

Troubleshooting Guide

Oracle Banking Branch

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Troubleshooting Guide

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Contents

1	Introduction	1
1.1	About this Guide	1
1.2	Audience	1
1.3	Document Accessibility	1
1.4	List of Topics	1
1.5	Prerequisites for End Users	2
1.6	General Prevention	2
1.7	Best Practices	2
2	Troubleshooting Technical Flows	3
2.1	Where is the Problem	3
2.2	Preliminary Checks from UI	4
2.3	Preliminary Checks from Service Log Files	6
2.4	Troubleshooting using Zipkin Traces	7
2.4.1	Setting Zipkin Server	7
2.4.2	Troubleshooting Procedure	7
2.4.3	Zipkin Issues	11
2.5	Troubleshooting Logs using ELK Stack	13
2.5.1	Setting up ELK	13
2.5.2	Accessing Kibana	15
2.5.3	Searching for Logs in Kibana	15
2.5.4	How to Export Logs for Tickets	15
2.6	Troubleshooting Environmental Issues	16
2.6.1	Possible Issues While Deploying Services	16
2.6.2	Possible Issues In Login and Screen Launch	16
3	Health Checks and Verifications	19
3.1	WebLogic	19
3.1.1	Unable to Login To Weblogic Console	19
3.1.2	Unable to Stop a Service	20
3.1.3	GC Overhead limit exceeded/OutOfMemoryException error	20
3.1.4	Managed Server is Failed or Not Reachable	22
3.1.5	weblogic.application.ModuleException Error	22
3.2	Application Services	23
4	Troubleshooting Functional Workflows	30
4.1	Oracle Banking Branch – Subdomains	30
4.2	Cash Deposit – High Level Flow Diagram	31
4.2.1	First Level Issues	32
4.2.2	Transaction Data Verification	36

4.3	Process Log Table Update.....	37
4.4	Payment Service Integration Troubleshooting.....	37
4.4.1	Screen is Not Launching.....	37
4.4.2	Submit is Failing.....	37
4.4.3	Accounting Call to FLEXCUBE Universal Banking is Failing.....	39
4.4.4	Oracle Banking Payments Call is Failing.....	39
4.4.5	Error During Transaction Submission.....	40
4.4.6	RM-TX-PM-01 - OBPAY Transaction Status Failure.....	40
4.5	Oracle Banking Routing Hub configuration.....	41
4.6	Purging and Archival.....	41
4.7	Process Runtime Screens Troubleshooting.....	42
4.7.1	Possible Issues in Process Runtime Flow Screens.....	42
4.7.2	Additional Details.....	45
5	Error Codes.....	46
6	Appendix A: Acronyms, Abbreviations, and Definitions.....	66
7	Appendix B: Related Documentation.....	67

1 Introduction

1.1 About this Guide

This guide provides guidance to users for the issues within the application. It describes various methods to troubleshoot the issues.

1.2 Audience

This guide is intended for the implementation teams.

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 List of Topics

This manual is organized into the following topics:

Table 1: List of Topics

Topic	Description
Troubleshooting Technical Flows	Explains the Oracle Banking Micro services Architecture (OBMA) platform wide troubleshooting of technical flows. This includes User Interface (UI) side checking, Service side logs, tracing using Zipkin, debugging with the use of ELK stack, and environment issues of WebLogic.
Health Checks and Verifications	Explains the health check measures and observability required. This topic is applicable for OBMA platform wide troubleshooting.
Troubleshooting Functional Workflows	Explains the troubleshooting functional workflows applicable to Oracle Banking Branch.
Error Codes	Provides the list of possible error codes, messages, and type.
Appendix A	Provides the list of acronyms/abbreviations used in this guide
Appendix B	Provides the list of related documents.

1.5 Prerequisites for End Users

The prerequisites are as follows:

- Basic understanding of Eventing platform.
- Basic understanding application log analysis using tools.
- Basic understanding DB changes.

1.6 General Prevention

Do not make any changes to Flyway scripts manually.

1.7 Best Practices

The best practices are as follows:

- It is ideal to have ELK stack installed on a separate VM outside the product VMs to ensure flow of logs in case of app crash.
- Log levels can be adjusted to INFO and above to enable relevant logs to flow in.

2 Troubleshooting Technical Flows

This topic describes various programming issues, possible causes, and solutions to resolve the issues.

This topic contains the following sections:

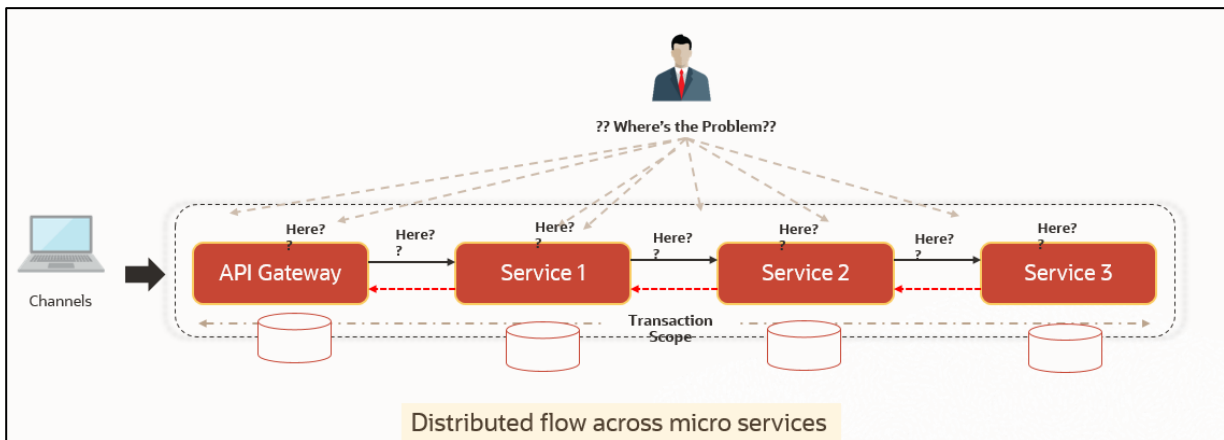
- [2.1 Where is the Problem](#)
- [2.2 Preliminary Checks from UI](#)
- [2.3 Preliminary Checks from Service Log Files](#)
- [2.4 Troubleshooting using Zipkin Traces](#)
- [2.5 Troubleshooting Logs using ELK Stack](#)
- [2.6 Troubleshooting Environmental Issues](#)

2.1 Where is the Problem

Troubleshooting the problem in distributed system could be challenging, if not understood fully. Each product has UI application components and service side application components. Each side requires different troubleshooting techniques and various logs that can be used to corroborate the problem.

The below picture shows that on service side, it is important to establish the area of the problem. This can be achieved by complete understanding of UI, Service side flows along with the data architecture of application.

Figure 1: Distributed Flow across Micro Services



2.2 Preliminary Checks from UI

This section describes how to launch the application and check for the basic errors. Perform the following steps:

1. Launch the application with delegated URL.
2. Press **F12** key, and select **Inspect and See network** tab.
3. Verify that all the calls responses are successful.

NOTE: Usually red color indicates non 2xx HTTP response.

Figure 2: Call Responses

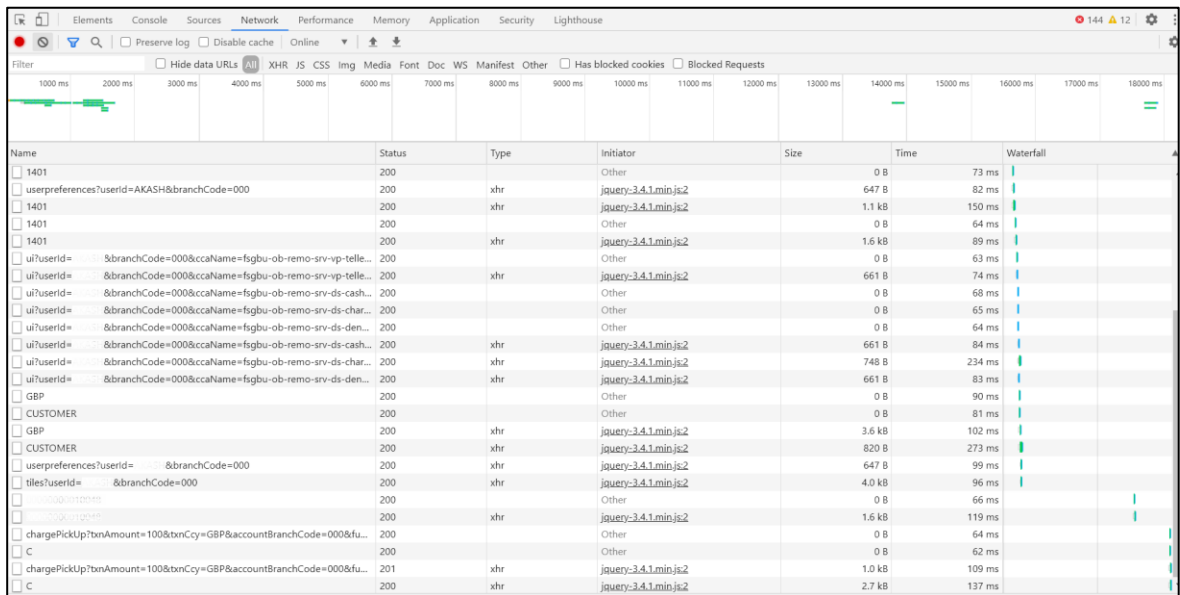


Figure 3: Non 2xx Response

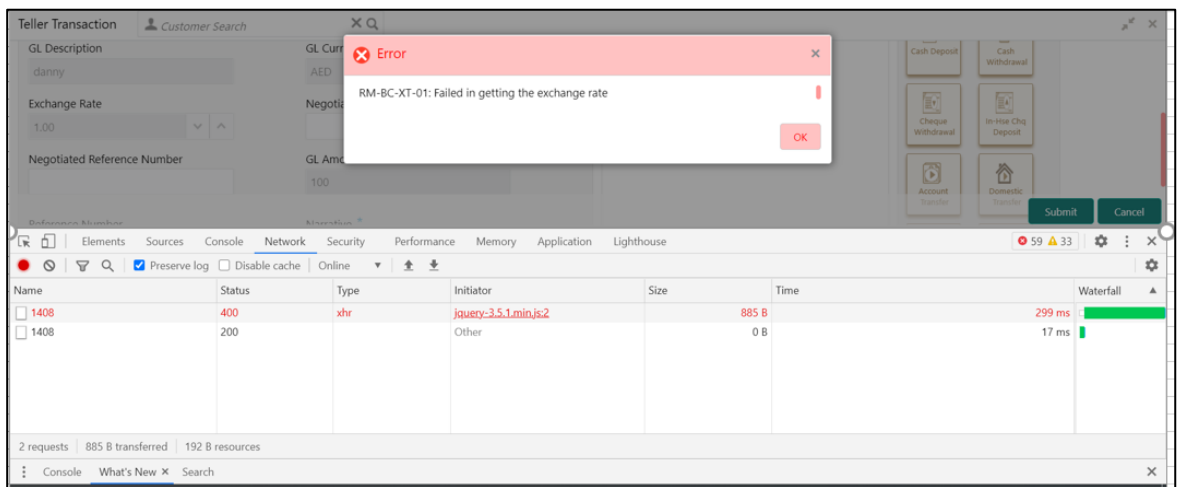
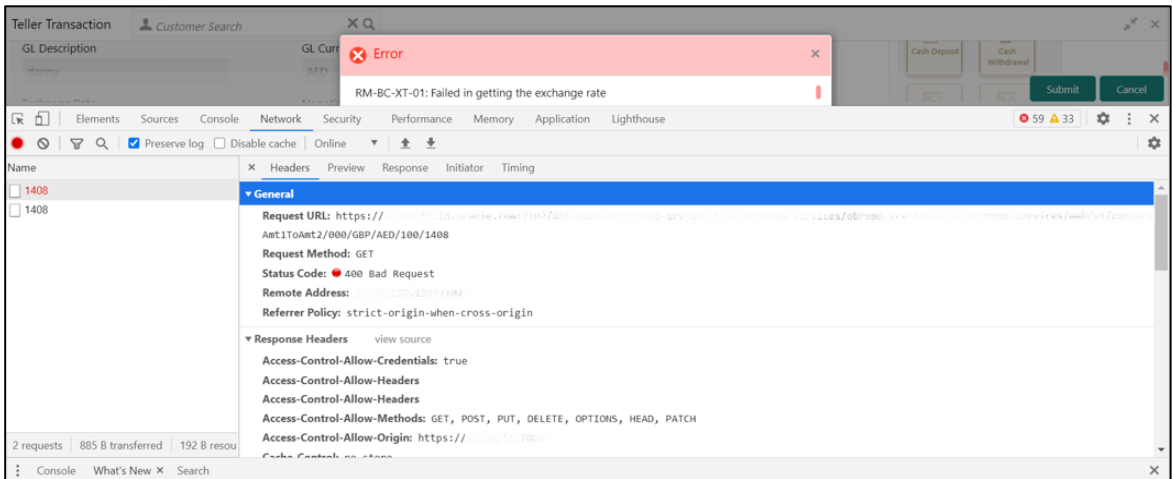
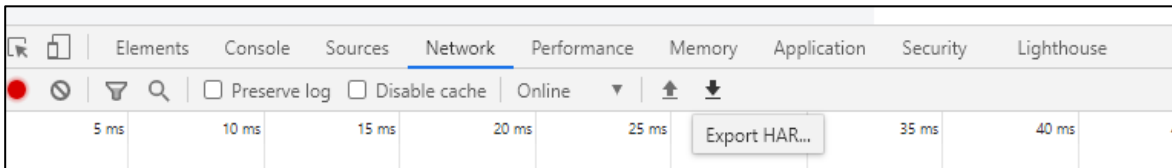


