Routing Hub Configuration User Guide Oracle Banking Electronic Data Exchange for Corporates Release 14.7.0.0.0

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Routing Hub Configuration User Guide November 2022

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 www.oracle.com/financialservices/

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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 <u>Structure</u>

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



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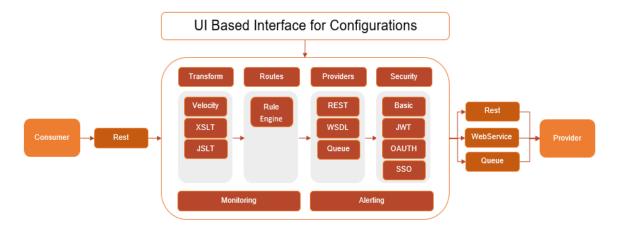
2. Introduction

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, multipart request.
- 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		

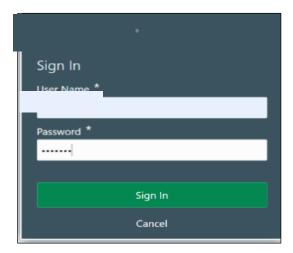


Service Providers	This are product processors available to serve the request send by Oracle Banking Routing Hub on behalf of Service Consumer	
Service	Are Soap Web Services imported through WSDL or Rest Web Services imported through Swagger	
Headers	Are headers require by product processor while sending request	



3. Start Maintenance - Login Screen

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



Component briefing						
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

Component br	riefing	JOHN DOE Johndoom@obrh.com
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

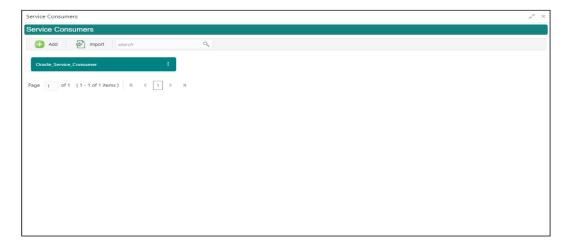


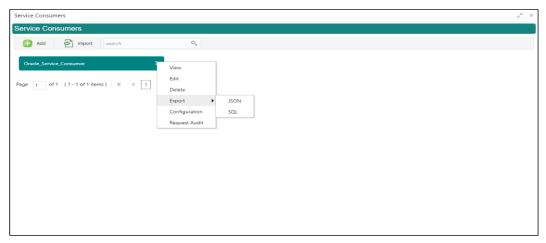
5. Service Consumer

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





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



Search	Combo Box One		Provides search functionality with case insensitive (Service Consumer Name)
Navigation: Serv	ice Consumers -> 3	dot icon (opera	tion 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 <u>Add</u>

User can create Service Consumer manually.

Service Consumers			$_{\mu}^{\nu}$ ×
Service Consumers			
Add Import sourch No items to display: Page 1 of 0 (1-0 of 0 items)	Add Service Consumer Name * Oracle_Service_Consumef Environment Variables Add * Group * select Actions Name No data to display.	Enter 0 or more characters 255. No numeric value allowed allowed. Value	



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		,* ×
Service Consumers		
Add Import search No items to display. Page of 0 (1 - 0 of 0 items) K < > >I	Add Service Consumer Name * Oracle-Service Consumer * Environment Variables * Add * Variable Variable No data to display. Save	



Service Consumers					,, ^{se} ×
Service Consumers					
Add import search No items to display.	Add Service Consumer		×		
Page 1 of 0 (1-0 of 0 items) K < > X	Add Environment G	iroup	255.	ters, up to a maximum of ved at beginning.No space	
	Actions No data to display.	Name	Value		

Service Consumers	
Service Consumers	
Service Consumers	able Enter 0 or more characters. up to a maximum of 255. No numeric value allowed at beginning.No space allowed.

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: Se	ervice Consum	ner -> Enviror	nment Variables	s -> 3 dot icon (ope	ration 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		, ² ×
Service Consumers		
🔂 Add 🛛 🔂 Import Search	Import Service Consumer ×	
No items to display. Page 1 of 0 (1-0 of 0 items) K < > >	File * Orade_Service_Consumer_Consume Select Estract Name * Orade_Service_Consumer Overwrite estended templates Overwrite estended templates Image: Consumer Ves No 4 Service Providers Image: Consumer Esternal_Product_Processor 1.0	



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
Overwrite extended templates	Radio Button	Yes				Predefined Values: Yes / No Yes: This option is for overwriting the extended templates in configuration and No: This option is for retaining the existing extended templates in configuration.
Service Provider	Collapsible Header & Content					Displays the list of service providers that are present in JSON file only



Import	Button					Imports Consumer	Service
--------	--------	--	--	--	--	---------------------	---------

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

- Implementation Host and Port
- Implementation Authentication Password

5.3 <u>View</u>

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			» ^{بر} ×
Service Consumers	View Service Consumer	₹×	
Add P Import search	Name		
Oracle_Service_Consumer	Oracle_Service_Consumer		
Page 1 of 1 (1-1 of 1 items) K < 1 > 3	Environment Variables Group COMMON Actions Name BRANCH_CODE	Value Sheaders["branchCode"[0]	

5.4 <u>Edit</u>

User can modify the consumer details. Navigation: Service Consumers -> Operation Menu (3 dot icon) -> Edit

Service Consumers				, ¹⁹ ×
Service Consumers				
🔂 Add 🛛 🔂 Import ora	0			
	Edit Service Consumer		>	(
Oracle_Service_Consumer	Name *			
Page 1 of 1 (1-1 of 1 items) K < 1 > >	Oracle_Service_Consume	r		
	A Environment Variables			
	🕂 Add 👻			
	Group *			
	select	•		
	Actions	Name	Value	
	No data to display.			
			Save	



5.5 <u>Delete</u>

User can delete the consumer. Navigation: Service Consumers -> Operation Menu (3 dot icon) -> Delete

Service Consumers			$\times \gamma_{\kappa}$
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		$\times \gamma_{\kappa}$
Cracle Service Consumer × Page 1 of1 (1-1 of 1 items) K < 1 > xi Mane Oracle Service Consumer × Mane × Oracle Service Providers × Name ×	Service Consumers		
Page 1 of 1 (1-1 of 1 kems) K I Variation Oracle_Service_Consumer Image: Service Providers Image: Service Providers			
Export		Oracle_Service_Consumer Service Providers Name External_Product_Processor 1.0	

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 <u>SQL Export</u>

User can export the consumer configuration as SQL file. Navigation: Service Consumers -> Operation Menu (3 dot icon) -> Export -> SQL

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

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

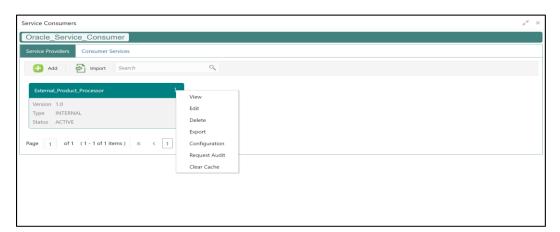


6. Service Providers

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
Oracle_Service_Consumer
Service Providers Consumer Services
Add 🔂 import search 🔍
External_Product_Processor I Version 1.0 Type Type EXTERNAL Status ACTIVE



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

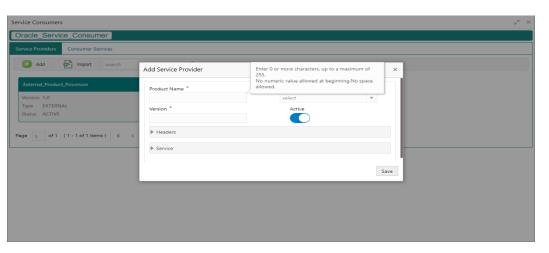


manually.

