hardcoded or can be Velocity mapping.
Query Params	Collapsible Header & Content			Displays query param list relevant to selected service User can change the param values. Value can either be hardcoded or can be Velocity mapping.



Request Transformati on	Collapsible Header		
Туре	Combo Box One		Predefined Values: VELOCITY / JSLT / XSLT
Template	Text Area		User has to define the template in which provider accepts. Please refer Transformation Type for syntax
Response Transformati on	Collapsible Header		
Туре	Combo Box One		Predefined Values: VELOCITY / JSLT / XSLT
Template	Text Area		User has to define the template in which consumer accepts. Please refer Transformation Type for syntax
Mocking required?	Switch		Predefined Values: YES / NO
			If flag is marked as yes, then routing hub will return the mocked template output to consumer without invoking provider API.
Mock Template	Text Area		User has to define the mocked template in which consumer accepts.
			Please refer Transformation Type for syntax
Save	Button		Saves transformation details

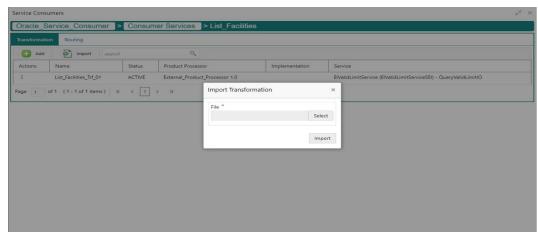


9.2 Import

User can create a transformation by importing the JSON file.

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

Navigation: Transformation -> Import



Component briefing								
Component Name	Component Type	ls Mand atory	Validation	Condition	Comments			
File	File picker	Yes	 Allows only to select one file 	Accepts JSON and ZIP file	Pops up file selection dialog box			
Import	Button				Imports Transformation			



9.3 View

User can view transformation details and can also switch to edit form by clicking on edit icon.

Navigation:	Transformation	-> Operation	Menu (3	dot icon) ->	View
5					

Oracle_S	ervice_Consumer	View Transformation			G	×		
Transformatio	on Routing	Name	_	Active				
Add	import sea	List_Facilities_Trf_01		On				
Actions	Name	I Product Processor						
1	List_Facilities_Trf_01	Product Processor	Implementation		Service) - QueryValidLimitIO	
		External_Product_Processor 1.0	select		ElValidLimitService (ElValidLimitService			
Page 1	of 1 (1 - 1 of 1 items)					ni i		
		Service				- 1		
		▶ Request Transformation						
		Response Transformation						
						-		

9.4 Edit

User can modify the transformation details.

Navigation: Transformation -> Operation Menu (3 dot icon) -> Edit

Service Consu	mers					p ⁴ >
Oracle_Se	ervice_Consumer	> Consumer Services > Li	st_Facilities			
Transformation	n Routing	Edit Transformation			×	
Add	Import sea	Name *		Active		
Actions	Name	List_Facilities_Trf_01				
1	List_Facilities_Trf_01	A Product Processor			ŋ -	QueryValidLimitIO
Page 1 of	f1 (1-1 of 1 items)	Product Processor *	Implementation	Service *		
		External_Product_Processor 1.0 *	select		alidLimitS 👻	
		Service				
		Request Transformation				
		Response Transformation				
					Save	
					_	



9.5 Delete

User can delete the transformation.

Navigation: Transformation -> Operation Menu (3 dot icon) -> Delete

Service Consu	imers				لا مير
Oracle_S	ervice_Consumer >	Consum	er Services > List_Facilities		
Transformatic	n Routing				
Add	Import search		9		
Actions	Name	Status	Product Processor	Implementation	Service
1	List_Facilities_Trf_01	ACTIVE	External_Product_Processor 1.0		ElValidLimitService (ElValidLimitServiceSEI) - QueryValidLimitIO
Page 1 0	of 1 (1 - 1 of 1 items) K	< 1			×
			Do you want to delete the record?		1
				C	Confirm

9.6 Export

User can export the transformation configuration as JSON file.

Navigation: Transformation -> Operation Menu (3 dot icon) -> Export

Service Consumers					^y ×
Oracle_Service_Consumer >	Consum	er Services > List_Facilities			
Transformation Routing					
Add 🔂 Import search		٩			
Actions Name	Status	Product Processor	Implementation	Service	
EList_Facilities_Trf_01	ACTIVE	External_Product_Processor 1.0		ElValidLimitService (ElValidLimitServiceSEI) - QueryValidLimitIO	
Page 1 of 1 (1-1 of 1 items) K	< 1			×	
		Do you want to export?		1	
				Confirm Cancel	



10 Routing

Routing defines no rule or rule-based route configuration. Route decide the actual request to be send to which service provider based on maintenance and evaluation.

Navigation: Core Maintenance -> Routing Hub -> Service Consumers -> <Specific Service Consumer> -> Consumer Services -> <Specific Consumer Service> -> Routing