Figure 4: Details of Non 2xx Response



NOTE: You can also export the trace using export option in browsers. Example in Chrome you would see this option as below:

Figure 5: Export Option



NOTE: The tools such as **fiddler** and **wireshark** can be used to get the browser to API gateway web traffic. This helps to investigate exact request and response payloads exchanged between UI and API Gateway.

2.3 Preliminary Checks from Service Log Files

Each micro service sub domain war deployments can generate the log files in weblogic server. The configuration of this log can be found at *logback.xml*:

```
<root level="INFO">  
  <appender-ref ref="FILE" />  
</root>
```

In production scenarios, make sure that the root level is configured as ERROR so that log files does not get overwhelmed. Refer to WebLogic documentation to know the path, where these files are generated. In on-premises cases, the log files can be zipped and sent for remote troubleshooting purposes.

2.4 Troubleshooting using Zipkin Traces

This section describes the troubleshooting procedures using the Zipkin Traces.

2.4.1 Setting Zipkin Server

Refer to below link for the document describes the installation of Zipkin:

https://docs.oracle.com/cd/F37097_01/PDF/Installation_Guide/ANNEXURE-2.pdf

2.4.2 Troubleshooting Procedure

Perform the following steps for the troubleshooting using Zipkin Traces:

1. Launch the Zipkin URL.

NOTE: The basic layout of Zipkin is shown in [Figure 6](#).

Figure 6: Layout of Zipkin

The screenshot shows the Zipkin web interface. At the top, there are navigation links: "Investigate system behavior", "Find a trace", "View Saved Trace", and "Dependencies". On the right, there are buttons for "Try Lens UI", "Go to trace", and "Search". The main search area contains several input fields and dropdown menus:

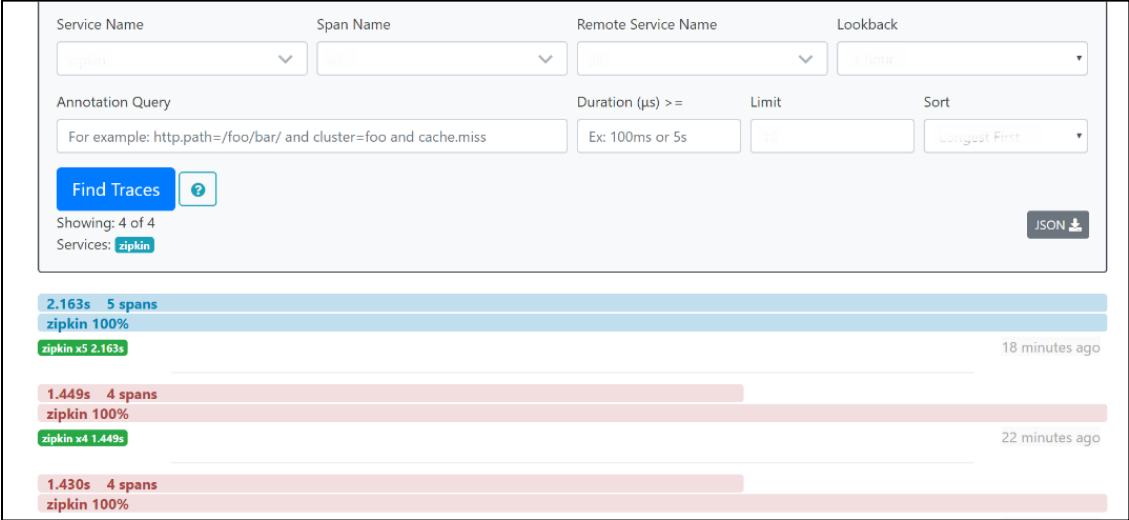
- Service Name:** A dropdown menu with "zipkin" selected.
- Span Name:** A dropdown menu with "get" selected.
- Remote Service Name:** A dropdown menu with "zipkin" selected.
- Lookback:** A dropdown menu with "10 minutes" selected.
- Annotation Query:** A text input field containing "For example: http.path=/foo/bar/ and cluster=foo and cache.miss".
- Duration (μ s) >=:** A text input field containing "Ex: 100ms or 5s".
- Limit:** A text input field containing "10".
- Sort:** A dropdown menu with "Longest First" selected.

Below these fields is a blue "Find Traces" button with a help icon. At the bottom of the search area, there is a light blue banner with the text "Please select the criteria for your trace lookup."

2. Use the search option to find the traces of required API calls and services.

NOTE: The search options given in the user interface are self-explanatory, and there is another UI option (Try Lens UI). It is given a different user interface with the same functionality. The list of the traces can be seen as shown in *Figure 7*. Error API calls are made to showcase how to track errors. The blue listings show the successful API hits, and the red listings indicate errors. Each block indicates a single trace in the listings.

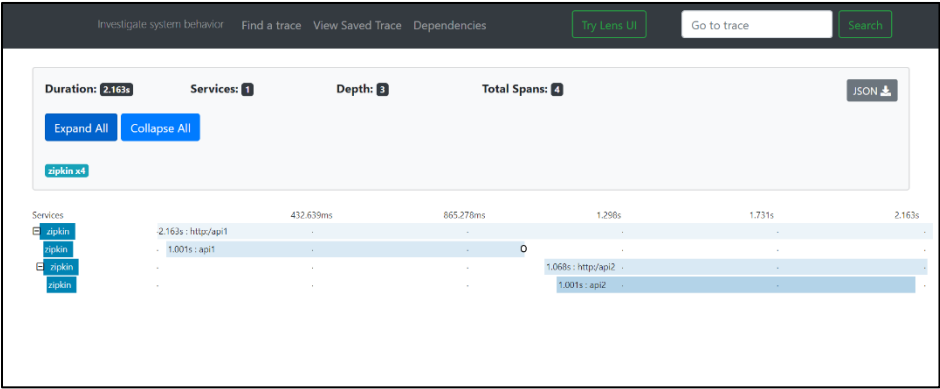
Figure 7: List of Traces



3. Open the individual trace to the details of the trace.

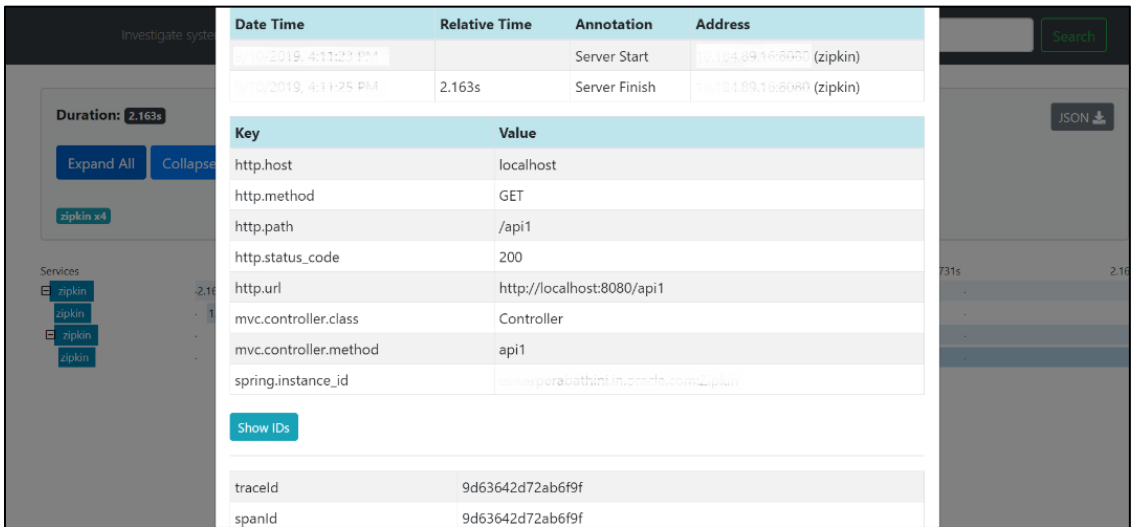
NOTE: *Figure 8* shows an individual trace when it is opened. It also describes the time taken for each block. As the two custom spans are created inside two service calls, you can find a total of four blocks. The time taken for an individual block can be seen in *Figure 8*.

Figure 8: Individual Trace



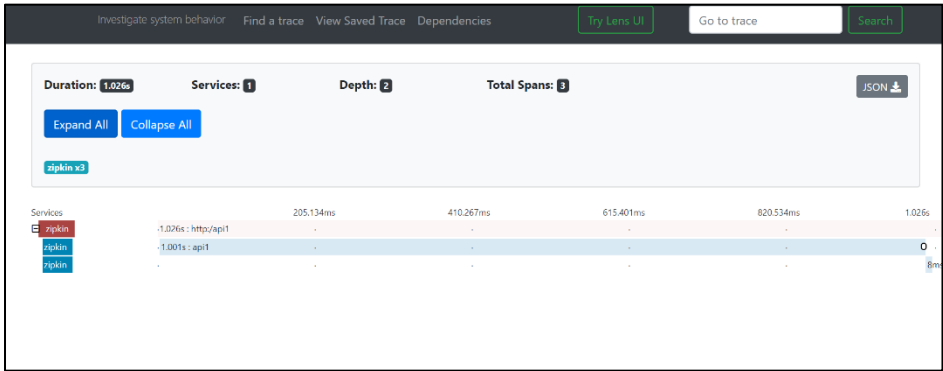
- 4. Click an individual block to display the details.

Figure 9: Details of Individual Block



NOTE: The details of the specific span block are shown in *Figure 9* and the logging events can also be seen in the Zipkin UI as small circular blocks. An example of an error log is shown in *Figure 10*.