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
Configuration	menu option		Pops up configuration dialog
Request Audit	menu option		Pops up request audit log
Clear Cache	menu option		Clears SOAP client cache

6.1 <u>Add</u>

User can create Service Provider Navigation: Service Providers-> Add





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			$_{\mu^{\rm sc}} \times $
Oracle_Service_Consumer	Add Service Provider	×	
Service Providers Consumer Services			
🕒 Add 🔁 Import search	Product Name External_Proc	Enter 0 or more characters, up to a maximum of 255. No numeric value allowed at beginning.No space	
	Version * Name *	allowed.	
External_Product_Processor	1.0 Value		
Version 1.0 Type EXTERNAL	- Headers		
Status ACTIVE	+ Add		
Page 1 of 1 (1-1 of 1 items) K < 1	Actions		
Page 1 of I (I - I of I items) K < 1	No data to d	ОК	
	▶ Service		
		Save	

Service Consumers					× ^{بر} ×
Oracle_Service_Consumer	Add Service Provider		×		
Service Providers Consumer Services					
Add S Import search	Product Name * External_Product_Processor	Type	* ERNAL		
	Version *		Active	*	
External_Product_Processor	1.0		Cive		
Version 1.0	A Headers				
Type EXTERNAL Status ACTIVE	+ Add				
	Actions	Name	Value		
Page 1 of 1 (1-1 of 1 items) K < 1		appld	CMNCORE		
	Edit				
	▶ s Delete				
				Save	

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: Se	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

Service Consumers		$_{\mu^{b^{\prime}}}$ \times
Oracle_Service_Consumer		
Service Providers Consumer Services		
🔁 Add 🛃 Import search	Add Service Provider ×	
External_Product_Processor	▶ Headers	
Version 1.0 Type EXTERNAL Status ACTIVE		
Page 1 of 1 (1 - 1 of 1 items) K <	ElValidLimitService (ElValidLimitServiceSEI) QueryValidLimitIO	
	Save	



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 <u>WSDL</u>

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.

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 <u>SWAGGER</u>

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

Currently, Swagger 2.0 & OpenAPI 3.0 both are supported.

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 <u>OTHERS</u>

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



Service Consumers			, ⁹ ×
Oracle_Service_Consumer	Edit Service Provider	×	
Service Providers Consumer Services	If Service ■ Se	^	
🛃 Add 💮 import Search	OTHERS + Http Method * Endpoint *		
External_Product_Processor Version 1.0	Select 👻 Gateway Prefix 😨		
Type INTERNAL Status ACTIVE	▶ Service Headers		
Page 1 of 1 (1 - 1 of 1 items)	Service Query Params		
		Add	
	Service	Operation	
	ElValidLimitService (ElValidLimitServiceSEI)	QueryValidLimitIO	
		Save	

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

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	$p^{\ell} \to \infty$
Oracle_Service_Consumer	
Service Providers Consumer Services	
Add Dimport Search Q	
External_Product_Processor :	
Version 1.0 Type INTERNAL Stanus ACTIVE Page 1 of1 (1-1 of1 items) κ < 1 > χ	Import Service Provider × File * Oracle_Service_Consumer_Consumer_s Select Overwrite extended templates Ves No Import

Component b	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	
Overwrite extended templates	Radio Button	No			Predefined YesValues: NoYes:This option is for overwriting extended templates in configuration	



			No: This option retaining the extended tem configuration. Note: This option visible if ZIF selected	existing plates in on is only
Import	Button		Imports Provider	Service

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

- Implementation Host and Port
- Implementation Authentication Password

6.3 <u>View</u>

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			د محم
Oracle_Service_Consumer			
Service Providers Consumer Services			
Add Timport search	View Service Provider		₿ ×
External_Product_Processor Version 1.0 Type EXTERNAL Status ACTIVE Page 1 of1 (1-1 of 1 items) K	Product Name External_Product_Processor Version 1.0 I Headers	Type EXTERNAL Active On	
	Service FM/alutt imitCenvice (FIValutt imitCenviceCF	Operation El Ociaen/Valid i mittO	

6.4 <u>Edit</u>

User can modify the provider details. Navigation: Service Providers -> Operation Menu (3 dot icon) -> Edit



Service Consumers				,, st ×
Oracle_Service_Consumer				
Service Providers Consumer Services				
Add P Import search	Edit Service Provider		×	
External Product Processor Version 1.0 Type EXTERNAL Status ACTIVE Page 1 of1 (1-1 of 1 items) K <	Product Name * External_Product_Processor Version * 1.0 Headers Service Type URL	Type * EXTERNAL Active	Sare	

6.5 <u>Delete</u>

User can delete the provider. Navigation: Service Providers -> Operation Menu (3 dot icon) -> Delete

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



6.6 Export

User can export the provider configuration as JSON file. Menu Navigation: Service Providers -> Operation (3 dot icon) -> Export

	Shihpai Branch (004) Jun 25, 2020	JOHN DOE johndoem@obrh.com
Service Consumers		,, ¹⁰ ×
Oracle_Service_Consumer		
Service Providers Consumer Services		
H Add Maport search		
External_Product_Processor :		
Version 1.0 Type EXTERNAL	×	
Status ACTIVE Do you want to export? Note: Sensitive data such as Implementation Hos	st, Port and Password will not be exported	
Page 1 of 1 (1 - 1 of 1 items) K < 1	Confirm Cancel	

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

6.7 Configuration

End-user can configure the properties for failing the routing hub requests. Navigation: Service Providers -> Operation Menu (3 dot icon) -> Configuration

Service Consumers			* ×
Oracle_Service_Consumer			
Service Providers Consumer Services	Configuration (Service Provider	r: External_Product_Processor) ×	
H Add Import Search	▲ Timeout		
	Provider Level Timeout?	Connection Timeout *	
External_Product_Processor		Enter value in milliseconds	
Version 1.0	Read Timeout *		
Type INTERNAL	Enter value in milliseconds		
Status ACTIVE			
Page 1 of 1 (1-1 of 1 items) K < 1	▲ Exception		
	Handle exception?	Status Codes	
		Clear Reset Save	
			J



Component b	Component briefing					
Component Name	Component Type	ls Mandatory	Validation	Comments		
Provider level timeout	Swit ch			This property is used to override the global timeout values. Default value is false.		
Connection Timeout	Text Box	No	Value should be in milliseconds	This property is used to set the timeout in making the initial connection i.e. connection handshake.		
Read Timeout	Text Box	No	Value should be in milliseconds	This property is used to set the timeout on waiting to read data.		
Handle exception	Switch			This property is used to fail the routing hub request for failed provider requests. Default value is false.		
Status Codes	Text Box	No	Only 4xx and 5xx status codes are allowed as comma- separated values.	This property is used to fail routing hub request for specific status codes of failed provider requests. If not specified, then routing hub request will fail for all 4xx and 5xx status codes of failed provider requests.		



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.

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

Service Consumers						, ²		
Oracle_Service_C	Consumer > Service Provid	lers > External_Product_Processor	1.0					
Implementation								
Add P import Search Q								
Actions Name		Description	Service Name	Host	Port	Queue		
External_Pro	duct_Processor_Default	Default Implementation		XXXXX	0			
Page 1 of 1 (1-	1 of 1 items) $K < 1 \rightarrow 3$							
Service Consumers Oracle_Service_C Implementation			1.0			/		
Oracle_Service_C	Consumer > Service Provid mport Search	٩,						
Oracle_Service_C	mport Search	Q Description	1.0 Service Name	Host	Port	م م Queue		
Oracle_Service_C		C Description Default Implementation		Host	Port 0			

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: Im	plementation -> 3 dot ic	con (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
Configuratio n	menu option		Pops up configuration dialog
Request Audit	menu option		Pops up request audit log
Clear Cache	Menu option		Clears SOAP client cache

7.1 <u>Add</u>

User can create Implementation manually. Navigation: **Implementation-> Add**

Service Consumers					,,** ×
Oracle_Service_Consumer > Service Pro	Add Implementation	×			
Implementation		_ 1			
🔂 Add 🔁 Import Search	Name *				
Actions Name	Description *		Host	Port	Queue
External_Product_Processor_Default			20000	0	
Page 1 of 1 (1-1 of 1 items) K < 1 >	Type * Default Eureka Instance DEFAULT * Service Name * Select * Headers & Cansion	iave			



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				EurekaInstanceoptionisavailableonlyforinternalprovidersanddefaulttype.Bydefault,EurekaInstancewillbetoggledONforinternalprovidersandOFFforexternalproviders.be
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	No	Number	 Enter 0 or more characters, up to a maximum of 6. 	If Eureka Instance is toggled off and type is default, then only host and port is required.