Page 1 of 1 (1-1 of 1 items) K < 1 > X Service Consumers Oracle_Service_Consumer > Consumer Services > List_Facilities Transformation Routing Image and generative Consumer Image and generative Consumer <th>ervice (ElValidLimitServiceSEI) - QueryValidLimitIO</th>	ervice (ElValidLimitServiceSEI) - QueryValidLimitIO
Add search Rule Product Processor Implementation Service I List_facilities_Route_01 External_Product_Processor_Default ElValidLimitService (ElValidLimitService 2age 1 of 1 (1-1 of 1 items) K<<1>X X 2age 5 of 1 (1-1 of 1 items) K<<1>X X Service Consumers Consumer Services > List_Facilities Transformation Service Noting Add service Add Service Outrog Add Service (ElValidLimitServic (ElValidLimitS	
Name Start/Stop Rule Product Processor Implementation Service i List_Facilities,Route_01 External_Product_Processor 1.0 External_Product_Processor_Default EtValidUmitService (EtValidUmitService) rgg 1 of 1 (1 - 1 of 1 items) K < (1 > 3) Implementation Service rwice Consumers View Start/Stop Rule Product Processor 1.0 External_Product_Processor_Default EtValidUmitService (EtValidUmitService) Product Consumers View Start/Stop Rule Product_Processor 1.0 External_Product_Processor_Default EtvalidUmitService) Add search Q Product_Processor 1.0 External_Product_Processor_Default EtvalidUmitService (EtValidUmitService) 1 View Start/Stop Rule Product Processor 1.0 External_Product_Processor_Default EtvalidUmitService (EtValidUmitService) 1 View Start/Stop Rule Product_Processor 1.0 External_Product_Processor_Default EtvalidUmitService (EtValidUmitService) 1 View Start/Stop Rule Product_Processor 1.0 External_Product_Processor_Default EtvalidUmitService (EtValidUmitService	
i List_Facilities_Route_01 External_Product_Processor 1.0 External_Product_Processor_Default EtValidLimitService (EValidLimitService) ge 1 of 1 (1-1 of 1 items) K 1 > > > > > > > > > > > > > > > > > > >	
yice Consumers racle_Service_Consumer > Consumer Services > List_Facilities ansformation Routing → Add search tions Name Start/Step Rule Product Processor 1.0 External_Product_Processor_Default EtValidLimitService (EtValidLimitService	
ice Consumers racle_Service_Consumer > Consumer Services > List_Facilities rsformation Routing Add search Q View Fait View F	
Racle_Service_Consumer > Consumer Services > List_Facilities nsformation Routing Add search Q Add search Q tions Name Start/Stop Rule Product Processor Implementation Service View For item Foreigner Route_01 External_Product_Processor 1.0 External_Product_Processor_Default EValidLimitService (EValidLimitService (
racle_Service_Consumer > Consumer Services > List_Facilities insformation Routing Add search Q Add search Q Consumer Start/Stop Rule Product Processor Implementation Service Consumer Start/Stop Rule Product_Processor 1.0 External_Product_Processor_Default Eldit	
Name Start/Stop Rule Product Processor Implementation Service View for formation External_Product_Processor 1.0 External_Product_Processor_Default EIValidLimitService (EIValidLimitService (EIValid	
View External_Product_Processor 1.0 External_Product_Processor_Default ElValidLimitService (ElValidLimitService Edit 1 items.) K<	
Clew Litems) K < 1 > X	
Edit 1 items) K < 1 > X	rvice (ElValidLimitServiceSEI) - QueryValidLimitIO
Configuration Request Audit	

Component b	riefing		
Component Name	Component Type	Condition	Comments
<service Consumer></service 	Button		Navigates back to Service Consumers



<consumer Service></consumer 	Button	Navigates back to Consumer Services
Add	Button	Pops up add dialog
Search	Combo Box One	Provides search functionality with case insensitive (Routing Name)

Navigation: Routing -> 3 dot icon (operation menu)

View	menu option	Non-editable	Pops up view dialog
Edit	menu option		Pops up edit dialog
Delete	menu option		
Configuratio n	menu option		Pops up configuration dialog
Request Audit	menu option		Pops up request audit log

10.1 Add

User can create Routing manually.

Navigation: Routing -> Add

Service Consumers							" ^w ×
Oracle_Service_Consumer	Add Route					×	
Transformation Routing	Name *		Start/Stop	Auto Shu	utdown		
Add search			START STOP				
Actions Name	O Default Rule	Custom Rule					
E List_Facilities_Route_01	a Rule					L.	imitServiceSEI) - QueryValidLimitIO
Page 1 of 1 (1-1 of 1 items)	Expression Edito	3*				_	
	 Transformation 	s					
	🔂 Add						
	Actions	Product Processor	Implemen	tation Tra	ansformation		
						Save	
	-					_	



Component b	riefing		
Component Name	Component Type	ls Mandatory	Comments
Name	Text Box	Yes	Unique routing name
Start / Stop	Switch	Yes	Predefined Values: START / STOP If routing is marked as STOP, then consumer request will fail at routing hub level only.
Auto Shutdown	Switch	Yes	Predefined Values: ON / OFF If AutoShutdown flag is ON, then route state will be changed to STOP if route failure goes beyond the threshold failure limit based on the monitoring and alert configuration.
Rule Type	Radio Button	Yes	Predefined Values: Default Rule / Custom Rule
Transformati ons	Collapsible Header & Content		
Save	Button		Saves the routing details

10.1.1 Add Routing with Custom Rule

Service Consumers							, ^w 2
Oracle_Service_Consumer	Add Route					×	
Transformation Routing	Name *		Start/Stop		Auto Shutdown		
Add search			START ST	0P			
Actions Name	 Default Rule 	Custom Rule					
List_Facilities_Route_01	I Rule						LimitServiceSEI) - QueryValidLimitIO
Page 1 of 1 (1 - 1 of 1 items)	Expression <i>Editor</i>						
	Transformations						
	🔂 Add						
	Actions	Product Processor	In	plementation	Transformation		
						Save	
						_	



Component briefing						
Component Name	Component Type	ls Mandatory	Data type	Comments		
Expression	Text Area	Yes		User can view expression that is formed through expression editor.		
Editor	Button			Pops up expression editor dialog		