Figure 10: Sample Error Log



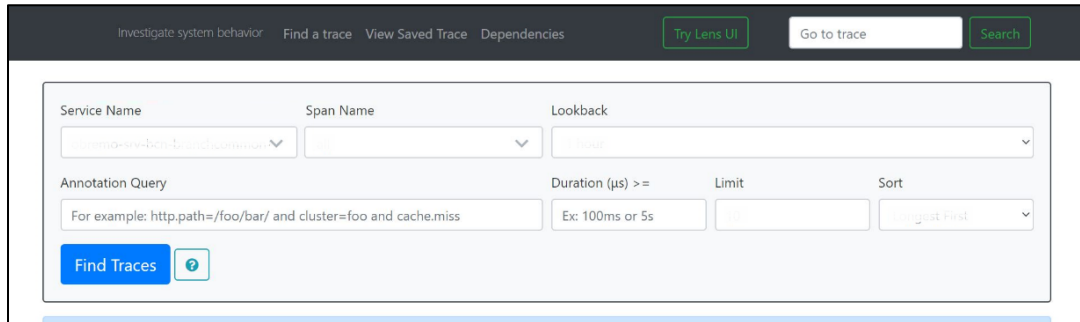
2.4.3 Zipkin Issues

2.4.3.1 Application Service is not Registered

Perform the following steps to find the cause of this error:

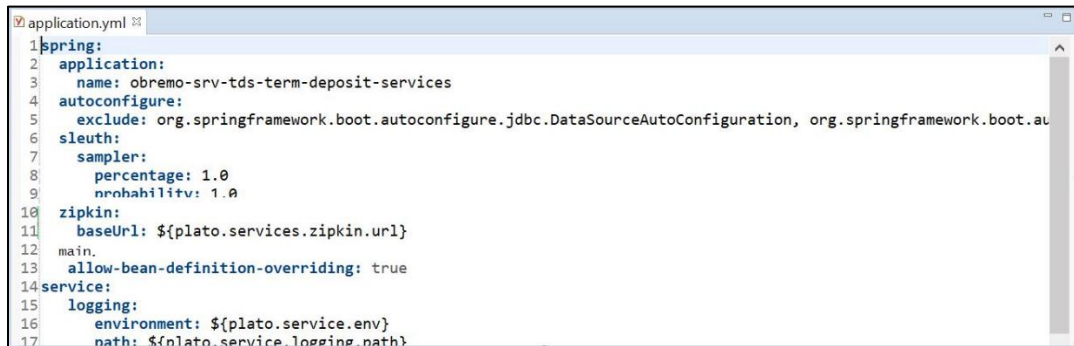
1. Check the applications, which are sending the trace report to Zipkin server from **Service Name** drop-down list.

Figure 13: Find Traces



2. If the required application is not listed in Zipkins, check the *application.yml* file for Zipkin base URL configuration.

Figure 14: Application.yml File



NOTE: The shipped *application.yml* should have the Zipkin entry. Every service should have *spring-cloud-sleuth-zipkin* dependency added in build gradle file for the service to generate and send trace Id and span Id.

3. The necessary values are as follows:

Compile group: `'org.springframework.cloud'`

name: `'spring-cloud-sleuth-zipkin'`

version: `'2.1.2.RELEASE'`

Figure 15: Branch Common Services

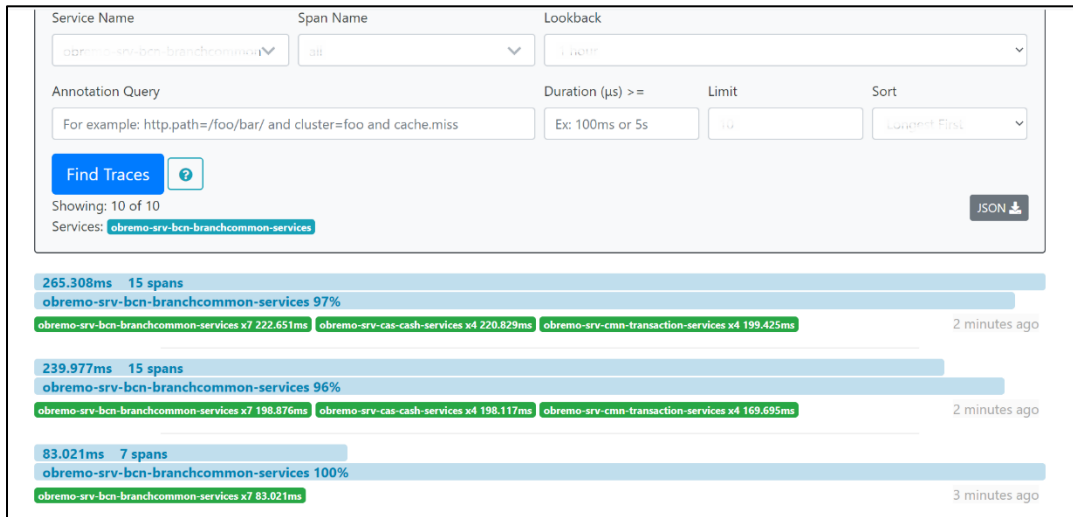
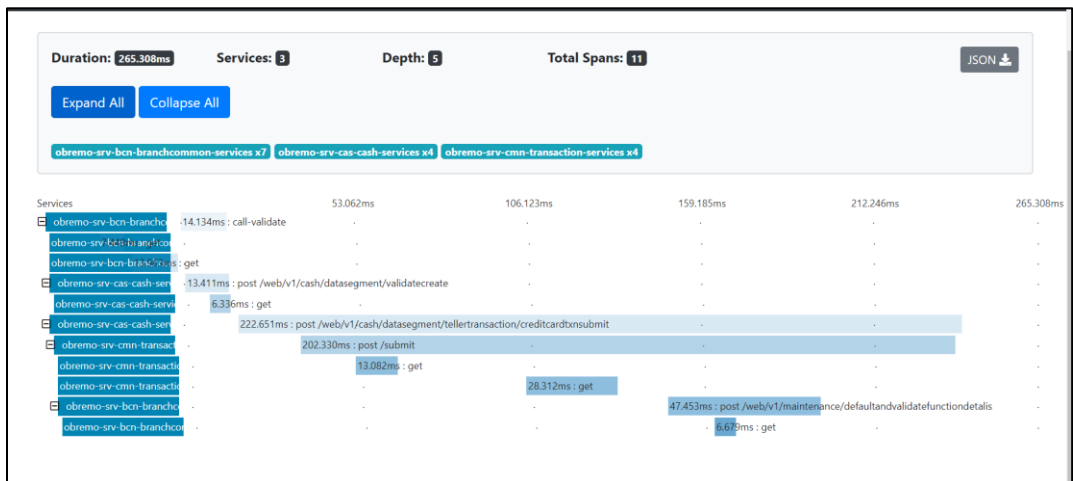


Figure 16: Branch Common Services Trace



2.4.3.2 404 Error

If there is 404 error, check if the **zipkin-server.jar** is running in the system where the application is deployed. To check this, execute the following command:

```
netstat -ltnup | grep ':9411'
```

output should be like:

```
tcp6    0    0 :::9411                :::*                    LISTEN          10892/java
```

Here 10892 is the PID.

2.4.3.3 Unable to Change Zipkin Default Port Number

Zipkin default port number is not editable. Hence, make sure that the port 9411 is available to start *Zipkin-server.jar* file.

2.5 Troubleshooting Logs using ELK Stack

This section describes the troubleshooting procedures using the ELK Stack.

2.5.1 Setting up ELK

Perform the following steps:

1. Download the Elastic search from <https://www.elastic.co/downloads/elasticsearch>.
2. Download the Kibana from <https://www.elastic.co/downloads/kibana>.
3. Download the Logstash from <https://www.elastic.co/downloads/logstash>.

Figure 17: ELK Setup

```
# Kibana is served by a back end server. This setting specifies the port to use.
#server.port: 5601

# Specifies the address to which the Kibana server will bind. IP addresses and host names are both valid values.
# The default is 'localhost', which usually means remote machines will not be able to connect.
# To allow connections from remote users, set this parameter to a non-loopback address.
server.host: "whf00peb"

# Enables you to specify a path to mount Kibana at if you are running behind a proxy.
# Use the `server.rewriteBasePath` setting to tell Kibana if it should remove the basePath
# from requests it receives, and to prevent a deprecation warning at startup.
# This setting cannot end in a slash.
#server.basePath: ""

# Specifies whether Kibana should rewrite requests that are prefixed with
# `server.basePath` or require that they are rewritten by your reverse proxy.
# This setting was effectively always `false` before Kibana 6.3 and will
# default to `true` starting in Kibana 7.0.
#server.rewriteBasePath: false

# The maximum payload size in bytes for incoming server requests.
#server.maxPayloadBytes: 1048576

# The Kibana server's name. This is used for display purposes.
#server.name: "your-hostname"

# The URL of the Elasticsearch instance to use for all your queries.
elasticsearch.url: "http://localhost:9200"

# When this setting's value is true Kibana uses the hostname specified in the server.host
```

NOTE: Default port for Elastic search is 9200, and the default port for Kibana: 5601.

2.5.1.1 Steps to run ELK

Perform the following steps:

1. Run the `elasticsearch.sh` file present in the folder path `/scratch/software/ELK/elasticsearch-6.5.1/bin`.
2. Configure Kibana to point the running instance of elastic search in `kibana.yml` file.
3. Configuration of Logstash consists of the following steps:
 - a) **Input**- This configuration is required to provide the log file location for the Logstash to read from.
 - b) **Filter**- Filters in Logstash is basically used to control or format the read operation (Line by line or Bulk read).
 - c) **Output**- In this section, provide the running elastic search instance to send the data for persisting.

Figure 18: Logstash Configuration

```

input {
  file {
    type => "java"
    path => "/scratch/Software/Weblogic_Installation/user_projects/domains//base_domain/logs/obremo-srv-cmn-transaction-services.log"
    codec => multiline {
      pattern => "Transaction Ended!"
      negate => "true"
      what => "next"
    }
  }
}

filter {
  #If log line contains tab character followed by 'at' then we will tag that entry as stacktrace
  if [message] =~ "\tat" {
    grok {
      match => ["message", "\t\tat"]
      add_tag => ["stacktrace"]
    }
  }
}

output {
  stdout {
    codec => rubydebug
  }

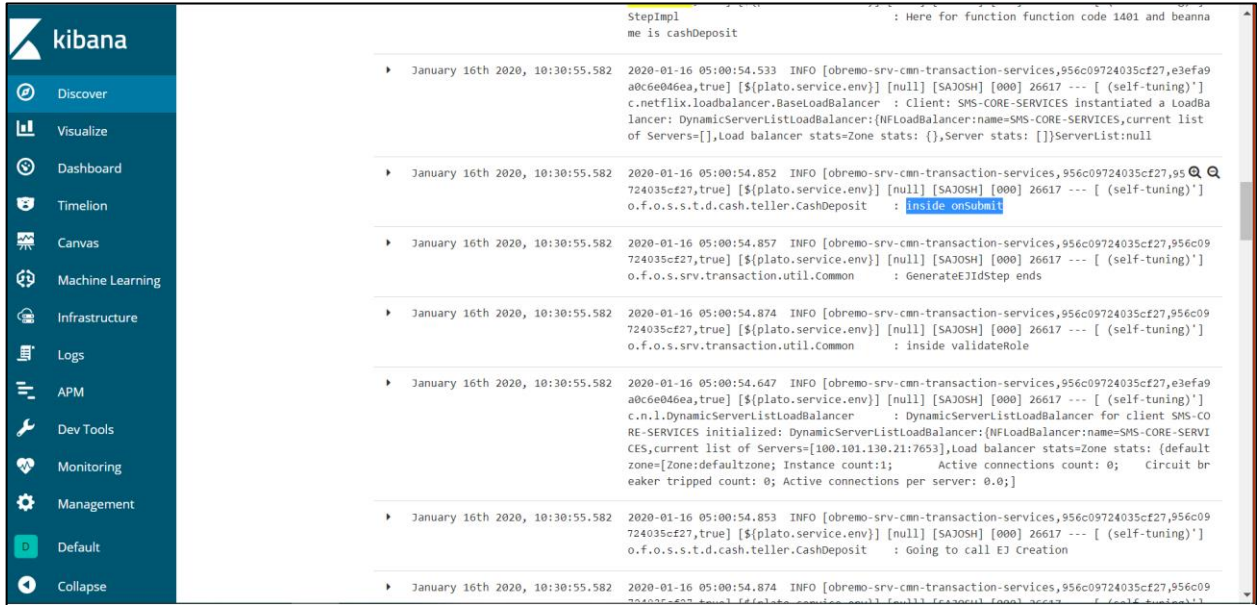
  # Sending properly parsed log events to elasticsearch
  elasticsearch {
    hosts => ["localhost:9200"]
  }
}

```

2.5.2 Accessing Kibana

The Kibana can be accessed as shown below:

Figure 19: Kibana



2.5.3 Searching for Logs in Kibana

The URL for searching logs in Kibana is <https://www.elastic.co/guide/en/kibana/current/search.html>.