			 Only numeric value allowed. 	
Authenticati on	Collapsible Header & Content			Authenticatio n option is available only when Eureka Instance is toggled OFF and type is default.
Headers	Collapsible Header & Content			Header option is available only when 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, OAUTH_TOKEN_OIC

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. In case of OIC integration, OAUTH_TOKEN_OIC needs to be set as Authentication Type. In case of JWT, OAUTH_TOKEN and OAUT_TOKEN_OIC, token will be cached by default.

Process of configuration of these is described below.

Service Consumers						$_{\mu}^{\mu}$ \times
Oracle_Service_Consumer > Service Pro	Edit Implementation		×			
Implementation	Default Implementation					
Actions Name	Scheme * Host *	Port	*	ervice Name	Host	Port
External_Product_Processor_Default Page 1 of 1 (1 - 1 of 1 items) K <	Authentication				20002	0
	NONE	~				
	BASIC					
	JWT_TOKEN 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 / OAUTH_TOKEN_ OIC			
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			$_{\mu }^{\mu } \times$
Oracle_Service_Consumer > Service Pro	viders > External_Product_Processor 1.0		
Implementation	Add Implementation ×		
Ingentierdaud	Add Imperimentation Authentication Add Header Sets Add Header Add Header Sets No numeric value allowed at beginning.No space Add Value OK Sere OK Sere	Host	Port 0
Service Consumers Oracle_Service_Consumer > Service Pro	viders > External_Product_Processor 1.0		* * ₈
Implementation	Add Implementation ×		
Add import search	Intelline in the second s		
Actions Name	Authentication	Host	Port
External_Product_Processor_Default	∡ Headers	XXXXX	0
	🕀 Add		
Page 1 of 1 (1-1 of 1 items) K < 1 >	Actions Name Value		
	Edit CMNCORE		
	Save		

Component briefing						
Component Name	Component Type	ls Mandatory	Data type	Validation	Comments	



Add	Button				Pops up add dialog				
Navigation: Implementation -> Headers -> 3 dot icon (operation menu)									
Edit	menu option				Pops up edit dialog				
Delete	menu option				Deletes header				
Navigation: Im	plementation	-> Headers ->	> Add						
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 header details and displays it in the list				

7.1.3 Service

Service Consumers						$_{\mu^{k'}}$ \times
Oracle_Service_	Consumer > Service Pro	viders > External_Produc	ct_Processor 1.0			
Implementation						
Actions	Import search Name External_Product_Processor_Default 1 of 1 items) K < 1 >	Service Type URL		×	Host	Port 0
		WSDL Service No data to display.	Operation	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 <u>WSDL</u>

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.

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 <u>SWAGGER</u>

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

Currently, Swagger 2.0 & OpenAPI 3.0 both are supported.

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 <u>OTHERS</u>

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



Service Consumers						× * ₄
Oracle_Service_Consumer > Service Pro	viders > External	Product Processor 1.0				
Implementation	Edit Implementation		×			
Add P Import Search	✓ Service		^			
Add import Search Actions Name I External_Product_Processor_Default Page 1 of 1 (1 - 1 of 1 items) K < 1 >	Type Name OTHERS V	*	_	Host	Port	Queue
External_Product_Processor_Default	Http Method * Endpo	int *		XXXXX	0	
Page 1 of 1 (1 - 1 of 1 items) K < 1 >	Select 🔹 Gateway Prefix 😨					
	Gateway Prenx W					
	Service Headers					
	Service Query Params					
	Service	Operation	Add			
		Operation				
	No data to display.					
			~			
			Save			

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	Yes		Predefined Values:					
	One			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

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 <u>Queue</u>

Service Consumers						$_{\mu^{k}}$ \times
Oracle_Service_Consumer > Service Pro	Add Implementation		×			
Implementation	Type *	Default				
🕂 Add 🖓 Import Search	QUEUE	• ())				
Actions Name	Queue Broker *	Request Reply Pattern *		Host	Port	Queue
	WEBLOGIC_JMS •	JMS_MESSAGEID	• I			Queue
External_Product_Processor_Default	A Request Queue			XODOX	0	
Page 1 of 1 (1 - 1 of 1 items) K < 1 >	Connection Factory *	Queue *				
	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 <u>Import</u>

implementation importing JSON User can create an by the file. User can also import zip file in order to import all the configuration JSON files together (except configuration JSON parent level files). Navigation: Implementation -> Import

Service Consumers								
Oracle_Service_	Oracle_Service_Consumer > Service Providers > External_Product_Processor 1.0							
Implementation								
🔂 Add	Import search Q							
Actions	Name		Description		Host	Port		
:	External_Product_Processor_Default		Default Implementation		XXXXX	0		
Page 1 of 1 (1-	1 of 1 items) K < 1 > 3	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
--------	--------	--	--	--	--	---------------------------

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

- Implementation Host and Port
- Implementation Authentication Password

7.3 <u>View</u>

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

Service Consumers					,,* ×
Oracle_Service_Consumer > Service Pro	viders > External_Product_Pro	cessor 1.0			
Implementation					
Add import search	View Implementation		l∎ ×		
Actions Name				Host	Port
External_Product_Processor_Default	Name	Default		XXXXX	0
	External_Product_Processor_Default	On			
Page 1 of 1 (1-1 of 1 items) K < 1 >	Description				
	Default Implementation				
	Scheme Host	Port			
	http xxxx	0			
	Authentication				
	Headers				

7.4 <u>Edit</u>

User can modify the implementation details. Navigation: Implementation -> Operation Menu (3 dot icon) -> Edit

Service Consumers				,,** ×
Oracle_Service_0	Consumer > Service Pro	viders > External_Product_Processor 1.0		
Implementation				
🔂 Add 🔂	Import search	Edit Implementation ×		
Actions	Name		Host	Port
:	External_Product_Processor_Default	Name * Default >	0000	0
Page 1 of 1 (1-	1 of 1 items) K < 1 >	Description * Default Implementation Scheme * Host * Nttp ¥ xxxxx 0	_	
		Save		



7.5 <u>Delete</u>

User can delete the implementation. Navigation: Implementation -> Operation Menu (3 dot icon) -> Delete

Service Consumers					$_{\mu^{k'}}$ \times			
Oracle_Service_	Oracle_Service_Consumer > Service Providers > External_Product_Processor 1.0							
Implementation								
🔂 bbA 🔁	Import search	Q						
Actions	Name		Description	Host	Port			
:	External_Product_Processor_De	fault	Default Implementation	XXXXX	0			
Page 1 of 1 (1-	1 of 1 items) K < 1	CONFIRMATION Do you want to delete the record?	K Confirm Cancel					



7.6 Export

User can export the implementation configuration as JSON file. Navigation: Implementation -> Operation Menu (3 dot icon) -> Export

Service Consumers								
Oracle_Service_0	Oracle_Service_Consumer > Service Providers > External_Product_Processor 1.0							
Implementation								
🔂 Add 🔂	Import search Q							
Actions	Name	Description	Host	Port				
:	External_Product_Processor_Default	Default Implementation	XXXXX	0				
Page 1 of 1 (1-	1 of 1 items) K < 1 CONFIRMATION Do you want to export? Note: Sensitive data such as Implementation Host	E Port and Password will not be exported						

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

7.7 Configuration

End-user can configure the property to disable the token caching. Navigation: Implementation -> Operation Menu (3 dot icon) -> Configuration

Service Consumers							
Oracle_Service_Consumer > Service Providers > External_Product_Processor 1.0							
Implementation Add Import Search	Configuration (Implementation: External_Product_Processor_Default)	<					
Actions Name	▲ Token	lame	Host	Port	Queue		
External_Product_Processor_Default Page 1 of1 (1-1 of1 items) K < 1 >	Disable cache		X000X	0	_		



Component briefing						
Component Name	Component Type	ls Mandatory	Validation	Comments		
Disable cache	Switch			This property is used to disable the token caching. Default value is false.		