10.1.2 Add Custom Rule using Expression Editor

Service Consumers						,
Oracle_Service_Con Transformation Routing	Expression Editor	in in the product			×	
Add search	Attribute *	Operator *	Value *	Condition Type	×	
Actions Name List_Facilities_Ro	select 🔻	select 🔻		select	*	eSEI) - QueryValidLimitIO
Page 1 of 1 (1 - 1 of 1						
					Save	

Component briefing						
Component Name	Component Type	Is Mandatory	Comments			
Attribute	Combo Box One	Yes	Displays list of attributes relevant to consumer service			
Operator	Combo Box One	Yes	Logical operators to form an expression			
Value	Text Box	Yes				



Condition type	Combo Box One	Conditional Operators
Save	Button	Saves the expression

NOTE: String value should be quoted using single quotes (')

eg: 'abc'

List value should be comma separated values and quoted using single quotes (') eg: 'abc,xyz,1.23,true'

10.1.3 Transformations

User can define the sequence of transformations for each routing in which request should be processed.

Sequence of transformations in list can be changed by using drag-n-drop feature.

Service Consumers						
Oracle_Service_Consumer	> Consumer S	Services > List_Facilities	2			
Transformation Routing	Add Route				×	
Add search	O Default Rule	Custom Rule				
Actions Name	A Rule					
List_Facilities_Route_01	Expression Editor	*				imitServiceSEI) - QueryValidLimitIO
Page 1 of 1 (1-1 of 1 items)						
	▲ Transformations					
	Add					
	Actions	Product Processor	Implementation	Transformation		
	No data to display	L				
					Save	
					_	
Service Consumers	_		_		-	,** ×
Service Consumers Oracle_Service_Consumer	> Consumer S	services > List Facilities	-	-		# *
	> Consumer S		_	-	×	<i>7</i> ×
Oracle_Service_Consumer		on	Implementation *	-	×	<i>1</i> ×
Oracle_Service_Consumer Transformation Routing	Add Transformation	on	implementation * select		×	/ ×
Oracle_Service_Consumer	Add Transformation Product Processor * select Transformation *	on v		*	×	imitServiceSE) - QueryValidLimitiO
Add search Actions Name	Add Transformation Product Processor * select Transformation * select	on		•	×	ی می است. mitServiceSE) - QueryValidLimitiO
Oracle_Service_Consumer Transformation Routing Add search Actons Name j List_Facilities_Route_01	Add Transformation Product Processor * select Transformation * select Headers	on *		•	×	"* × imitServiceSEI) - QueryValidLimitIO
Oracle_Service_Consumer Transformation Routing Add search Actons Name j List_Facilities_Route_01	Add Transformatio Product Processor * select Transformation * select Headers # Product Processor	on *			×	"*" × imitServiceSEI) - QueryValidLimitIO
Oracle_Service_Consumer Transformation Routing Add search Actons Name j List_Facilities_Route_01	Add Transformation Product Processor * select Transformation * select Headers	on *			×	"*" × imitServiceSEI) - QueryValidLimitIO
Oracle_Service_Consumer Transformation Routing Add search Actons Name j List_Facilities_Route_01	Add Transformatio Product Processor * select Transformation * select Headers # Product Processor	v v			×	imitServiceSEI) - QueryValidLimitiO
Oracle_Service_Consumer Transformation Routing Add search Actons Name j List_Facilities_Route_01	Add Transformation Product Processor * select Transformation * select > Headers # Product Processor Service > Request Transform	n v			×	ImitServiceSEI) - QueryValidLimitiO
Oracle_Service_Consumer Transformation Routing Add search Actons Name j List_Facilities_Route_01	Add Transformation Product Processor * select Transformation * select Headers Product Processor Service	n v			×	imitServiceSE() - QueryValidLimitiO
Oracle_Service_Consumer Transformation Routing Add search Actons Name j List_Facilities_Route_01	Add Transformation Product Processor * select Transformation * select > Headers # Product Processor Service > Request Transform	n v				imitServiceSEI) - QueryValidLimitiO
Oracle_Service_Consumer Transformation Routing Add search Actons Name j List_Facilities_Route_01	Add Transformation Product Processor * select Transformation * select > Headers # Product Processor Service > Request Transform	n v		•	×	imitServiceSEI) - QueryValidUmItIO
Oracle_Service_Consumer Transformation Routing Add search Actons Name j List_Facilities_Route_01	Add Transformation Product Processor * select Transformation * select > Headers # Product Processor Service > Request Transform	n v		•		mitServiceSE) - QueryValidUmitiO
Oracle_Service_Consumer Transformation Routing Add search Actons Name j List_Facilities_Route_01	Add Transformation Product Processor * select Transformation * select > Headers # Product Processor Service > Request Transform	n v				mtServiceSE) - QueryValidLimitiO



Component briefing					
Component Name	Component Type	ls Mandatory	Comments		
Product Processor	Combo Box One	Yes	Displays provider list relevant to consumer		
Implementation	Combo Box One	Yes	Displays implementation list relevant to selected provider		
Transformation	Combo Box One	Yes	Displays transformation list relevant to select provider & implementation		
Headers	Collapsible Header & Content		Displays header list relevant to selected implementation and transformation User can change the header values. Value can either be hardcoded or can be Velocity mapping.		
Product Processor	Collapsible Header & Content		Displays service details relevant to selected transformation		
Request Transformation	Collapsible Header & Content		Displays request transformation template		
Response Transformation	Collapsible Header & Content		Displays response transformation template		
ок	Button		Saves the transformation details in list		



10.2 View

User can view routing details and can also switch to edit form by clicking on edit icon.