2.5.4 How to Export Logs for Tickets

Perform the following steps:

1. Click **Share** from the top menu bar.
2. Select the **CSV Reports** option.
3. Click **Generate CSV** button.

2.6 Troubleshooting Environmental Issues

This section describes the troubleshooting procedures for the environmental issues:

2.6.1 Possible Issues While Deploying Services

This subsection describes the possible issues that may occur in the environment.

2.6.1.1 Service deployment is failing due to flyway

If the service deployment is failing due to flyway, verify that the object or record is already present and make changes in the flyway scripts accordingly.

2.6.1.2 Other possible issues

The other possible issue while deploying services could be multiple version of dependency jars present in the war file. For example, *weblogic.application.naming.EnvironmentException*: duplicate persistence units with name PLATO in scope *cmc-customer-services-5.3.0.war*.

2.6.2 Possible Issues In Login and Screen Launch

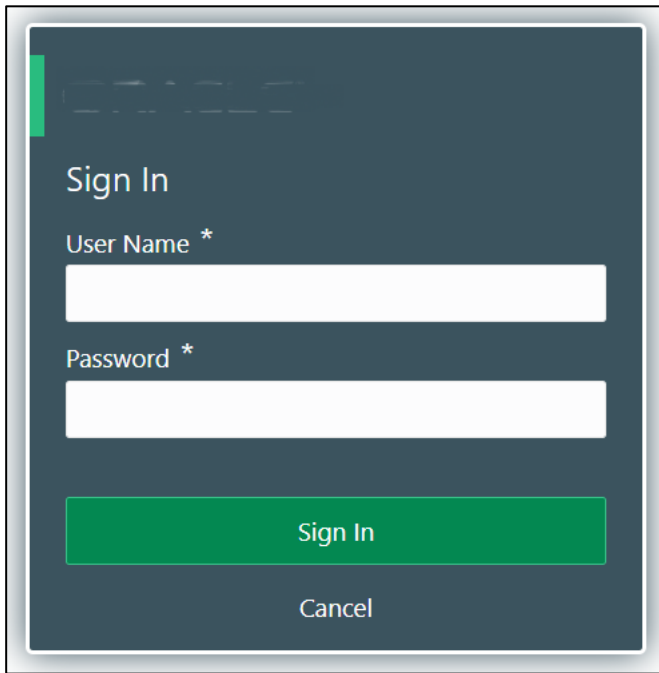
This subsection describes the possible issues that may occur while logging in and launching the screens.

2.6.2.1 Login page is not launching

If the login page is not launching, check if the *app-shell* and *obbrn-component-server1* war file are deployed. If it is deployed, make sure that the war file is up and running in the deployed managed server, and login again.

In addition, check if you are logged in with the appshell URL according to the war file deployed. For example, <http://<localhost>:<port>/obremo-app-shell-snapshot/>. In this URL, the name *app-shell-snapshot* is dynamic, which depends on the name of war file deployed.

Figure 20: Login Page



2.6.2.2 Unable to login after launching the application

If you are not able to login after the application is launched, make sure that the *plato-api-gateway* service, *plato-ui-config-services*, *sms-core-service*, and common core services are up and running.

Figure 21: Services

PLATO-API-GATEWAY	n/a (1) (1)	UP (1) - fsgbu-phx-54.snphxprshared1.gbucdsint02phx.oraclevcn.com:plato-api-gateway:5012
PLATO-DISCOVERY-SERVICE	n/a (1) (1)	UP (1) - fsgbu-phx-54.snphxprshared1.gbucdsint02phx.oraclevcn.com:plato-discovery-service:5012
PLATO-UI-CONFIG-SERVICES	n/a (1) (1)	UP (1) - fsgbu-phx-54.snphxprshared1.gbucdsint02phx.oraclevcn.com:plato-ui-config-services:5012
SMS-CORE-SERVICES	n/a (1) (1)	UP (1) - fsgbu-phx-54.snphxprshared1.gbucdsint02phx.oraclevcn.com:sms-core-services:5012

Before logging in, make sure that the below maintenances are completed:

- In the table *PRODUCT_SERVICES_ENV_LEDGER* from the Plato UI schema, update the Hostname and Port Number, where *plato-api-gateway* services is deployed. If SSL is enabled for the setup, it should be maintained with the SSL URL.
- In the table *SECURITY_CONFIG* from Plato security schema, make sure that the data is updated as shown in [Figure 22](#).

Figure 22: Security Configuration Table

ID	KEY	VALUE
1	185 PASSWORD_ATTRIBUTE	... userPassword ...
2	167 USER_STORE	... LDAP ...
3	168 CORS_ALLOWED_ORIGINS	... hostname.in.oracle.com ...
4	169 LDAP_SERVER_CREDENTIAL_SALT	... 0.9412345671234567 ...
5	170 USER_HEADER_ATTRIBUTE_KEY	... userId ...
6	171 USER_HEADER_ATTRIBUTE_REQUIRED	... Y ...
7	172 JWT_EXP_SECONDS	... 360000000 ...
8	173 JWT_ALGORITHM	... HS512 ...
9	174 LDAP_URL	... ldap://hostname.in.oracle.com:7001 ...
10	175 LDAP_SERVER_USER	... cn=admin ...
11	176 LDAP_SERVER_BASE	... dc=BRANCH ...
12	177 LDAP_SERVER_CREDENTIAL	... 51kCLASj1Bj0S2GPt0sYMg== ...
13	178 LDAP_USER_SEARCH_BASE	... ou=people,ou=myrealm ...
14	179 LDAP_USER_PREFIX	... uid ...
15	180 LDAP_PROVIDER	... EMBEDDED_WEBLOGIC ...
16	181 AUTO_TOKEN_REGENERATE_MODE	... true ...
17	182 IS_SSO_CONFIGURED	... false ...
18	183 REGENERATE_TOKEN_ALWAYS	... true ...

To enable SSL in Oracle Banking Branch, refer to Oracle Banking Branch Installation Guide.

2.6.2.3 Unable to login after restarting the services

If you are not able to login after restarting the services, make sure that the LDAP server is up and running, and check if the entered credentials are correct.

2.6.2.4 Teller menus are not displayed after logging in

After you log in, if the teller menus are not displayed, map the functional activity codes in the table SMS_TM_ROLE_ACTIVITY. Once it is mapped, check if the corresponding role is assigned to your user id.

2.6.2.5 Screens are not launching after logging in

If you are not able to launch the screens after logging in, make sure that the respective services are up and running.

NOTE: Verify the VPN connection while trying to troubleshoot the issues related to page launching, etc.

3 Health Checks and Verifications

Until the health check APIs implemented, the health need to be monitored using weblogic JVM managed server status and Eureka instance.

Figure 23: Health Checks

Instances currently registered with Eureka			
Application	AMIs	Availability Zones	Status
AML_MAPPING-SERVICES	n/a (1)	(1)	UP (1) - whf00cjs.in.oracle.com:amlmapping-services:7003
AMOUNTBLOCK-SERVICES	n/a (1)	(1)	UP (1) - whf00cjs.in.oracle.com:amountblock-services:7003
ANALYSIS-SERVICES	n/a (1)	(1)	UP (1) - whf00cjq.in.oracle.com:analysis-services:7004
APPLICATIONCATEGORY-SERVICES	n/a (1)	(1)	UP (1) - whf00cjp.in.oracle.com:applicationcategory-services:7007
BIDDING-SERVICES	n/a (1)	(1)	UP (1) - whf00cjq.in.oracle.com:bidding-services:7004
CHECKLISTMANAGEMENT-SERVICES	n/a (1)	(1)	UP (1) - whf00cjp.in.oracle.com:checklistmanagement-services:7007
CLMO-BACKOFFICE-SERVICES	n/a (1)	(1)	UP (1) - whf00cjt.in.oracle.com:clmo-backoffice-services:7004
CLMO-BUSINESSPROCESS-SERVICES	n/a (1)	(1)	UP (1) - whf00cjt.in.oracle.com:clmo-businessprocess-services:7004
CLMO-BUSINESSPRODUCT-SERVICES	n/a (1)	(1)	UP (1) - whf00cjt.in.oracle.com:clmo-businessproduct-services:7004
CLMO-HANDOFF-SERVICES	n/a (1)	(1)	UP (1) - whf00cjt.in.oracle.com:clmo-handoff-services:7004
CLMO-LOANAPPLICATION-SERVICES	n/a (1)	(1)	UP (1) - whf00cjt.in.oracle.com:clmo-loanapplication-services:7004
CLMO-LOANCUSTOMER-SERVICES	n/a (1)	(1)	UP (1) - whf00cjt.in.oracle.com:clmo-loancustomer-services:7004
CLMO-MAINTENANCE-SERVICES	n/a (1)	(1)	UP (1) - whf00cjt.in.oracle.com:clmo-maintenance-services:7004
CLMO-ORCHESTRATION-SERVICES	n/a (1)	(1)	UP (1) - whf00cjt.in.oracle.com:clmo-orchestration-services:7004
CLMO-TRANSACTIONCONTROLLER-SERVICES	n/a (1)	(1)	UP (1) - whf00cjt.in.oracle.com:clmo-transactioncontroller-services:7004

This topic contains the following sections:

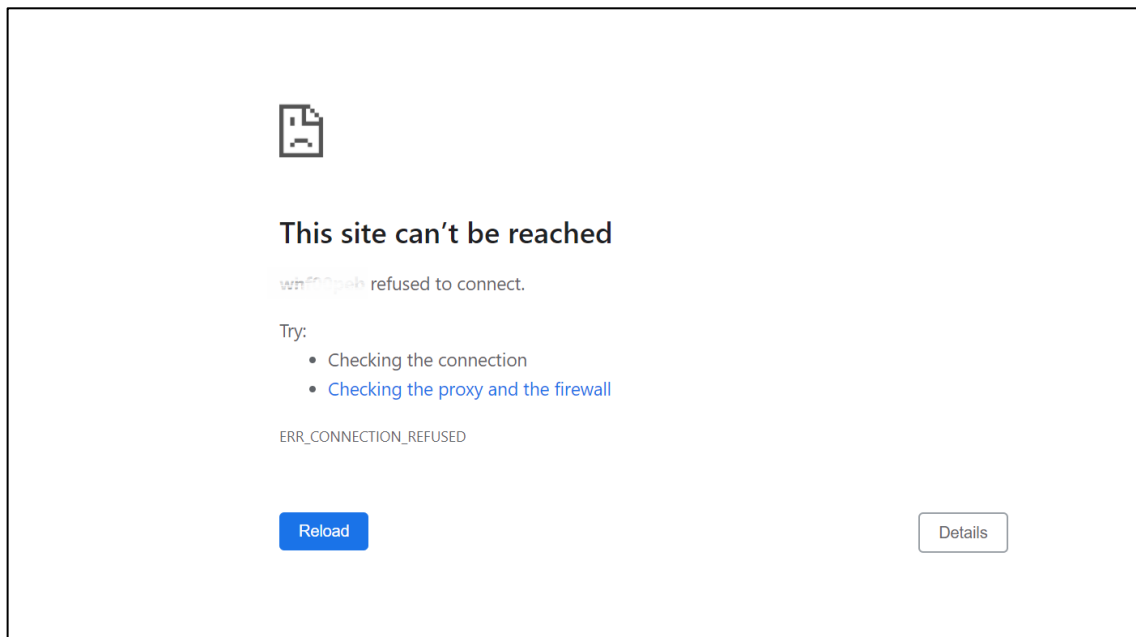
- [3.1 WebLogic](#)
- [3.2 Application Services](#)

3.1 WebLogic

3.1.1 Unable to Login To Weblogic Console

If you are unable to login to weblogic console or the console is down when trying to deploy/re-deploy services, restart the weblogic domain from server. Perform the following steps to restart the weblogic domain:

1. To stop the weblogic server, which is already running, go to path `/Oracle_Home/user_projects/domains/bin` and execute `sh` file with `./` prefixing to it. For example, `./stopWebLogic.sh`.
2. Once the server is stopped, try to start the server by using `nohup`, so that it can run in the background. For example, `nohup ./startWebLogic.sh`.