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

Service Consumers			
Oracle Service			×
	e_Consumer		
Service Providers	Consumer Services		
🔂 Add 🗧	import search Q	2	
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 > >		
ervice Consumers			1
Oracle Service	e Consumer		
Sonico Providore			
Service Providers	Consumer Services		
🕀 Add 🗧	Consumer Services	٩	
🕂 Add 🗧	Consumer Services import search Name	۹	Description
Add Actions	Consumer Services Import search Name Facilities	2	Description This service fetches the list of facilities available for party id
Add Actions	Consumer Services import search Name	Q.	
Add Actions	Consumer Services Import search Name Facilities	2	
Add E	Consumer Services Import search Name Facilities	2	
Add E Actions : View Pag Edit Delete	Consumer Services import search Q Name	2	
Add Actions	Consumer Services import search Q Name	2	
Add Actions View Page Edit Delete Export Configuration	Consumer Services import search Q Name	2	
Add Actions View Page Edit Delete Export Configuration	Consumer Services import search Q Name	2	
Add Actions View Page Edit Delete Export Configuratio	Consumer Services import search Q Name	2	
Actions i View Peg Edit Delete Export Configuratio	Consumer Services import search Q Name	2	
Actions i View Pege Edit Delete Export Configuratio	Consumer Services import search Q Name	2	
Add Actions View Page Edit Delete Export Configuratio	Consumer Services import search Q Name	2	
Add Actions View Page Edit Delete Export Configuration	Consumer Services import search Q Name	2	
Add Actions I View Page Edit Delete Export Configuration	Consumer Services import search Q Name	2	

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: Cons	umer Services -> 3 do	t icon (operation me	nu)
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 <u>Add</u>

User can create Consumer Service manually.

Navigation: Consumer Services-> Add

Service Consumers						» ^{بر} ×	
Oracle_Service_Consumer							
Service Providers Consumer Services	Add Service		Enter 0 or mo	ore characters, up to a ma	ximum of		
Add import search			No numeric value allowed at beginning.No space allowed.				
Actions Name	1	4-)			
List_Facilities	Description *						
Page 1 of 1 (1 - 1 of 1 items) K < 1 >							
	+ Add						
	Actions	Attribute Name		json path			
	No data to display.						
				Save			

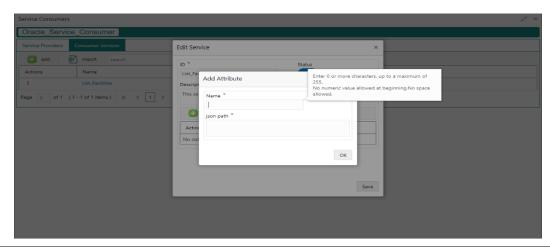


Component Name	Component Type	Is Mandatory	Data type	Validation	Comments
ld	Text Box	Yes	Alphanu meric with special character s	Name cannot be blank Enter 0 or more characters, up to a maximum of 255. No numeric value at beginning and no space allowed.	Unique Service Id
Status	Switch	Yes			Predefined Values: ACTIVE / INACTIVE If consumer service is marked as inactive, then all related routes will be stopped.
Description	Text Area	Yes	Alphanu meric with special character s	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				× * _* *
Oracle_Service_Consumer				
Service Providers Consumer Services	Edit Service		×	
Add import search	ID *	Sta	his	
Actions Name	List_Facilities			
E List_Facilities	Description *			
Page 1 of 1 (1-1 of 1 items) K < 1 >	This service fetche	s the list of facilities available for	party id	
	🕂 Add			
	Actions	Attribute Name	json path	
	Edit	ENTITY	S.body.entity	
	Delete			
			Save	



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



Navigation: Consumer Services -> Headers -> 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

- 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]
- Using \$.env, user can access environment variables. Syntax: \$.env.group.variable

8.2 <u>Import</u>

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	2 st ×
Oracle_Service_Consumer	
Service Providers Consumer Services	
🔂 Add 🖓 Import Search 🔍	
Actions Name	Description
E Line facilities Page 1 of1 (1-1of1items) K < 1 > ×	Import Service x File * Select Overwrite extended templates Yes Yes No

Component b	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		
Overwrite extended templates	Radio Button	Yes				Predefined Values: Yes / No Yes: This option is for overwriting the extended templates in configuration and No: This option is for retaining the existing extended templates in configuration.		
Import	Button					Imports Consumer Service		

8.3 <u>View</u>

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					, ^w
Oracle_Service_Consumer					
Service Providers Consumer Services	View Service		(z ×	
🕂 Add 🔂 Import search	ID	Status			
Actions Name	List_Facilities	On			
List_Facilities	Description				
Page 1 of 1 (1 - 1 of 1 items) K < 1 >	This service fetches the	list of facilities available for party i	d		
	Actions	Attribute Name	json path		
	No data to display.				

8.4 <u>Edit</u>

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 Simport search	ID *	Status		
Actions Name	List_Facilities	Status)	
E List_Facilities	Description *			
Page 1 of 1 (1-1 of 1 items) K < 1 >	This service fetches	the list of facilities available for party	/ id	
	🔂 Add			
	Actions	Attribute Name	json path	
	No data to display.			
			Save	
				·

8.5 Delete

User can delete the consumer service. Navigation: Consumer Services -> Operation Menu (3 dot icon) -> Delete



Service Consumers			,* ×
Oracle_Servic	e_Consumer		
Service Providers	Consumer Services		
🕂 Add	Import search	٩	
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		×
		Do you want to delete the	e record?
			Confirm Cancel

8.6 <u>Export</u>

User can export the consumer service configuration as JSON file. Navigation: **Consumer Services -> Operation Menu (3 dot icon) -> Export**

Service Consumers				* × *
Oracle_Service	Consumer			
Service Providers	Consumer Services			
🔂 Add 🛃	Import search	9		
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		×	
		Do you want to export?	1	
			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