Navigation: Routing -> Operation Menu (3 dot icon) -> View

Service Consumers	_				,, ^{se} ×
Oracle_Service_Consumer	View Route			e >	
Transformation Routing	Name List_Facilitie Default F	s_Route_01		uuto Shutdown Dff	LimitServiceSEI) - QueryValidLimitIO
Page 1 of 1 (1-1 of 1 items)	Actions	Product Processor External_Product_Processor 1.0	Implementation External_Product_Processor_Default	Transformation t List_Facilities_Trf_01	

10.3 Edit

User can modify the routing details.

Navigation: Routing -> Operation Menu (3 dot icon) -> Edit

Service Consumers				, * ×
Oracle_Service_Consumer	Edit Route		×	
Transformation Routing Add search Actions Name	Name * S List_Facilities_Route_01 Default Rule Custom Rule	tart/Stop Auto Shu START STOP	tdown	
List_Facilities_Route_01	Transformations	LimitServiceSEI) - QueryValidLimitIO		
Page 1 of 1 (1 - 1 of 1 items)	🕂 Add			
	Actions Product Processor	Implementation	Transformation	
	External_Product_Processor 1.0	External_Product_Processor_Default	List_Facilities_Trf_01	
			Save	



10.4 Delete

User can delete the routing.

Navigation: Routing -> Operation Menu (3 dot icon) -> Delete

Service Consum	iers					,," ×
Oracle_Ser	vice_Consumer	> Consu	ner Se	ervices > List_Facilities		
Transformation	Routing					
Add	search	٩,				
Actions Na	ame	Start/Stop	Rule	Product Processor	Implementation	Service
: Lis	t_Facilities_Route_01	٠		External_Product_Processor 1.0	External_Product_Processor_Default	ElValidLimitService (ElValidLimitServiceSEI) - QueryValidLimitIO
Page 1 of	1 (1 - 1 of 1 items)	К < 1	0	CONFIRMATION		×
			Do	you want to delete the record?		1
					Confirm	Cancel



11 Chaining

End-user will be able to define the sequence of transformations for each routing in which request should be processed.

Chaining can be achieved by using snapshot list.

Snapshot list stores the response body and response headers whenever the transformation is processed.

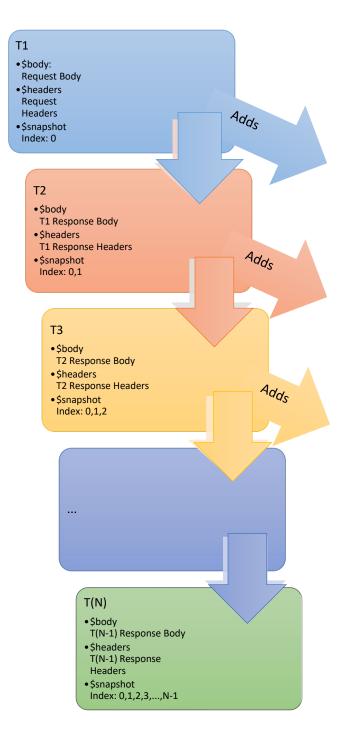
So, end-user can access response body or headers of all processed transformations at any given step.

Syntax:

\$snapshot.get(index).body or \$snapshot.get(index).headers

NOTE: \$body and \$headers will refer the response body and headers of previous step.





Snapshot I	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				



12 Configuration

End-user can configure the properties w.r.t. monitoring and alerting.

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

Navigation: Core Maintenance -> Routing Hub -> Configuration

Configuration			$_{\mu}^{st}$ \times
al Monitoring			
Window Type Count Time	Window Size	v	
⊿ Alert			
	Failure rate threshold		
100 🗸 🗙	50%	× ^	
⊿ Email Alert			
Email Addresses			
I Export			
Mark data as factory shipped			
			Clear Reset Save

Component b	riefing			
Component Name	Component Type	ls Mandatory	Validation	Comments
Monitoring	Collapsible Header & Content		Monitoring properties are mandatory if alert properties have been configured.	This section has properties that are required by Breaker for storing and aggregating the outcome of calls using WindowType and WindowSize.
Window Type	Radio Button	No		 Predefined Values: COUNT / TIME The count-based sliding window aggregates the outcome of the last N calls (Window Size). The time-based sliding window aggregates the outcome of the calls



				of the last N seconds (Window Size).
Window Size	Number Box	No		This property is used to record the outcome of calls when the CircuitBreaker is closed. In case of count-based sliding window, window size will be N calls. In case of time-based sliding window, window size will be N seconds.
Alert	Collapsible Header & Content		Alert properties are mandatory if monitoring properti es have been configured.	This section has properties that are required for transitioning CircuitBreaker.
Minimum number of calls	Number Box	No		If minimumNumberOfCalls is 10, then at least 10 calls must be recorded, before the failure rate can be calculated. If only 9 calls have been recorded the CircuitBreaker will not transition to open even if all 9 calls have failed.
Failure rate threshold	Number Box	No		Configures the failure rate threshold in percentage. When the failure rate is equal or greater than the threshold the CircuitBreaker transitions to open and starts short-circuiting calls.
Email Alert	Collapsible Header & Content			This section has properties that are required for mail notification.