Figure 24: Error Message

3.1.2 Unable to Stop a Service

If you are not able to stop a service, which is already running, bring down the managed server, and remove the war file.

3.1.3 GC Overhead limit exceeded/OutOfMemoryException error

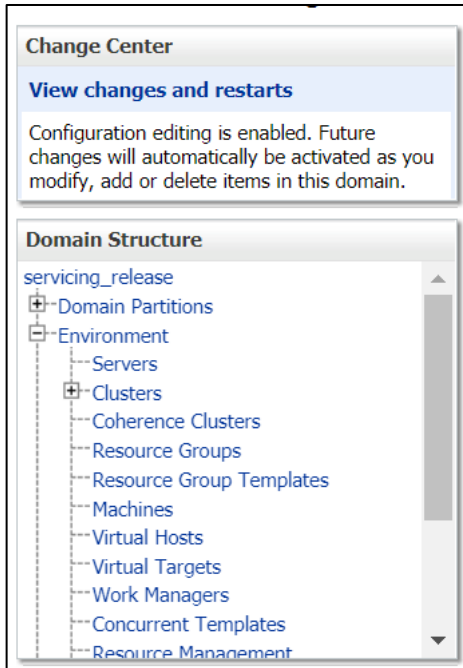
If there is an error like **GC Overhead limit exceeded** or **OutOfMemoryException** is thrown while starting the services, the following details need to be shared.

- Heap Dump
- Configuration of environment

For a quick fix, restart the managed server or increase the memory allocated to the managed server. Perform the following steps to increase the memory:

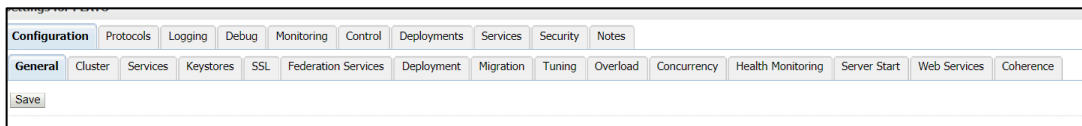
1. Click **Servers**.

Figure 25: Domain Structure



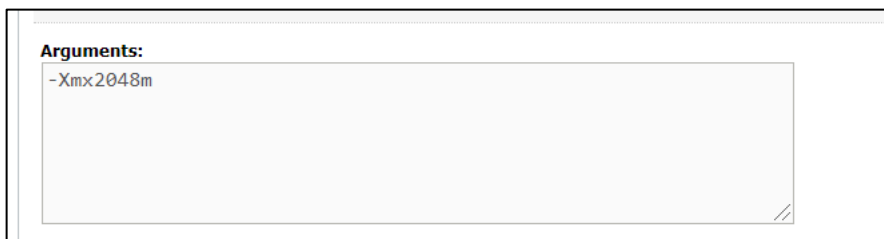
2. Select the managed server from which you are getting **OutOfMemoryException** or **GC Overhead Limit exceeded**, and click **Server Start** tab.

Figure 26: Managed Servers



3. Specify the memory (which needs to be increased) according to requirement in 512, 1024, 2048 etc., and restart the managed server to fix the issue.

Figure 27: Memory Update

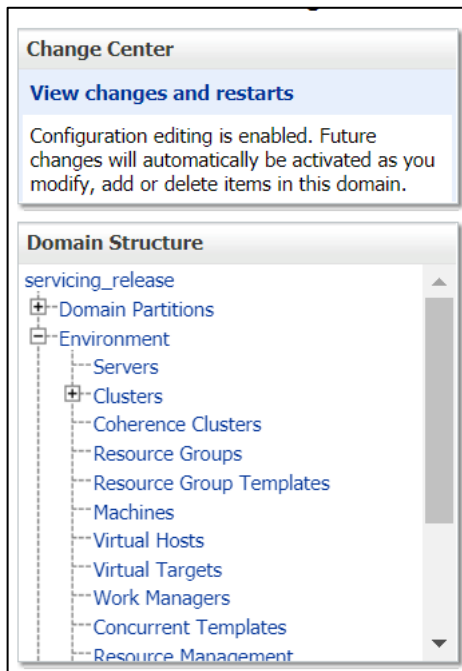


3.1.4 Managed Server is Failed or Not Reachable

If the managed server is in failed or not reachable state, perform the following steps to restart the managed server:

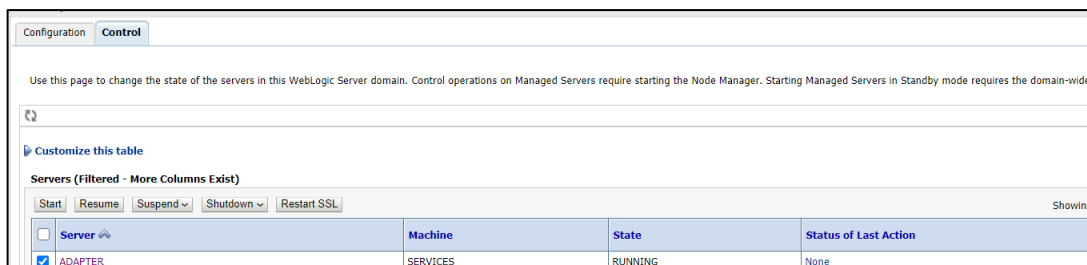
1. Go to **Servers**, select **Control** tab, and then select the managed server.

Figure 28: Domain Structure



2. Click **Shutdown**.

Figure 29: Control Tab



3. After you bring down the server, click **Start** to restart the server.

3.1.5 weblogic.application.ModuleException Error

If there is an error like **weblogic.application.ModuleException: Context path '/obremo-srv-cmn-transaction-services' is already in use by the module**, make sure that the re-deploying service is removed properly. If the issue persists, try to restart the managed server.

3.2 Application Services

Catalog of services required for Oracle Banking Branch are as follows:

Table 2: Application Services

Group	Service List	Required for Servicing	Usage
OBBRN	obbrn-srv-biz-businessprocess-services	Y	Used for Process Runtimebased screens
OBBRN	obremo-srv-adp-adapter-services	Y	Used across all transactions
OBBRN	obremo-srv-bcn-branchcommon-services	Y	Used across all transactions and maintenace screens
OBBRN	obremo-srv-cas-cash-services	Y	Used for cash, TILL, VAULT and Misc transactions
OBBRN	obremo-srv-cmn-ml-processing	Y	Used across transactions that use ML
OBBRN	obremo-srv-cmn-transaction-services	Y	Used across all transactions, enquiries, batches, Electronic Journal
OBBRN	obremo-srv-cmn-utils-services	Y	Used across all transactions
OBBRN	obremo-srv-cus-customer-services	Y	Used for Customer Servicing Screens
OBBRN	obremo-srv-ext-common-txn	Y	Used across all transactions
OBBRN	obremo-srv-pay-payment-services	Y	Used for remittance transactions

Group	Service List	Required for Servicing	Usage
OBBRN	obremo-srv-prj-projection-services	Y	Used across all transactions
OBBRN	obremo-srv-tds-term-deposit-services	Y	Used for TD transactions
OBBRN	extended-cluster.war	Required for Italy Cluster	Italy Cluster
OBBRN	obremo-batch-futuremavprocess-extended-services-14.0.2.war	Required for Italy Cluster	Italy Cluster
OBBRN	obremo-mavbatchprocess-service-5.5.0.war	Required for Italy Cluster	Italy Cluster
OBBRN	obremo-circularchq-service-5.8.0.war	Required for Italy Cluster	Italy Cluster
OBBRN	obremo-mrfpaymenttxn-service-5.5.0.war	Required for Italy Cluster	Italy Cluster
OBBRN	obremo-blockmavnos-service-14.0.2.war	Required for Italy Cluster	Italy Cluster
OBBRN	obremo-mrfparams-service-5.5.0.war	Required for Italy Cluster	Italy Cluster
OBBRN	obremo-batch-cancelmavbatch-extended-services-14.0.2.war	Required for Italy Cluster	Italy Cluster

Group	Service List	Required for Servicing	Usage
OBBRN	obremo-entellerlargedenom-service-14.0.2.war	Required for Italy Cluster	Italy Cluster
OBBRN	obremo-statictype-service-5.8.0.war	Required for Italy Cluster	Italy Cluster
OBBRN	obremo-issuemav-extended-services-14.0.2.war	Required for Italy Cluster	Italy Cluster
OBBRN	obbrn-component-server-5.7.0.war	Y	UI
PLATO	plato-batch-server	N	
PLATO	plato-feed-services	N	
PLATO	plato-alerts-management-services	Y	Required for PLATO framework
PLATO	plato-api-gateway	Y	Required for PLATO framework
PLATO	plato-config-service	Y	Required for PLATO framework
PLATO	plato-discovery-service	Y	Required for PLATO framework
PLATO	plato-orch-service	Y	Required for PLATO framework

Group	Service List	Required for Servicing	Usage
PLATO	plato-ui-config-services	Y	Required for PLATO framework
SMS	sms-core-services-5.8.0.war	Y	SMS services
SMS	sms-component-server-5.5.0.war	Y	UI
CMC	cmc-fc-ai-ml-services	Y	Used in ML
CMC	cmc-nlp-dashboard-widget-services	Y	Used in ML
CMC	cmc-nlp-maintenance-services	Y	Used in ML
CMC	cmc-nlp-pipeline-services	Y	Used in ML
CMC	cmc-nlp-text-extraction-services	Y	Used in ML
CMC	cmc-obrh-service	Y	Used for routing via OBRH
CMC	cmc-report-service	Y	Used for Advices
CMC	cmc-resource-segment-orchestrator-service	Y	Used in screens using gcs like maintenace screens
CMC	cmc-screenclass-services	Y	Used for screen handling
CMC	cmc-settlements-services	N	

Group	Service List	Required for Servicing	Usage
CMC	cmc-transactioncontroller-services	Y	Used in screens using gcs like maintenace screens
CMC	cmc-txn-code-services	Y	Common Core Services
CMC	cmc-account-services	Y	Common Core Services
CMC	cmc-additional-attributes-services	Y	Common Core Services
CMC	cmc-advice-services	Y	Used for Advices
CMC	cmc-base-services	Y	Common Core Services
CMC	cmc-batch-services	N	
CMC	cmc-branch-services	Y	Common Core Services
CMC	cmc-businessoverrides-services	N	
CMC	cmc-charges-calculation-services	Y	Common Core Services
CMC	cmc-corebanking-adapter-service	N	
CMC	cmc-currency-services	Y	Common Core Services
CMC	cmc-customer-services	Y	Common Core Services
CMC	cmc-datasegment-services	Y	Common Core Services

Group	Service List	Required for Servicing	Usage
CMC	cmc-external-chart-account	Y	Common Core Services
CMC	cmc-external-system-services	N	Common Core Services
CMC	cmc-external-virtual-account-services	Y	VAM services
CMC	cmc-facilities-service	N	
CMC	cmc-component-server-5.8.0.war	Y	UI
CMC	app-shell-5.8.0.war	Y	UI
MOC	moc-component-server-5.7.0.war	Y	UI
MOC	cmc-applicationcategory-services	N	
MOC	cmc-checklist-services	N	
MOC	cmc-checklistmanagement-services	N	
MOC	cmc-comments-services	N	
MOC	cmc-document-services	Y	Process Runtime+ ML Screens
MOC	cmc-documentmanagement-services	Y	Process Runtime+ ML Screens