ervice Consu	imers								
Oracle_Se	ervice_Consumer >	Consum	er Services > List_Facilities						
Transformatio	n Routing								
🕂 Add	Import search		٩,						
Actions	Name	Status	Product Processor	Implementation	Service				
List_Facilities_Trf_01 ACTIVE External_Product_Processor 1.0 EIValidLimitService(EIValidLimitServitAValidL									
Page 1 0	of 1 (1-1 of 1 items) K	< 1	к						
ervice Consu	imers								
		Consum	er Services > List Facilities						
Oracle_Se	ervice_Consumer >	Consum	er Services > List_Facilities						
Oracle_Se	ervice_Consumer >		er Services > List_Facilities						
Oracle_Se Transformation	ervice_Consumer >			Implementation	Service				
Oracle_Se	n Routing	1	Q.	Implementation					
Oracle_Se Transformation Add Actions View	n Routing im Routing im moort search Name List Facilities Trf_01	Status ACTIVE	Product Processor External_Product_Processor 1.0	Implementation	Service				
Oracle_Se Transformation Add Actions Usew Edit	rvice_Consumer > Routing Import search Name List.Facilities_Trf_01 1 items) K	Status ACTIVE	Product Processor External_Product_Processor 1.0	Implementation	Service				
Oracle_Se Transformation Add Actions View Pag Edit Delete	n Routing Import search Name List Facilities Trf_01 1 items) K	Status ACTIVE	Product Processor External_Product_Processor 1.0	Implementation	Service				
Oracle_Se Transformation Add Actions View Pag Edit Delete Export	rvice Consumer > n Routing import search Name List Facilities_Trf_01 f 1 items) K	Status ACTIVE	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	Product Processor External_Product_Processor 1.0	Implementation	Service				
Oracle_Se Transformation Add Actions E View Pag Edit Delete Export	rvice Consumer > n Routing import search Name List Facilities_Trf_01 f 1 items) K	Status ACTIVE	Product Processor External_Product_Processor 1.0	Implementation	Service				
Oracle_Se Transformation Add Actions E View Pag Edit Delete Export	rvice Consumer > n Routing import search Name List Facilities_Trf_01 f 1 items) K	Status ACTIVE	Product Processor External_Product_Processor 1.0	Implementation	Service				
View Pag Edit Delete Export	rvice Consumer > n Routing import search Name List Facilities_Trf_01 f 1 items) K	Status ACTIVE	Product Processor External_Product_Processor 1.0	Implementation	Service				
Oracle_Se Transformation Actions Pag Edit Delete Export	rvice Consumer > n Routing import search Name List Facilities_Trf_01 f 1 items) K	Status ACTIVE	Product Processor External_Product_Processor 1.0	Implementation	Service				
Oracle_Se Transformation Actions Pag Edit Delete Export	rvice Consumer > n Routing import search Name List Facilities_Trf_01 f 1 items) K	Status ACTIVE	Product Processor External_Product_Processor 1.0	Implementation	Service				
Oracle_Se Transformation Actions Pag Edit Delete Export	rvice Consumer > n Routing import search Name List Facilities_Trf_01 f 1 items) K	Status ACTIVE	Product Processor External_Product_Processor 1.0	Implementation	Service				
Oracle_Se Transformation Add Actions View Pag Edit Delete Export	rvice Consumer > n Routing import search Name List Facilities_Trf_01 f 1 items) K	Status ACTIVE	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					
<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	ransformation -> 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		Pops up request audit log

9.1 <u>Add</u>

User can create Transformation manually. Navigation: **Transformation-> Add**

Service Consumers Oracle_Service_Consumer	Add Transformation	Enter 0 to 255 characters. No numeric value allowed at beginning.t allowed.	No space	×	* ×
Transformation Routing Add import Search					
Actions Name	Product Processor * Select	Implementation Select v	Service * Select	Ŧ	
Elist_Facilities_Trf_01 Page 1 of 1 (1 - 1 of 1 items)	Service				veryValidLimitIO
	▶ Headers				
	Request Transformation				
	Response Headers				
	Response Transformation				
				Save	

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
Implementat ion	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		
Body Type	Combo Box One		Predefined Values: RAW / FORM_DATA
			Note: This option is only visible if selected service is REST service.
Туре	Combo Box One		Predefined Values: VELOCITY / JSLT / XSLT
Template	Text Area		User has to define the kernel template in which provider accepts.
			Refer Transformation Type for syntax and Multipart Request for sample request if body type is FORM_DATA
Extended Template	Text Area		User has to define the custom template in order to extend the kernel template.
			Please refer Extensibility and Transformation Type for syntax



			Note: This option is not visible if body type is FORM_DATA.
Response Headers	Collapsible Header & Content		Response Headers is used for specifying additional headers required to be part of routing hub response headers.
			Value can either be hardcoded or can be Velocity mapping.
Туре	Combo Box One		Predefined Values: VELOCITY / JSLT / XSLT
Template	Text Area		User has to define the kernel template in which consumer accepts. 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 (with extended template output if mentioned) to consumer without invoking provider API.
Mock Template	Text Area		User has to define the kernel mocked template in which consumer accepts.
			Refer Transformation Type for syntax
Extended Template	Text Area		User has to define the custom template in order to extend the kernel template.
			Refer Extensibility and Transformation Type for syntax



Save	Button				Saves details	transformation
------	--------	--	--	--	------------------	----------------

9.2 <u>Import</u>

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**

 Service Consumer:
 Consume

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			
Overwrite extended templates	Radio Button	Yes			Predefined Values: Yes / No Yes: This option is for overwriting the extended templates in configuration No: This option is for retaining the existing			
					extended templates in configuration.			
Import	Button				Imports Transformation			



9.3 <u>View</u>

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**

Service Consumers	View Transformation			¢	× ***
Oracle_Service_Consumer	Name List_Facilities_Trf_01		Active On		
Add import Search	Product Processor Product Processor	Implementation		Service	
List_Facilities_Trf_01	External_Product_Processor 1.0	Select		ElValidLimitService (ElValidLimitServ	ueryValidLimitIO
Page 1 of 1 (1 - 1 of 1 items)	▶ Service				
	▶ Headers				
	Request Transformation				
	Response Headers				
	Response Transformation				

9.4 <u>Edit</u>

User can modify the transformation details. Navigation: Transformation -> Operation Menu (3 dot icon) -> Edit

Service Consumers	Edit Transformation				×	,,* ×
Oracle_Service_Consumer	Name * List_Facilities_Trf_01		Active			
Actions Name	Product Processor Product Processor * External_Product_Processor 1.0	Implementation Select	Ŧ	Service * ElValidLimitService (ElValidLimitS	•	JeryValidLimitIO
Page 1 of 1 (1-1 of 1 items)	Service Headers					
	Request Transformation					
	Response Headers Response Transformation					
					Save	

9.5 Delete

User can delete the transformation. Navigation: Transformation -> Operation Menu (3 dot icon) -> Delete



Service Consu	umers				2 ¹⁴ ×
Oracle_S	ervice_Consumer >	Consum	er Services > List_Facilities		
Transformatio	on Routing				
Add	Import search		9		
Actions	Name	Status	Product Processor	Implementation	Service
:	List_Facilities_Trf_01	ACTIVE	External_Product_Processor 1.0		ElValidLimitService (ElValidLimitServiceSEI) - QueryValidLimitIO
Page 1	of 1 (1 - 1 of 1 items) K	< 1	CONFIRMATION Do you want to delete the record?	c	Cancel

9.6 Export

User can export the transformation configuration as JSON file. Navigation: **Transformation -> Operation Menu (3 dot icon) -> Export**

Service Consu	Service Consumers							
Oracle_S	Oracle_Service_Consumer Consumer Services > List_Facilities							
Transformatic	on Routing							
Add	Import search		Q					
Actions	Name	Status	Product Processor	Implementation	Service			
:	List_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			
				C	onfirm 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

ervice Consumers					
Dracle_Service_Consume	r > Consu	imer S	ervices > List_Facilities		
ransformation Routing					
Add search	0,				
Actions Name	Start/Stop	Rule	Product Processor	Implementation	Service
List_Facilities_Route_01	۲		External_Product_Processor 1.0	External_Product_Processor_Default	ElValidLimitService (ElValidLimitServiceSEI) - QueryValidLimitIO
age 1 of 1 (1-1 of 1 items)	К < 1	> >	4		
Dracle_Service_Consume	r > Consu	mer Se	ervices > List_Facilities		
Dracle_Service_Consume	r > Consu		arvices > List_Facilities		
Oracle_Service_Consume ransformation Routing Add search			Product Processor	Implementation	e ^{re} Service
Pracle_Service_Consume ransformation Routing Add search Actions Name in the Footbace floate_01	٩			Implementation External_Product_Processor_Default	Service EValidLimitServiceSEI) - QueryValidLimitIO
Add search Actions Name	C. Start/Stop	Rule	Product Processor External_Product_Processor 1.0		Service

Component briefing						
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 <u>Add</u>

User can create Routing manually. Navigation: **Routing -> Add**

Service Consumers				,* ×
Oracle_Service_Consumer	Add Route			×
Transformation Routing	Name *	Start/Stop	Auto Shutdown	
Add search		START STOP		
Actions Name	Default Rule Ocustom Rule			
List_Facilities_Route_01	⊿ Rule			LimitServiceSEI) - QueryValidLimitIO
Page 1 of 1 (1 - 1 of 1 items)	Expression <i>Editor</i> *			
	Transformations			
	🕂 Add			
	Actions Product Processor	Implementation	Transformation	
			Save	