Email Addresses	Text Box	No	Once the failure rate crosses the failureRateThreshold, then end-user will be notified about the event via mail. This property will be semi- colon separated email addresses
Export	Collapsible Header & Content		This section has properties that are required for exporting configuration json. This section will be visible at system level only.
Mark data as factory shipped	Switch	Yes	This property is used to mark the exported configuration json as factory shipped json. So, end-user will not be able to modify or delete the certain data once imported. Default value is false.

Example

Let say

WindowType is Count

WindowSize is 20

Minimum number of calls is 10

Failure rate threshold is 50%

Configured properties will behave as below:

After 10 (min number of calls) calls, routing would get shutdown if 50% (failure rate) of atmost last 20 (window size) calls have failed.

And if email address property is configured, then end-user will be notified as well.



13 Audit Log

Check Audit log on the below navigation path for Oracle Banking Routing Hub

Request Audit 2¹² - 2 Request Id Consumer Service Consumer Provider Implementation Provider Service rovider Transformation Route User Id Search 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) K < > >

Request Audit	:							ر ^{عر} ا
Request Id			Consumer		Consumer Service			
Provider			Provider Implementation Request Audit Details		Provider Service			
Transformation								
Tansionnation			Request Id eqwiLi5IXb4N1dZTT8KKZimRnxj3Q16tby8u5n0N	////COROdNeNIENI4hZelm/MeerC	under an Onder Phylip in Niel viel Nie 2			
			8	vkv6280dusivriv m2cmwrge				
Search			Ø — — Ø —		⊘			
Request Id	Consumer	Consumer	OBRH Request Provider Reques Timestamp	st Provider Response	OBRH Response	te	Status	User Id
eqwiLi5IX	Oracle_Service_Consumer	List_Facilities	2021-02-23T12:34:42.128+05:30)_L	SUCCE	JOHNDOE
			Message					
xvA8tBqg	Oracle_Service_Consumer	List_Facilities	{"headers":{"branchCode":["004"],"Authorization eyJhbGciOiJIUzUxMiJ9.eyJ0aWQiOiliLCJzdWliOi.		6lldFQilsImlhdCl6MTYxNDA	>_L	FAILURE	JOHNDOE
			2Mzc4NiwiZXhwljoxNjE0MDY0Mzg2fQ.R- Jo42xYSH7cEb7k2BxUvWHN53W_Nd9z3RJixrKM	//DSsbju9hWpG7RB8yY_dnTtC	8tO5sA8S6IIGBqa-j-			
rKiNdo6q	Oracle_Service_Consumer	List_Facilities	P5Taw"],"Content-Type":["application/json"],"Us	er-Agent":["Mozilla/5.0 (Wind	ows NT 10.0; Win64; x64))_L	FAILURE	JOHNDOE
0cfSvi3rO	Oracle_Service_Consumer	List_Facilities)_L	FAILURE	JOHNDOE
7QNJXRx	Oracle_Service_Consumer	List_Facilities)_L	SUCCE	JOHNDOE
								,
Page 1 of	347 (1-5 of 1735 items)	К < 1 2	: 3 4 5 347 ≻ ×I					

Navigation: Core Maintenance -> Routing Hub -> Request Audit



Request Audit	t								$_{\mu}^{\mu}$ \times
Request Id			Consumer		c	onsumer Service			
Provider			Provider Implementa	tion	P	rovider Service			
Transformation			Request Audit Details Request Id xvA8tBqgWQas1qC7pl2nt 9Tb	N5vtWog6ie9WbLae48KK0	K08JsIIRUpa1a2xFYAaHGau	I6WiSd7XSfG8axMhgbnP0			
Search Request Id	Consumer	Consumer	OBRH Request Timestamp	Provider Request	Provider Response	OBRH Response	te	Status	User Id
eqwiLi5IX	Oracle_Service_Consumer	List_Facilities	2021-02-23T12:30:31.796 Message	+05:30)_L	SUCCE	JOHNDOE
xvA8tBqg	Oracle_Service_Consumer	List_Facilities	{"headers":{"branchCode": eyJhbGciOiJlUzUxMiJ9.eyJ	0aWQiOiliLCJzdWliOiJPQk	earer RYX0FOSUtFVCIsImF1ZCI6I 8L8tuyKAXZtKXDPmrnIsWp)_L	FAILURE	JOHNDOE
rKiNdo6q	Oracle_Service_Consumer	List_Facilities	(Windows NT 10.0; Win64		ype":["application/json"],"U (KHTML, like Gecko) Chron)_L	FAILURE	JOHNDOE
0cfSvi3rO	Oracle_Service_Consumer	List_Facilities)_L	FAILURE	JOHNDOE
7QNJXRx	Oracle_Service_Consumer	List_Facilities)_L	SUCCE	JOHNDOE
Page 1 of	f 347 (1 - 5 of 1735 items)	К < 1 2	3 4 5 347	к «					

Component briefing					
Component Name	Component Type	Condition	Comments		
Consumer	Text Box		Consume Name		
Consumer Service	Text Box		Service Consumer Name		
Provider	Text Box		Provider Name		
Provider Implementation	Text Box		Provider Implementation Name		
Provider Service	Text Box		Provider Service Name		
Transformation	Text Box		Transformation Name		
Route	Text Box		Route Name		
Request Id	Text Box		Correlation Id		
User Id	Text Box		User Id		



Search	Button	Search is done based on below things:	Performs search
		Case insensitive	operation with specified
		Pattern matching	values
		Single / Multi Column search	

NOTE: Clicking on "RequestId" value will display step by step execution of request with data such as Routing Hub Request & Timestamp, Provider Request & Timestamp, Provider Response & Timestamp, Routing Hub Response & Timestamp.