Group	Service List	Required for Servicing	Usage
MOC	cmc-earmark-services	N	
MOC	cmc-kyccheck-services	N	
MOC	cmc-mailnotification-services	N	
MOC	cmc-priority-service	N	
MOC	cmc-processcode-service	Y	Business Process Defination for Process Runtimebased screens
MOC	cmc-queue-service	N	
MOC	cmc-sequencgenerator-services	N	

4 Troubleshooting Functional Workflows

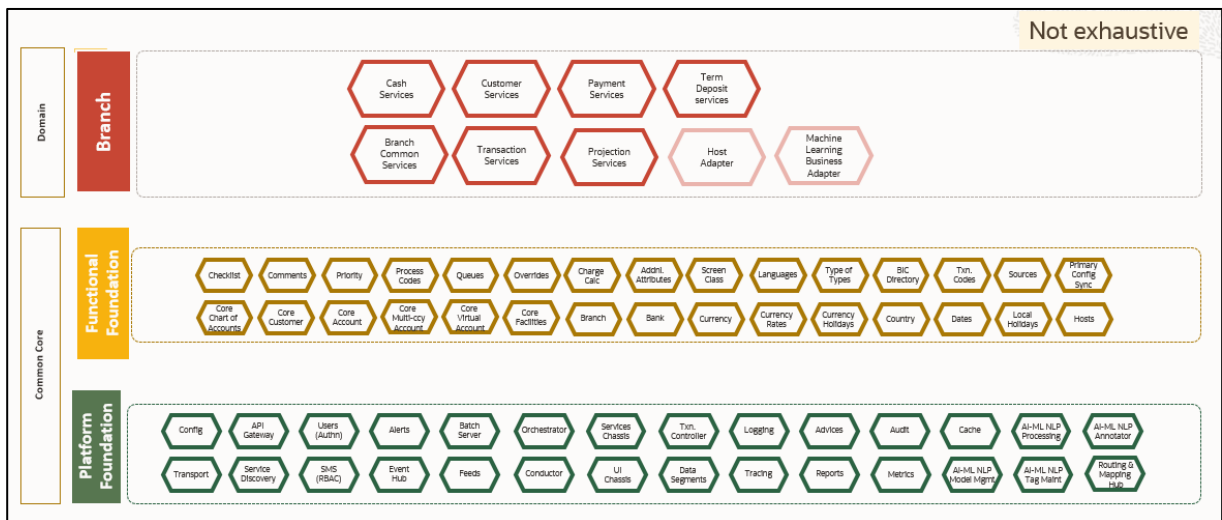
This topic describes the troubleshooting functional workflows applicable to Oracle Banking Branch. It contains the following sections:

- [4.1 Oracle Banking Branch – Subdomains](#)
- [4.2 Cash Deposit – High Level Flow Diagram](#)
- [4.3 Process Log Table Update](#)
- [4.4 Payment Service Integration Troubleshooting](#)
- [4.5 Oracle Banking Routing Hub configuration](#)
- [4.6 Purging and Archival](#)
- [4.7 Process Runtime Screens Troubleshooting](#)

4.1 Oracle Banking Branch – Subdomains

The subdomains of Oracle Banking Branch are shown below:

Figure 30: Composition of Oracle Banking Branch



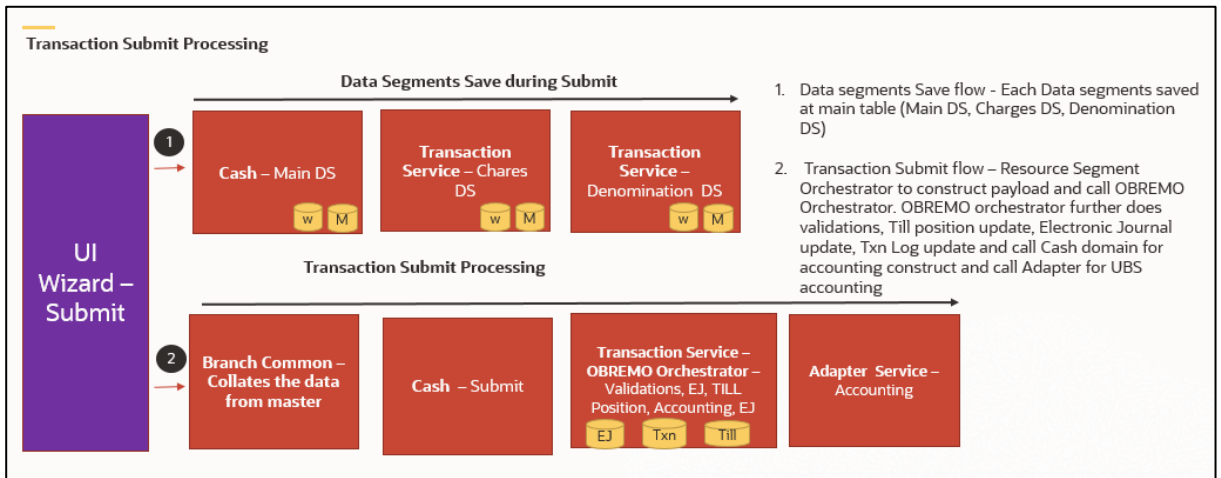
4.2 Cash Deposit – High Level Flow Diagram

The high level flow diagrams for Cash Deposit transaction are shown below:

Figure 31: Cash Deposit High Level Flow - 1



Figure 32: Cash Deposit High Level Flow - 2



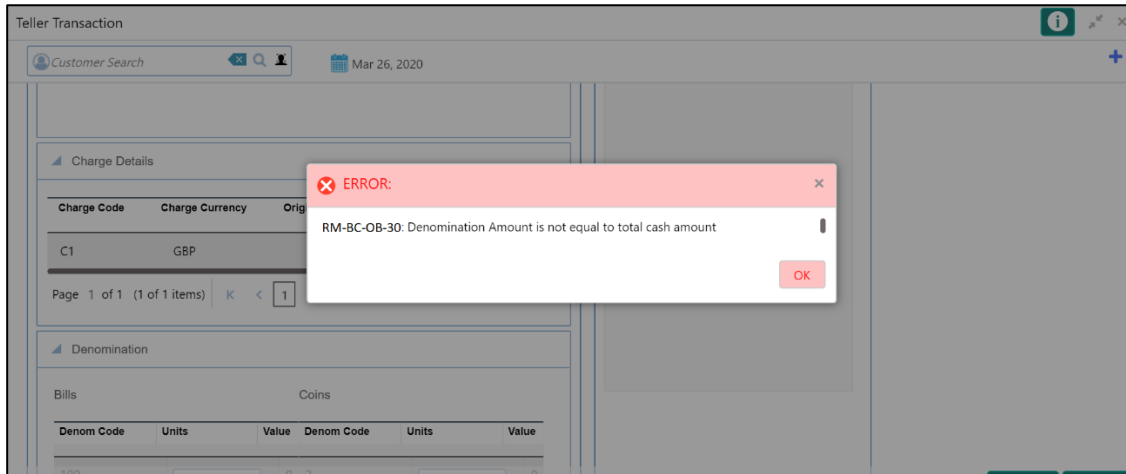
4.2.1 First Level Issues

This subsection describes the possible issues that may occur during the basic investigation.

4.2.1.1 Calls are not sent properly

If there is any improper calls, check *ERTB_MSGS* table to understand the cause of the error. In addition, you can find displayed error code from the list of existing codes.

Figure 33: Improper Calls

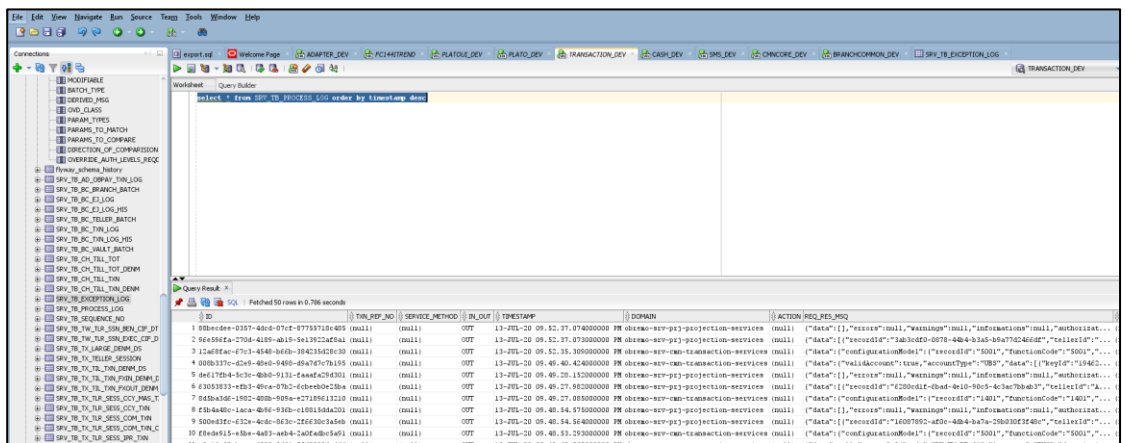


4.2.1.2 Null pointer or branch common exception error

If there is null pointer exception or branch common exception error, go to process log table and exception log table, and select the following queries to verify the results.

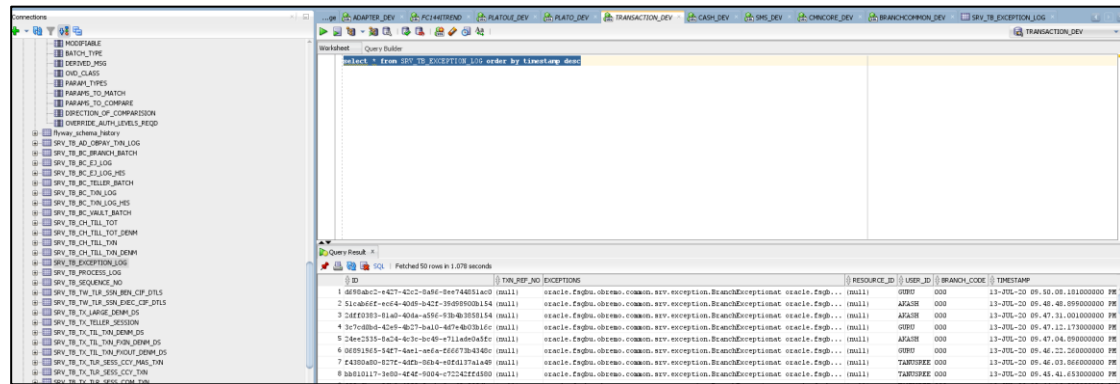
Query: `select * from SRV_TB_PROCESS_LOG order by timestamp desc`

Figure 34: TB Process Log



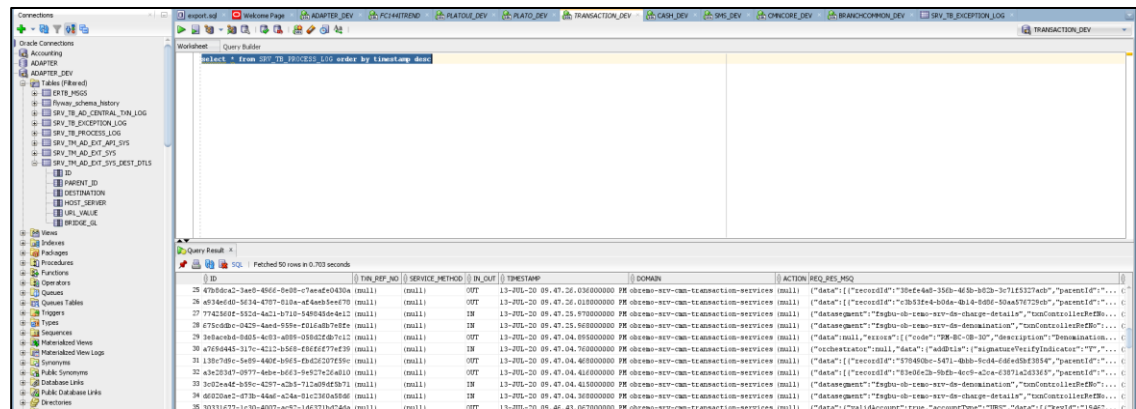
Query: `select * from SRV_TB_EXCEPTION_LOG order by timestamp desc`

Figure 35: TB Exception Log



NOTE: Process log contains request payload, which will help you to hit service through postman and for getting the response.