Component briefing						
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 ×
Oracle_Service_Consumer	Add Route			×
Transformation Routing	Name *	Start/Stop	Auto Shutdown	
Add search		START STOP		
Actions Name : List_Facilities_Route_01	 Default Rule Custom Rule 			
List_Facilities_Route_01	⊿ Rule			LimitServiceSEI) - QueryValidLimitIO
Page 1 of 1 (1-1 of 1 items)	Expression Editor *			
	Transformations			
	🕀 Add			
	Actions Product Processor	Implementation	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					,, ³⁴ ×
Oracle_Service_Cor	Expression Editor	s i lat Esalutio			×
Add search	Attribute *	Operator *	Value *	Condition Type	×
List_Facilities_Ro	select	▼ select	Ŧ	select	▼ sSEI) - QueryValidLimitIO
Page 1 of 1 (1-1 of					
				S	ave

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					
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						$_{\mu^{n'}} \times$
Oracle_Service_Consumer	> Consumer S	Services > List_Facilities				
Transformation Routing	Add Route				×	
Add search	O Default Rule	 Custom Rule 				
Actions Name						
EList_Facilities_Route_01	Expression Editor	*			LimitServiceSEI) - QueryValio	LimitIO
Page 1 of 1 (1 - 1 of 1 items)						
	A Transformations					
	🔂 Add					
	Actions	Product Processor	Implementation	Transformation		
	No data to display.					
					Save	
Service Consumers						
Oracle_Service_Consumer	> Consumer S	Services > List Facilities				
Transformation Routing	Add Transformatio				×	
+ Add search	Product Processor *		Implementation *			
Actions Name	select	-	select	*		
List_Facilities_Route_01	Transformation *				LimitServiceSEI) - QueryValio	LimitIO
Page 1 of 1 (1-1 of 1 items)	select	•				
	Headers					
	Product Processor Service					
	Service					
	Request Transform	nation				
	Response Transfor	mation				
					ок	

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 <u>View</u>

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					». پر ا
Oracle_Service_Consumer	View Route			e ×	
Transformation Routing Add search	Name List_Facilitie	s_Route_01 ST	t/Stop Auto Shu ART STOP Off	tdown	
Actions Name : List_Facilities_Route_01	 Default F Transform 	Rule O Custom Rule			LimitServiceSEl) - QueryValidLimitlO
Page 1 of 1 (1 - 1 of 1 items)	Actions	Product Processor	Implementation	Transformation	
	:	External_Product_Processor 1.0	External_Product_Processor_Default	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 * List_Facilities_Route_01 Default Rule Custom Rule	Start/Stop Auto Shu START STOP	ıtdown	
EList_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 <u>Delete</u>

User can delete the routing. Navigation: Routing -> Operation Menu (3 dot icon) -> Delete



Routing

Service Cor	Service Consumers					
Oracle_	Service_Consumer	> Consu	mer Se	ervices > List_Facilities		
Transforma	ation Routing					
- Add	d search	٩,				
Actions	Name	Start/Stop	Rule	Product Processor	Implementation	Service
:	List_Facilities_Route_01	۲		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.

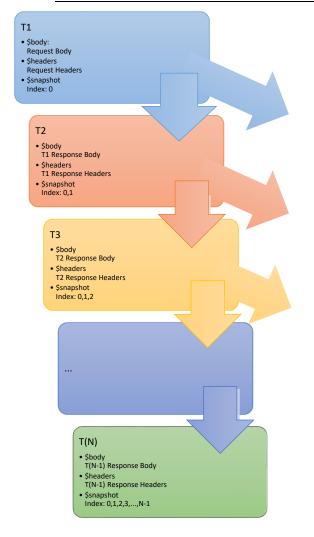
Snapshot list stores the response body and response headers whenever the transformation is processed.

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

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



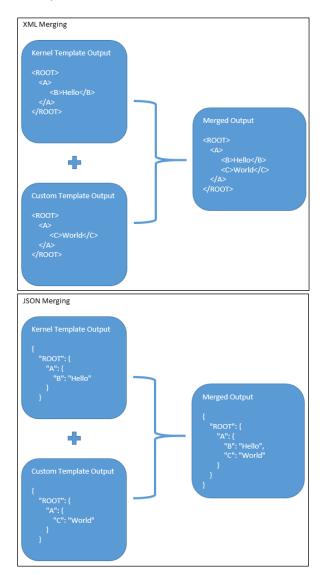
Snapshot List							
Index	body	headers					
0	Request Body	Request Headers					
1	T1 Response Body	T1 Response Headers					
2	T2 Response Body	T2 Response Headers					
3	T3 Response Body	T3 Response Headers					



12. Extensibility

Extensibility in Routing Hub refers to template extensibility and is achieved by specifying the extended templates for request and response kernel transformation templates. And as part of extensibility, Routing Hub merges the output of kernel template and custom template in terms of JSON / XML merging. In case of request, Routing Hub will send the merged output as request payload to provider. In case of response, Routing Hub will return the merged output as response back to consumer

Example:





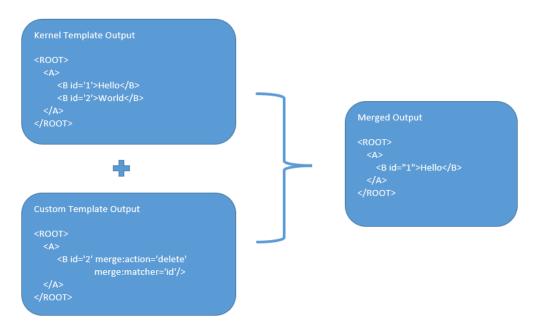
12.1 XML merging attributes

12.1.1 Match strategy

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

Syntax: merge:matcher='<ATTRIBUTE_NAME>'

Example:



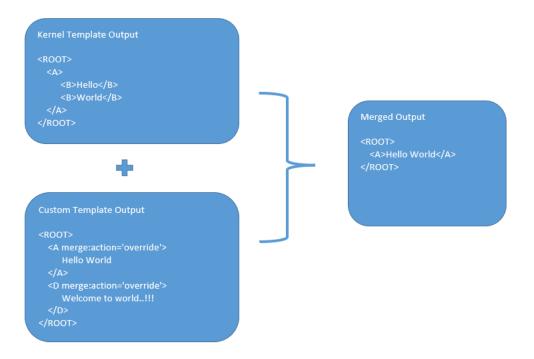
12.1.2 Override

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

Syntax: merge:action='override'

Example:



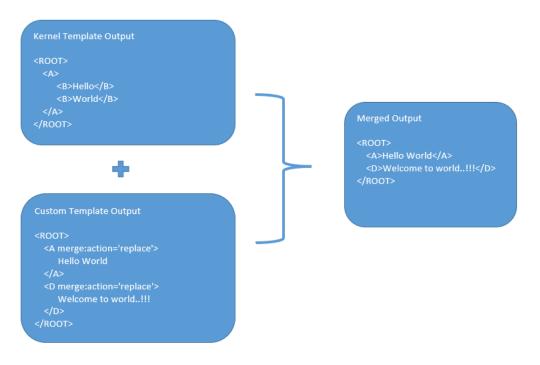


12.1.3 Replace

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

Syntax: merge:action='replace'

Example:





12.1.4 Delete

Deletes the original element. Syntax: merge:action='delete' Example:

ROOT>	
<a>	
<b id="1">Hello	
<b id="2">World	
	Merged Output
110012	
	<root></root>
	<a>
	<b id="1">Hello
Custom Template Output	
<root></root>	
<a>	
<b <="" id="2" merge:action="delete" td=""><td></td>	
merge:matcher='id'/>	



13. Audit purging / archiving

Purging/Archiving of audit data is done on the basis of retention policy. This process uses plato-batch-server for Job execution.

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

1. Open "Configure Tasks" screen (Task Management -> Configure Tasks)

2. Select "Schedule" option

3. Select "Task Name" as routingHubAuditRetentionJob and "Task Trigger Name" will be generated automatically

4. Specify the CRON expression to daily EOD

In order to resolve table space issue of Audit table (CMC_RH_AUDIT_EVENT_LOG), Database Management Team has to configure database job which should be triggered after routingHubAuditRetentionJob.