14 Dashboard

14.1 Routing Health Indicator Widget

User can view the metric information Successful calls vs Failed calls ratio of each routing.

NOTE: Failed calls here refer to the calls that are failed due to timeout issue.

		_
Routing Health Indicator Consumer	Service	×
Oracle_Service_Cons		9
	List_Facilities	~
Routing		
All List_Facilities	s_Route	
	eries Successful Calls	
Ň	/alue 100.0	
	Successf	6.1
100%	Failed Ca	



15 Transformation Type

15.1 Velocity

Velocity is a Java-based template engine.

Velocity can be used to generate XML files, SQL, PostScript and most other text-based formats.

NOTE: In routing hub, Velocity will be used to generate JSON and XML.

- Using **\$body**, user can access request/response body.
 Syntax: \$body.fieldName
 Example: \$body.branchCode
- Using **\$headers**, user can access request/response headers.
 Syntax: \$headers["fieldName"][0]
 Example: \$headers["branchCode"][0]
- Using **\$bodyAsString**, user can access response body as string. Syntax: **\$bodyAsString**
- Below are some available extension methods:
 - Date Conversion
 Syntax: \$dateUtil.convert(inputDate, fromPattern, toPattern)
 Parameters:
 - inputDate String
 - fromPattern String
 - toPattern String

Returns: String

Please refer <u>https://docs.oracle.com/javase/8/docs/api/java/text/SimpleDateFormat.html</u> for different patterns

Default Value

Syntax: \$custom.defaultValue(inputValue, defaultValue)
Parameters:

- inputValue Object
- defaultValue String

Returns: Object



Null Check

Syntax: \$custom.isNull(inputValue)

Parameters:

inputValue - Object

Returns: Boolean

- Random Number
 Syntax: \$mathUtil.getRandom()
 Returns: Object of Random class (java.util.Random)
- Xml Tool

Syntax: \$xml.methodName() Please refer <u>https://velocity.apache.org/tools/3.1/apidocs/org/apache/velocity/tools/generic/XmlTool.</u> html

> Date Tool

Syntax: \$date.methodName()

Please refer

https://velocity.apache.org/tools/3.1/apidocs/org/apache/velocity/tools/generic/DateTool. html

Json Tool

Syntax: \$json.methodName()

Please refer

https://velocity.apache.org/tools/3.1/apidocs/org/apache/velocity/tools/generic/JsonTool. html

Math Tool

Syntax: \$math.methodName()

Please refer

https://velocity.apache.org/tools/3.1/apidocs/org/apache/velocity/tools/generic/MathTool .html

> Number Tool

Syntax: \$number.methodName()

Please refer

https://velocity.apache.org/tools/3.1/apidocs/org/apache/velocity/tools/generic/NumberT ool.html



Escape Tool
 Syntax: \$esc.methodName()
 Please refer
 https://velocity.apache.org/tools/3.1/apidocs/org/apache/velocity/tools/generic/EscapeT
 ool.html

Serialization of object into its equivalent Json representation

Syntax: \$custom.toJson(src)

Parameters:

src - Object

Returns: String

Get additional field's value based on fieldname

Syntax: \$custom.getFieldValueById(jsonString, fieldname) **Parameters:**

- jsonString String
- fieldname String

Returns: String

Get list of additional fields based on fieldname prefix

Syntax: \$custom.getAdditionalFieldSetByType(jsonString,prefixval) **Parameters:**

- jsonString String
- prefixval String

Returns: List

• 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.



15.2 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 will be used to transform arbitrary XML to JSON.

15.3 **JSLT**

JSLT is a complete query and transformation language for JSON.



16 Oracle Banking Routing Hub Integration Specification

16.1 Token Generation

PlatoJWTAuth endpoint Signature -

- Path : /platojwtauth
- Headers:
 - > appld : SECSRV001
 - Content-Type : application/json
- Request Body:
 - {

```
"username": "",
```

"password": ""

}

- > Username and password will be base64 encoding of plaintext.
- Response Body:

```
{
  "token": "",
  "userAlreadyLoggedIn": "Y",
  "expires_in": 3180,
  "home_entity_id": "DEFAULTENTITY",
  "multi_entity_admin": "N",
  "multi_entity_admin_locale": ""
}
```

Example - Below are the screenshots

Headers

POS	T v whf00lse:7002/api-gateway/platojwtauth			Sen	d 🔹	
Parar Head	ns Authorization Headers (12) Body ●	Pre-request Script Tests Settings				Cookies Code
	KEY	VALUE	DESCRIPTION			
	кеү appld	VALUE SECSRV001	DESCRIPTION			



Request Payload

POST	▼ whf00lse:7002/api-gateway/platojwtauth	Send v Save v
Params Ai	rthorization Headers (12) Body Pre-request Script Tests Settings	
none	form-data 🔍 x-www-form-urlencoded 🌒 raw 🜑 binary 🔍 GraphQL JSON 🔻	
3 .	username": "VEVTVFVTRVIx", password": "VEVTVFVTRVIx"	1
4		

Response Payload



16.2 Synchronous Dispatch API Specification

Dispatch endpoint is the **single** entry-point for invoking the routes configured in Oracle Banking Routing Hub for services of a Service Consumer.