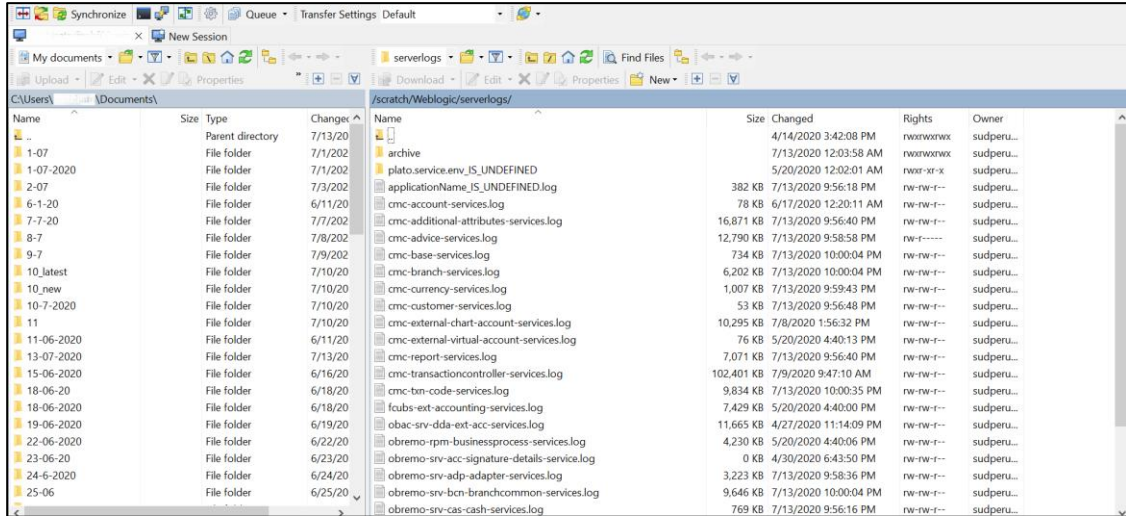
Figure 36: Process Log Responses



4.2.1.3 Exact error through exception log

If there is an exact error through exception log, log in to WINSCP, and check server logs with NIS credentials. The path can be defined in `-Dplato.service.logging.path` variable in `setEnv.sh`. For example, the path is `/scratch/Weblogic/serverlogs`.

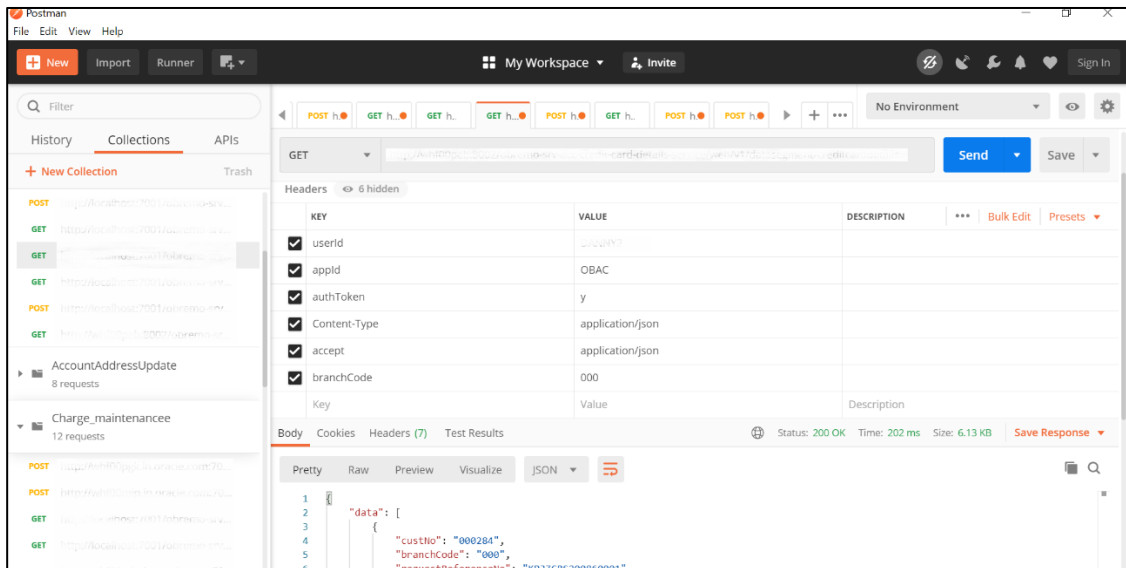
Figure 37: Exception Error Log



4.2.1.4 Logs are not generated

If you are not getting logs, include debug statements in services and hit through postman, and test again.

Figure 38: Postman

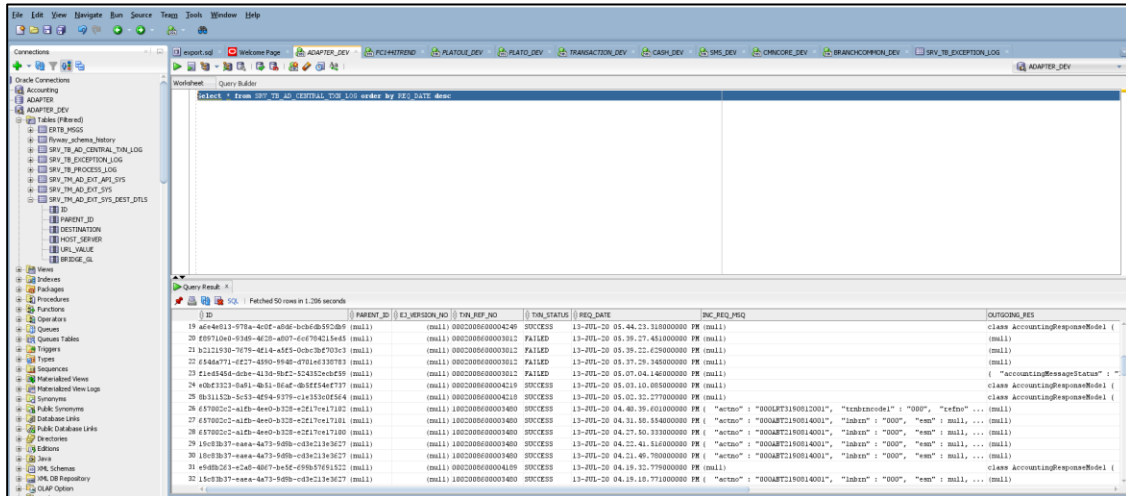


4.2.1.5 Call is failing in Adapter

If any call is failing in call to Product Processor Gateway, open `SRV_TB_AD_CENTRAL_TXN_LOG` in Adaptor for getting Gateway response (**SUCCESS** or **FAILED**). Select the following query to verify results.

Query: `select * from SRV_TB_AD_CENTRAL_TXN_LOG order by REQ_DATE desc`

Figure 39: TB AD Central Transaction Log



4.2.1.6 404 Error

The possible causes for 404 error are as follows:

- Check service is not running on Eureka
- Check service is not deployed in Weblogic

4.2.1.7 500 Internal Error

The possible causes for 500 internal error are as follows:

- Issue with Plato entries
- Issue with Eureka
- Issue with any piece of code

The server side debugging is needed for the above-mentioned issues, if it is not captured in logs.

4.2.2 Transaction Data Verification

Follow the best practices mentioned below to avoid getting any errors:

1. In the **IN** request and **OUT** response, make sure that all the field data is going to service side.
2. If there is any error related to SMS, check for the availability of SMS entries.
3. Validate the endpoints and data.
4. Make sure that the data entered in the screen is accurate. For example, **Account Number** should be valid.

Figure 40: Teller Transaction Screen

The screenshot shows the 'Teller Transaction' window. At the top, there is a 'Customer Search' bar and a date 'Mar 26, 2020'. The main area is divided into a form for 'Cash Deposit' and a customer selection area. The form contains the following fields:

- Account Number: [Input field]
- Transaction Amount: [Input field]
- Exchange Rate: [Input field]
- Account Amount: [Input field]
- Total Charge Amount: [Input field]
- Narrative: [Text area containing 'Cash Deposit']

The customer selection area shows a placeholder for a customer profile and the text 'No Customer Selected'. On the right side, there are three floating panels:

- 'Current Till Position' showing '\$294,100.00' with a refresh icon.
- 'Alerts' showing 'No record to display'.
- 'Frequent Customer Operations'.

At the bottom right, there are 'Submit' and 'Cancel' buttons. A 'Charge Details' link is visible at the bottom left of the form area.

4.3 Process Log Table Update

This section contains steps to update the process log. To update the process log, select the following query.

Query: `select * From properties where upper(key) like upper('%processlog%')`

Figure 41: Process Log Table Update

ID	APPLICATION	PROFILE	LABEL	KEY	VALUE
1	777682 obremo-srv-adp-adapter-services	jdbc	jdbc	obremo.processlog.logging.required	true
2	777683 obremo-srv-bcn-branchcommon-services	jdbc	jdbc	obremo.processlog.logging.required	true
3	777684 obremo-srv-cas-cash-services	jdbc	jdbc	obremo.processlog.logging.required	true
4	777685 obremo-srv-cmn-ml-processing	jdbc	jdbc	obremo.processlog.logging.required	true
5	777681 obremo-srv-cmn-transaction-services	jdbc	jdbc	obremo.processlog.logging.required	true
6	777686 obremo-srv-cus-customer-services	jdbc	jdbc	obremo.processlog.logging.required	true
7	777687 obremo-srv-pay-payment-services	jdbc	jdbc	obremo.processlog.logging.required	true
8	777688 obremo-srv-prj-projection-services	jdbc	jdbc	obremo.processlog.logging.required	true
9	777689 obremo-srv-tds-term-deposit-services	jdbc	jdbc	obremo.processlog.logging.required	true
10	10047 obremo-additionaldetails-services	jdbc	jdbc	obremo.processlog.logging.required	true

If the value is false, the process log will not be updated. This is for audit and tracing purpose during error investigation.

4.4 Payment Service Integration Troubleshooting

The section describes the possible issues that may occur in payment service integration.

4.4.1 Screen is Not Launching

If the screen is not launching, check the networks logs to verify if *open check* call is failing. The open check URL is <https://<host>:<port>/obremo-srv-cmn-transaction-services/obremo-srv-cmn-transaction-services/open/1006>.

NOTE: Network logs can be viewed by launching browser debugger window (F12) and viewing network tab.

4.4.2 Submit is Failing

If submit is failing, check the network logs and check if *CREATE* call is failing. The CREATE URL is <https://<host>:<port>/obremo-srv-bcn-branchcommon-services/web/orchestrator/submit/CREATE>.

4.4.2.1 500 Internal Server Error

The issues in the following services can cause 500 internal server error:

- *OBREMO-SRV-BCN-BRANCHCOMMON-SERVICES*
- *OBREMO-SRV-CMN-TRANSACTION-SERVICES*
- *OBREMO-SRV-PAY-PAYMENT-SERVICES*
- *OBREMO-SRV-ADP-ADAPTER-SERVICES*

Check the process log table and exception log table from respective schema. Select the following query to verify results.