This database job can be redefining the table (DBMS_REDEFINITION) after purging/archiving is done or other approach.

So, unused LOB segment space can be released.

And in order to resolve table space issue of Audit history table (CMC_RH_AUDIT_EVENT_LOG_HISTORY), Database Management Team has to configure database job to truncate table periodically basis.



14. Multipart request

```
Below is the sample template for multipart request:
[
{
    {
        "key": "file",
        "type": "FILE",
        "value": "$body.files.get(0).file"
    },
    {
        "key": "name",
        "type": "TEXT",
        "value": "$body.name"
    }
]
```



15. Configuration

End-user can configure the properties w.r.t. monitoring, alert and export. End-user can configure the same at System level and granular levels such as Consumer, Consumer Service and Routing.

Navigation: Core Maintenance -> Routing Hub -> Configuration

Configuration								$ _{\mu^{k'}} \times$
Monitoring								
Window Type Count Time			Window Size	~	^			
Alert								
Minimum number of calls			Failure rate threshold					
100	× -	^	50%	~	^			
Email Alert Email Addresses								
▲ Export								
Mark data as factory shipped								
						Clear	Reset	Save

Component	Component briefing							
Compone nt 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.



16. Audit Log

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

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

Request Audit									,* ×
Log Summary									
Request Id			Consumer			Consumer Service			
Provider			Provider Imp	lementation		Provider Service			
Transformation			Route			User Id			
Search									
Request Id (Consumer	Consumer Service F	Provider	Provider Implementation	Provider Service	Transformation	Route	Status	User Id
No data to display.									
Page 1 of 0 (1	- 0 of 0 items)	к < > я							

Request Audit						,,* ×
Log Summa Request Id	ary		Request Audit Details ×			
Provider			Request Id YsRd9we7Ge1ZsRd9we7Ge10tRd9we7Ge11tRd9we7Ge12tRd9we7Ge13tRd9we7Ge14tRd9we7Ge15tRd9w e7Ge16tRd9we7Ge17tRd9we7Ge18tRd9we7Ge19tRd9we7Ge1			
Transformation			OBRH Request Provider Request Provider Response OBRH Response			
Search			2022-11-04T14:28:23.568+05:30 Time Taken			
Request Id	Consumer	Consumer Ser	00:00.30	Route	Status	User Id
YsRd9we7Ge	Oracle_Servic	List_Facilities	Message	List_Facilities	FAILURE	TESTUSER2
WjTi0bb7Ge1	Oracle_Servic	List_Facilities	{ "headers": {},	List_Facilities	FAILURE	TESTUSER2
Page 1 of 1	(1 - 2 of 2 items)	К (1	"body": { "data": null,			



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: Case insensitive Pattern matching Single / Multi Column search 	Performs search operation with specified values					

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.



17. Audit Summary

Audit summary screen will show top 5 long running provider requests of each provider for specific date range.

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

					,	× :
	To date *					
i	11/04/22	iii	Search			
Consumer Service	Provider	Provider Version	Provider Service	Request Id	Time Taken	
List_Facilities	External_Product_Pr	1.0	{http://elvalidlimitservice	CPMyxgTAie1DPMy	46528	
List_Facilities	External_Product_Pr	1.0	{http://elvalidlimitservice	omBGfDjz7e1pmB	20309	
List_Facilities	External_Product_Pr	1.0	{http://elvalidlimitservice	aZmLBU0Aie1bZmL	5720	
List_Facilities	External_Product_Pr	1.0	{http://elvalidlimitservice	g2FGkd0Bie1h2FGk	5435	
List_Facilities	External_Product_Pr	1.0	{http://elvalidlimitservice	kcrLVUYzie1lcrLVUY	4176	
	Consumer Service List_Facilities List_Facilities List_Facilities List_Facilities	11/04/22 Consumer Service Provider List_Facilities External_Product_Pr List_Facilities External_Product_Pr List_facilities External_Product_Pr List_facilities External_Product_Pr	11/04/22Consumer ServiceProviderProviderProvider VersionList_FacilitiesExternal_Product_PrList_FacilitiesExternal_Product_PrList_FacilitiesExternal_Product_PrList_FacilitiesExternal_Product_PrList_FacilitiesExternal_Product_Pr	Int/04/22 Search Consumer Service Provider Provider Version Provider Service List_Facilities External_Product_Pr 1.0 (http://elvalidlimitservice List_Facilities External_Product_Pr 1.0 (http://elvalidlimitservice List_Facilities External_Product_Pr 1.0 (http://elvalidlimitservice List_Facilities External_Product_Pr 1.0 (http://elvalidlimitservice	Intrody/22 Search Consumer Service Provider Provider Version Provider Service Request Id List_Facilities External_Product_Pr 1.0 (http://elvalidlimitservice) OPM/xgTAie1DPMy List_Facilities External_Product_Pr 1.0 (http://elvalidlimitservice) omBGfDj2re1pmB List_Facilities External_Product_Pr 1.0 (http://elvalidlimitservice) ozrLBU0Aie1bZmL List_facilities External_Product_Pr 1.0 (http://elvalidlimitservice) ozrLBU0Aie1bZmL	To date * Search 11/04/22 Search Consumer Service Provider Provider Service Request Id List_Facilities External_Product_Pr 1.0 (http://elvalidlimitservice g2FGkd0Bie1h2FGk 5435

This screen requires summary job to be executed using plato-batch-server periodically basis.

Below steps are required to schedule summary job (routingHubAuditSummaryJob) once cmc-obrhservices and plato-batch-server is UP and RUNNING:

- 1. On Home Screen, Click Task Management
- 2. Under Task Management, Click "Configure Tasks"
- 3. Select "Schedule" option
- 4. Select "Task Name" as routingHubAuditSummaryJob and "Task Trigger Name" will be generated automatically.
- 5. Specify the CRON expression to daily EOD

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

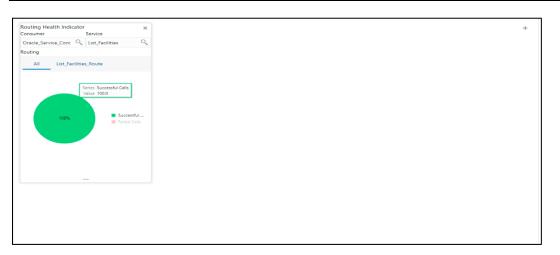


18. Dashboard

18.1 Routing Health Indicator Widget

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

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





19. Transformation Type

19.1 Velocity

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

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

https://velocity.apache.org/tools/3.1/apidocs/org/apache/velocity/tools/generic/XmITool. 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.

19.2 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.



19.3 JSLT

JSLT is a complete query and transformation language for JSON.