Dispatch endpoint Signature -

- Path : /route/dispatch
- Headers:
 - > appld : CMNCORE
 - > entityId : DEFAULTENTITY
 - > userId : <user id>
 - branchCode : <branch code>
 - Authorization : Bearer <Token>
 - > SERVICE-CONSUMER : <name of service consumer>
 - > SERVICE-CONSUMER-SERVICE : <name of service consumer service>
- Request Body:
 - Any valid JSON payload which shall act as input to the transformation template in request transformer.



```
Response Body:
{
    "data": {}
    "messages": {}
}
```

- If the route invocation succeeds, data JSON member would contain the transformed (optional) response of the provided service. If it's a provided web service and no response transformation template is supplied, XML Soap Body of response would be converted into JSON object and sent in data JSON member.
- If the route invocation fails due to misconfigured route or connection time out to ServiceProviderImpl or some other reason, relevant error messages would be sent in messages JSON member. In that case, data JSON member would be null or empty.

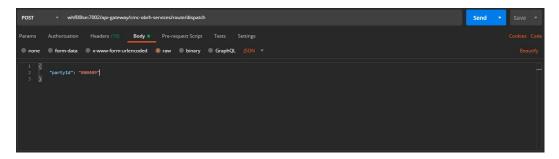
Example - Below are the screenshots of route dispatch for ServiceConsumer **Oracle_Service_Consumer** and ServiceConsumerService **List_Facilities**

Headers

•

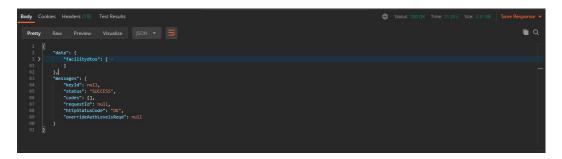
POS	r v whf00lse:7002/api-gateway/cmc-obrh-services/route/dispatch					Send v
Param	s Authorization Headers (17) Body Pre-request Script Test					
		VALUE	DESCRIPTION	oro Bul	k Edit	Presets 🗸
\checkmark	Content-Type	application/json				
\checkmark	appld	CMNCORE				
	entityld	DEFAULTENTITY				
	userid	TESTUSER1				
\checkmark	branchCode	004				
\checkmark	Authorization	Bearer ((token))				
\checkmark	SERVICE-CONSUMER	Oracle_Service_Consumer				
\checkmark	SERVICE-CONSUMER-SERVICE	List_Facilities				

Request Payload





Response Payload on Successful Dispatch



Response Payload on Failed Dispatch



16.3 Asynchronous Dispatch API Specification

Dispatch endpoint is the **single** entry-point for invoking the routes configured in Oracle Banking Routing Hub for services of a Service Consumer.

Dispatch endpoint Signature -

- Path : /route/dispatch
- Query Params:
 - ➢ isAsync : true
- Headers:
 - > appld : CMNCORE
 - entityId : DEFAULTENTITY
 - userId : <user id>
 - branchCode : <branch code>
 - Authorization : Bearer <Token>
 - > SERVICE-CONSUMER : <name of service consumer>



- > SERVICE-CONSUMER-SERVICE : <name of service consumer service>
- Request Body:
 - Any valid JSON payload which shall act as input to the transformation template in request transformer.
- Response Body:

```
{
   "data": { "correlationId" : "" },
   "messages": {}
}
```

Example - Below are the screenshots of route dispatch for

ServiceConsumer Oracle_Service_Consumer and ServiceConsumerService List_Facilities

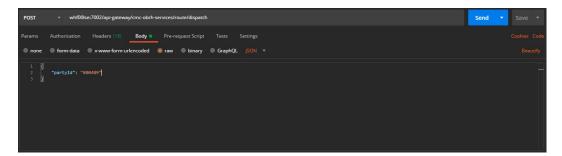
Query Params

POST	▼ whf00lse:7()02/api-gateway/c	mc-obrh-sen	vices/route/dispatch?is/	lsync=true				Send	•		
Params • Query Param		Headers (17)	Body 单	Pre-request Script	Tests	Settings						
KEY				VALUE				DESCRIPTION				
🖌 isAsync				true								

Headers

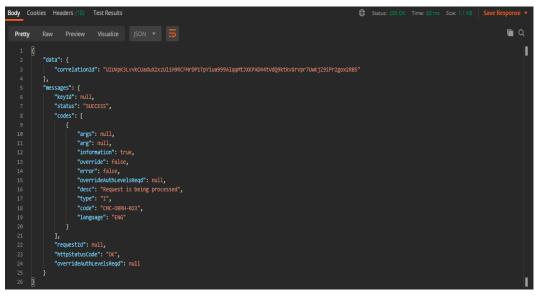
POST v whf00lse:7002/api-gateway/cmc-obrh-services/route/dispatch	'isAsync≈true			Send 🗸
Params Authorization Headers (17) Body Pre-request Script Te				
Headers 💿 9 hidden				
		DESCRIPTION	••• Bulk Edit	Presets \vee
Content-Type	application/json			
✓ appld	CMNCORE			
I entityld	DEFAULTENTITY			
✓ userId	TESTUSER1			
✓ branchCode	004			
Authorization	Bearer ({token}}			
SERVICE-CONSUMER	Oracle_Service_Consumer			
SERVICE-CONSUMER-SERVICE	List_Facilities			

Request Payload





Response Payload



16.4 Asynchronous Dispatch Response API Specification

Response endpoint Signature -

- Path : /route/dispatchResponse/{Correlation-Id}
 - > Correlation-Id will be coming from the response of dispatch endpoint.
- Headers:
 - > appld : CMNCORE
 - entityId : DEFAULTENTITY
 - > userId : <user id>
 - branchCode : <branch code>
 - Authorization : Bearer <Token>
- Response Body:

```
{
```

```
"data": {}
```

```
"messages": {}
```

}

If the route invocation succeeds, data JSON member would contain the transformed (optional) response of the provided service. If it's a provided web service and no response transformation template is supplied, XML Soap Body of response would be converted into JSON object and sent in data JSON member.



If the route invocation fails due to misconfigured route or connection time out to ServiceProviderImpl or some other reason, relevant error messages would be sent in messages JSON member. In that case, data JSON member would be null or empty.

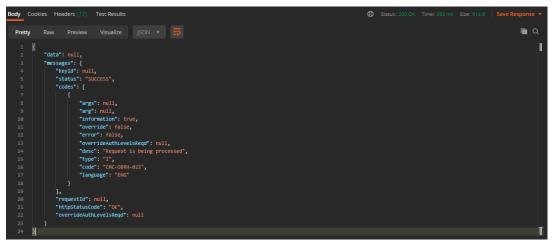
Example - Below are the screenshots of route dispatch for

ServiceConsumer Oracle_Service_Consumer and ServiceConsumerService List_Facilities

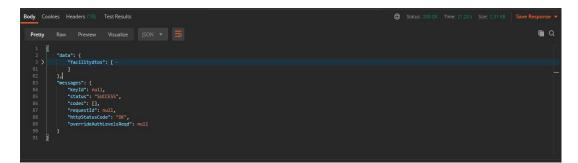
Headers

GET v whf00lse:7002/api-gateway/cmc-obrh-services/route/dispatchR	esponse/4WTTEvRceo3hfb8nd9wnql7uokPPSoLk2EyqjSeT8bA65vXWC2CGMyt	bEf1y8rGxar3BidzYGdVhq4mFQiHWVCVRb		iend v
Params Authorization Headers (15) Body Pre-request Script Tests	s Settings			
Headers 💿 9 hidden				
KEY	VALUE	DESCRIPTION	••• Bulk Edit	Presets \lor
Content-Type	application/json			
I appld	CMNCORE			
I entityld	DEFAULTENTITY			
Suserid	TESTUSER1			
✓ branchCode	004			
Authorization	Bearer ({token}}			

Response Payload when request is still processing



Response Payload when request is processed (on Successful Dispatch)







Response Payload when request is processed (on Failed Dispatch)



17 Oracle Banking Routing Hub VM Arguments

Common Core Managed Server

-Dcmc-obrh-services.server.port=<SERVER_PORT> -Dobrh.db.jndi=<CMNCORE_JNDI>

In order to receive routing failure mail notification via plato-alerts-management-service, then set the below property to true, Otherwise set it to false

-Dcmc-obrh-services.kafka.enabled=<KAFKA_ENABLED>

-Dcmc-obrh-services.kafka.server.path=<KAFKA_SERVER_PATH>

-Dcmc-obrh-services.zookeeper.server.path=<ZOOKEEPER_SERVER_PATH>

In order to use Custom Keystore and Truststore for HTTPS scheme,

-Dobrh.keystore.password.encoded=<IS_PASSWORD_ENCODED> (true, if password is base 64 encoded)

-Dobrh.truststore.path=<TRUSTSTORE_PATH>

-Dobrh.truststore.password=<TRUSTSTORE_PASSWORD>

-Dobrh.usekeystore=<USE_KEYSTORE> (true, if keystore is required along with truststore)

-Dobrh.keystore.path=<KEYSTORE_PATH>

-Dobrh.keystore.password=<KEYSTORE_PASSWORD>

-Dobrh.keystore.alias=<KEYSTORE_ALIAS>

-Dobrh.keystore.aliaspassword=<KEYSTORE_ALIAS_PASSWORD>

In order to do tomcat deployment,

-Dobrh.server.isJavaEE=false (mandatory)

-Dobrh.taskexecutor.corepoolsize=<CORE_POOLSIZE> (default is 50) (optional)

-Dobrh.taskexecutor.maxpoolsize=<MAX_POOLSIZE> (default is 50) (optional)

-Dobrh.taskexecutor.queuecapacity=<QUEUE_CAPACITY> (default is 100) (optional)

In order to set Proxy settings for HTTPS,

-Dhttps.proxyHost=<PROXY_HOST_NAME>

-Dhttps.proxyPort=<PROXY_PORT>

-Dhttps.nonProxyHosts=<NON_PROXY_HOST_LIST>

-Dhttp.nonProxyHosts=<NON_PROXY_HOST_LIST>



NOTE: 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).

In order to configure for SSL/Authentication enabled Kafka broker,

-Dspring.cloud.stream.kafka.binder.jaas.options.username=<Zookeeper user created for clients> -Dspring.cloud.stream.kafka.binder.jaas.options.password=<Zookeeper user encrypted password for clients>

-Dspring.cloud.stream.kafka.binder.configuration.ssl.truststore.location=<location of client trust store certificate>

-Dspring.cloud.stream.kafka.binder.configuration.ssl.truststore.password=<Pass code of client truststore certificate>

NOTE: Please refer Oracle Banking Microservices Platform Foundation Installation Guide.

In order to set logger level,

- Dplato.service.logging.level=<LOG_LEVEL>

In order to do SSL based SOAP provider calls and if RoutingHub is deployed on weblogic environment,

-DUseSunHttpHandler=true

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

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.

In order to import bigger files,

plato-api-gateway.multipart.max-file-size=<MAX_FILE_SIZE> (default is 1MB)

plato-api-gateway.multipart.max-request-size=<MAX_REQUEST_SIZE> (default is 10MB)

NOTE: -1 for no size constraint

Example: plato-api-gateway.multipart.max-file-size=-1 plato-api-gateway.multipart.max-request-size=-1