20. Oracle Banking Routing Hub Integration Specification

20.1 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

PO	POST v whf00lse:7002/api-gateway/platojwtauth						Send	▼ Save ▼	
Para	ams Authoriz	ation Headers (12)	Body 🔍 Pre-r	request Script T	ſests 😑	Settings			Cookies Code
Hea	iders 💿 9 hidd								
	KEY		VA	LUE			DESCRIPTION		lk Edit 🛛 Presets 🔻
~	appld		SE	ECSRV001					
~	Content-Type		ар	pplication/json					



Request Payload

POST	whf00lse:7002/api-gateway/platojwtauth	Send v Save v
Params	Authorization Headers (12) Body Pre-request Script Tests Settings	Cookies Code
none	● form-data ● x-www-form-urlencoded ● raw ● binary ● GraphQL _ JSON ▼	Beautify
1 { 2 3	"username": "VEVTVFVTRVIx", "password": "VEVTVFVTRVIx"	I
4 }		Т

Response Payload

Body	Cooki	es Head	lers (14)	Test Results			٩	Status: 200 OK	Time: 449 ms Size: 822 B	Save Response 🗸
Pret	tty	Raw	Preview	Visualize	JSON					🖺 Q
1 2						JZdKIDIJURVMUVVRUJELICHANQIDIJURUILCHOVQLOJEZVTKINEANODOSINVACCIBNTVYNTURDAANBO. USIRUSIJCHJBUZ-OVQESINQAAZEEQNBVMCPARQMEQ",				ľ
3		"userAlr	eadyLogged	dIn": "Y",						
4		"expires	_in": 5769	9842,						
5		"hone_en	tity_id":	"DEFAULTENTIT	Υ",					
6		"multi_e	ntity_admi	in": "N",						
7		"multi_e	ntity_admi	in_locale": ""						
8	}									T

20.2 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 -

- Method: POST / GET
- 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/XML payload which shall act as input to the transformation template in request transformer.
- Response Body:

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



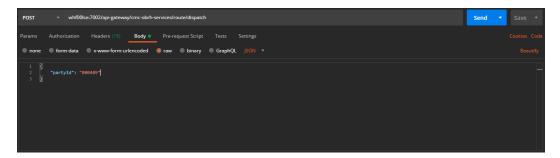
- If the route invocation succeeds, data JSON member would contain the transformed (optional) response of the provided service. If it's a provided web service and no response transformation template is supplied, XML Soap Body of response would be converted into JSON object and sent in data JSON member.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

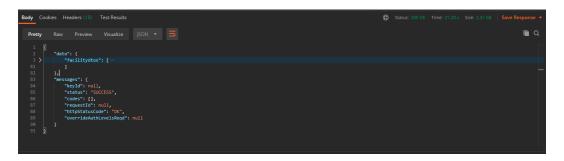
Headers

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

Request Payload



Response Payload on Successful Dispatch



Response Payload on Failed Dispatch



Body						¢		
Pretty								🖻 Q
	"sta "cod	<pre>is": { fd": null, tus": "FAILURE", iss": [</pre>	sReqd": null,					1
19 >								
	"htt) pestId": null, pStatusCode": "BAD_RE(rrideAuthLevelsReqd":						
								T

20.3 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/XML 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



<u> </u>	Promi									Params				
PO	ST		whf00lse:	7002/api-gateway/c	mc-obrh-servi	ices/route/dispatch?isA	sync=true				Send	•		
Para	ims 🔍	Auth	orization	Headers (17)	Body 🔵	Pre-request Script	Tests	Settings						
Que	ry Param													
	KEY					VALUE				DESCRIPTION				
~	isAsync					true								

Headers

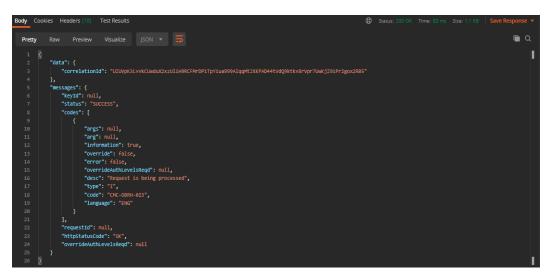
POST v whf00lse:7002/api-gateway/cmc-obrh-services/route/dispatch/	?isAsync=true			Send v
Params Authorization Headers (17) Body Pre-request Script Te				
Headers 🛛 🐵 9 hidden				
		DESCRIPTION	••• Bulk Edit	Presets \sim
Content-Type	application/json			
✓ appld	CMNCORE			
I entityId	DEFAULTENTITY			
✓ userId	TESTUSER1			
J branchCode	004			
Authorization	Bearer ((token))			
SERVICE-CONSUMER	Oracle_Service_Consumer			
SERVICE-CONSUMER-SERVICE	List_Facilities			

Request Payload

POST	v whf00lse:7002/api-gateway/cmc-obrh-services/route/dispatch	Send - Save -
	Authorization Headers (16) Body Pre-request Script Tests Settings	Cookies Code
none	© form-data	Beautify
1 K 2 J	"partyId": "000409"	



Response Payload



20.4 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 \geq
 - entityId : DEFAULTENTITY \geq
 - \geq userId : <user id>
 - branchCode : <branch code> \geq
 - Authorization : Bearer < Token>
- **Response Body:** .

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

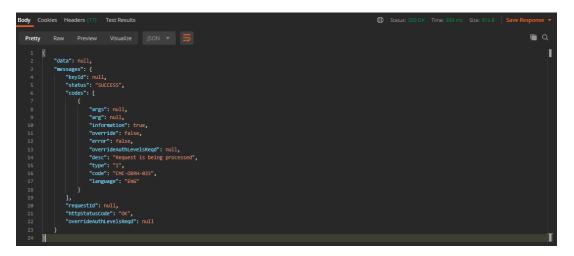
- \geq If the route invocation succeeds, data JSON member would contain the transformed (optional) response of the provided service. If it's a provided web service and no response transformation template is supplied, XML Soap Body of response would be converted into JSON object and sent in data JSON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

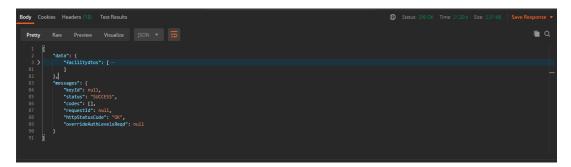


Haadara			_	_
GET v whf00lse:7002/api-gateway/cmc-obrh-services/route/dispatchR	esponse/4WTTEvRceo3hfb8nd9wnql7uokPPSoLk2EyqjSeT8bA65vXWC2CGMyb	Ef1y8rGxar3BidzYGdVhq4mFQiHWVCVRb		Send v
Params Authorization Headers (15) Body Pre-request Script Tests	s Settings			
Headers 🐵 9 hidden				
	VALUE	DESCRIPTION	••• Bulk Edi	t Presets ~
Content-Type	application/json			
✓ appld	CMNCORE			
✓ entityId	DEFAULTENTITY			
✓ userId	TESTUSERI			
✓ 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)



20.5 Template evaluation API Specification

Template evaluation endpoint will return the evaluated output of transformation template. End-user can validate the template based on the returned output.

Template evaluation endpoint signature -

- Method: POST
- Path : /template/evaluate
- 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>
 - > SERVICE-TRANSFORMATION : <name of service transformation>
- Query Parameters:
 - transformationType : REQUEST / RESPONSE / MOCK_RESPONSE Note: Default value is REQUEST if not specified
- Request Body:
 - Any valid JSON / XML payload which shall act as input to the transformation template in request transformer.
- Response Body:

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



21. Oracle Banking Routing Hub VM Arguments

Common Core Managed Server

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

-Dcmc-obrh-services.oic.oauth.scope=<OIC_OAUTH_SCOPE>

-Dcmc-obrh-services.oic.secretStore.url=<OIC_SECRET_STORE_URL>

-Dcmc-obrh-services.oic.idcs.url=<OIC_IDCS_URL>

-Dcmc-obrh-services.audit.retention.days=<AUDIT_RETENTION_POLICY_DAYS>

-Dcmc-obrh-services.audit.retention.archival=<AUDIT_RETENTION_POLICY_APPROACH> (Y for archiving and N for purging)

In order to receive routing failure mail notification via plato-alerts-management-service, then set the below Property to true, (Default value is false) -Dobrh.alerts.enabled=<ALERTS_ENABLED>

In order to change the behavior of auditing, then set the below property from predefined values (DEFAULT / KAFKA / LOG / OFF), (Default value is DEFAULT) -Dobrh.audit.type=<AUDIT_TYPE>

For KAFKA option, cmc-obrh-kafka-consumer service needs to be deployed.

In order to overwrite the customization that is not part of configuration json, -Dobrh.import.overwrite=<IMPORT_OVERWRITE> (Default value is false)

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>

-Dobrh.ssl.protocol=<SSL_PROTOCOL> (Default value is TLS)

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 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

CMC-OBRH-KAFKA-CONSUMER

-Dcmc-obrh-kafka-consumer.server.port=<SERVER_PORT>