Query:

*select * from SRV_TB_PROCESS_LOG order by timestamp desc;* (or)

*select * from SRV_TB_PROCESS_LOG where user_id ='user_id' order by timestamp desc;*

Figure 42: Process Log Table

ID	TXN_REF_NO	SERVICE_METHOD	IN_OUT	TIMESTAMP	DOMAIN
1 79fe4b12-3a1f-4613-8a31-6d9809a1d7ac	(null)	(null)	OUT	20-JUL-20 04.56.34.305000000	PM obremo-srv-bcn-branchcommon
2 31931110-2160-4b38-b2cd-3454f6178a4b	(null)	(null)	OUT	20-JUL-20 04.56.33.567000000	PM obremo-srv-bcn-branchcommon
3 f528c893-5fce-4c6d-81e5-0bb8f5b8e85a	(null)	(null)	OUT	20-JUL-20 04.56.33.532000000	PM obremo-srv-bcn-branchcommon
4 f79a53a4-d5e2-4e42-baaf-0309a010ccc0	(null)	(null)	OUT	20-JUL-20 04.56.32.849000000	PM obremo-srv-bcn-branchcommon
5 54deaddde-b787-4492-88d4-e62f1fd2bdf1	(null)	(null)	OUT	20-JUL-20 04.55.59.423000000	PM obremo-srv-bcn-branchcommon
6 491695c1-e564-4ff3-afd3-823188cbcc02	(null)	(null)	OUT	20-JUL-20 04.55.58.551000000	PM obremo-srv-bcn-branchcommon
7 9bd21175-702b-4f31-a96a-27f039afab17	(null)	(null)	OUT	20-JUL-20 04.55.58.512000000	PM obremo-srv-bcn-branchcommon
8 abcf96ff-9e6f-4108-a44a-e3090dab275a	(null)	(null)	OUT	20-JUL-20 04.55.57.750000000	PM obremo-srv-bcn-branchcommon
9 b619f07f-4ad7-4dbd-b15c-2fc00a152154	(null)	(null)	OUT	20-JUL-20 04.54.06.082000000	PM obremo-srv-bcn-branchcommon
10 70ef705f-1cf3-4582-94f2-3ba6d0f60293	(null)	(null)	OUT	20-JUL-20 04.54.01.879000000	PM obremo-srv-bcn-branchcommon
11 f6eeb54a-4db2-4073-a1db-3768c8f574bd	(null)	(null)	IN	20-JUL-20 04.54.01.847000000	PM obremo-srv-bcn-branchcommon
12 271d20fc-9cc2-49d2-acd1-80a87ce4bb9f	(null)	(null)	IN	20-JUL-20 04.54.01.567000000	PM obremo-srv-bcn-branchcommon

Query:

*select * from SRV_TB_EXCEPTION_LOG order by timestamp desc;* (or)

*select * from SRV_TB_EXCEPTION_LOG where user_id='user_id' order by timestamp desc;*

Figure 43: Exception Log Table

ID	TXN_REF_NO	EXCEPTIONS	RESOU
1 2f90dd90-f393-4af8-b8e9-4a7190bbccd2	(null)	oracle.fsgbu.obremo.common.srv.exception.BranchExceptionat oracle.fsgbu...	(null)
2 409d4d30-0cfa-429f-9d5b-0eb740a60393	(null)	oracle.fsgbu.obremo.common.srv.exception.BranchExceptionat oracle.fsgbu...	(null)
3 8dc706dc-4e0f-43e6-9c5e-e65189d78658	(null)	oracle.fsgbu.obremo.common.srv.exception.BranchExceptionat oracle.fsgbu...	(null)
4 b6ad220d-6d10-4a6a-85c5-999673a0eac4	(null)	oracle.fsgbu.obremo.common.srv.exception.BranchExceptionat oracle.fsgbu...	(null)
5 6ae26743-788c-4ef5-a367-c14ee76649c0	(null)	oracle.fsgbu.obremo.common.srv.exception.BranchExceptionat oracle.fsgbu...	(null)
6 3b6ee2f3-716e-4be2-ad0e-6a635be5ad6f	(null)	org.springframework.web.util.NestedServletException: Handler dispatch fa...	(null)
7 2074f230-93c8-4799-a406-05841f9e20e8	(null)	org.springframework.web.util.NestedServletException: Handler dispatch fa...	(null)
8 3851e50a-a518-40d6-b724-a24256aa6e28	(null)	org.springframework.web.util.NestedServletException: Handler dispatch fa...	(null)
9 88ce6381-431f-43e4-90d9-c2e313faa8a2	(null)	org.springframework.web.util.NestedServletException: Handler dispatch fa...	(null)
10 e7239ced-343e-4c93-bb49-7bf6dcb00b0f	(null)	oracle.fsgbu.obremo.common.srv.exception.BranchExceptionat oracle.fsgbu...	(null)
11 f58d25c1-51f7-4b61-b4cc-a50ad27ff8c3	(null)	oracle.fsgbu.obremo.common.srv.exception.BranchExceptionat oracle.fsgbu...	(null)

4.4.3 Accounting Call to FLEXCUBE Universal Banking is Failing

If accounting call to FLEXCUBE Universal Banking is failing, check the *SRV_TB_AD_CENTRAL_TXN_LOG* in ADAPTER-SERVICES schema for getting Gateway response (**SUCCESS** or **FAILURE**). Select the following query to verify results.

Query: *select * from SRV_TB_AD_CENTRAL_TXN_LOG where txn_ref_no='000201334747';*

Figure 44: AD Central Transaction Log Table

ID	PARENT_ID	EJ_VERSION_NO	TXN_REF_NO	TXN_STATUS	REQ_DATE	INC_REQ_MSQ
1 2d5b9c77-86d3-43f7-9e38-fb02668fdd8e	(null)	(null)	000201334747	SUCCESS	12-MAY-20 09.31.40.506000000 PM	{ "txnDet" :

4.4.4 Oracle Banking Payments Call is Failing

If Oracle Banking Payments call is failing, check the *SRV_TB_AD_CENTRAL_TXN_LOG* and *SRV_TB_AD_OBPAY_TXN_LOG* in ADAPTER-SERVICES schema for getting Gateway response (**SUCCESS** or **FAILURE**). Select the following query to verify results.

Query: `select * from SRV_TB_AD_OBPAY_TXN_LOG where txn_ref_no='000201334747';`

Figure 45: Oracle Banking Payments Transaction Log Table

The screenshot shows the Oracle Query Builder interface. The query entered is: `select * from SRV_TB_AD_OBPAY_TXN_LOG where txn_ref_no='000201334747'`. The results show one row with the following data:

ID	PARENT_ID	EJ_VERSION_NO	TXN_REF_NO	TXN_STATUS	REQ_DATE	INC_REQ_MSQ
1 da2f7205-74be-4f63-8306-d611e6e06ce7	(null)	(null)	000201334747	SUCCESS	12-MAY-20 09.31.31.134000000	PM { "txnDet" :

4.4.5 Error During Transaction Submission

If any error occurred while submitting the transaction from **Teller Transaction** screen, check the error code and the error message. Error code will be available in ERTB_MSGS. Select the following query to verify results.

Query: `select * from ERTB_MSGS where err_code='RM-BC-PM-01';`

Figure 46: ERTB Messages

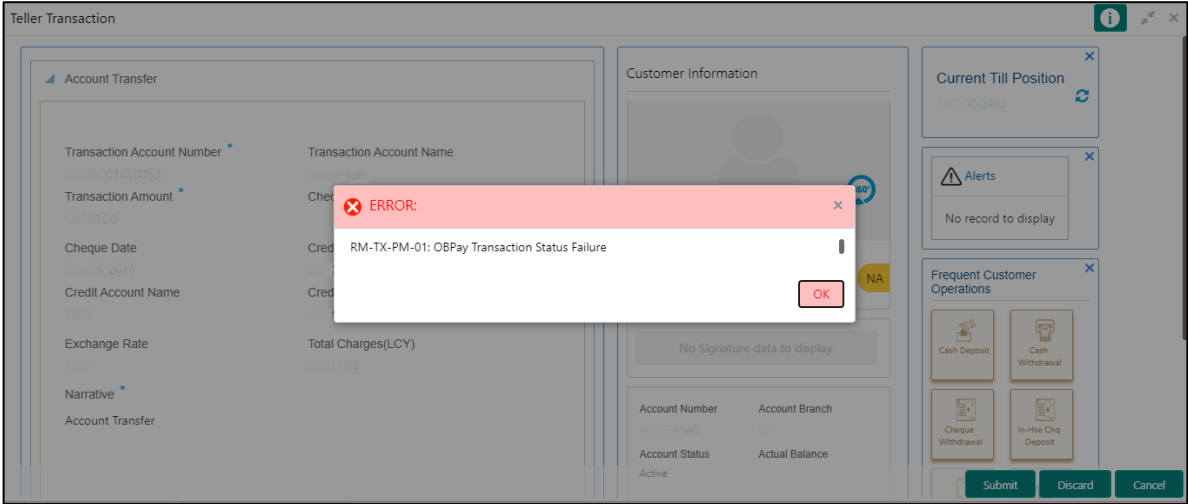
The screenshot shows the Oracle Query Builder interface. The query entered is: `select * from ERTB_MSGS where err_code='RM-TX-PM-01';`. The results show one row with the following data:

ERR_CODE	LANGUAGE	MESSAGE	TYPE	CONFIRMATION_REQD	FUNCTION_ID	MAX_SUB_PARAM	MODIFIABLE	BATCH_TYPE
1 RM-TX-PM-01	ENG	OBPay Transaction Status Failure	E	N	COMMON	0	N	I

4.4.6 RM-TX-PM-01 - OBPay Transaction Status Failure

This error may occur while submitting the transaction from **Teller Transaction** screen.

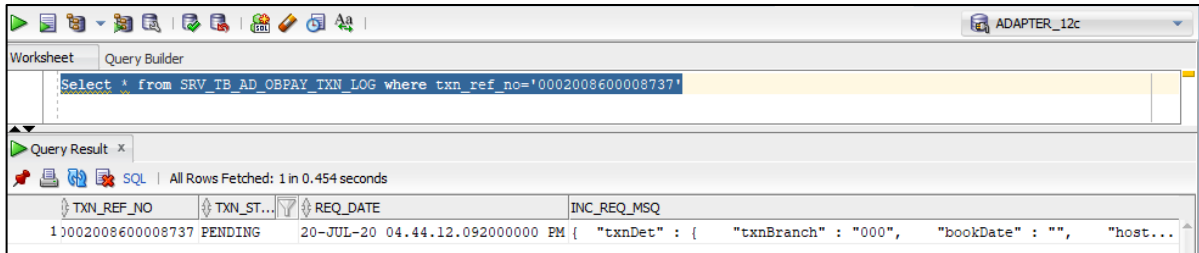
Figure 47: RM-TX-PM-01 Error



To resolve this error, validate the *SRV_TB_AD_OBPAY_TXN_LOG* in ADAPTER-SERVICES schema. If the transaction status is not **PENDING** or **FAILURE**, it can cause this error. Select the following query to verify results:

Query: `select * from SRV_TB_AD_OBPAY_TXN_LOG where txn_ref_no='0002008600008737';`

Figure 48: Oracle Banking Payments Transaction Log Table



4.5 Oracle Banking Routing Hub configuration

To configure Oracle Banking Routing Hub, specify the *srv_tm_bc_function_indicator.IS_ROUTING_ENABLED* value as **Y**. This will ensure all the calls are wired through the Oracle Banking Routing Hub Micro service. Below table contains the factory-shipped data for producer and consumer combination of integrations made through Oracle Banking Routing Hub.

SRV_TM_BC_FUNCTION_INDICATOR_ROUTE_DTLS

4.6 Purging and Archival

For Oracle Banking Branch, purge days is maintained for each branch in the table *SRV_TB_BC_ARCHIVAL*. As a part of Branch Batch closure (happens every day), the program purges the following tables to history tables:

- *SRV_TB_BC_EJ_LOG*
- *SRV_TB_BC_TXN_LOG*

4.7 Process Runtime Screens Troubleshooting

The section describes the possible issues that may occur in the Process Runtime flow screens. The Process Runtime flow screens are as follows:

- Customer Address Update
- Customer Contact Details Update
- Account Address Update

4.7.1 Possible Issues in Process Runtime Flow Screens

This subsection describes the possible issues that may occur in Process Runtime flow screens.

4.7.1.1 Screen is not launching

If the screen is not launching, go to network logs and check if *initiate* call is failing. If it is failing, see the displayed error code. The causes and fixes for the possible error codes are described below:

4.7.1.1.1 Error code 404

If the error code is 404, the entry */obremo-srv-cus-customer-services/web/v1/initiate* may be missing in product services ledger table.

4.7.1.1.2 Error code 504

If the error code is 504, the *plato-orch-service* may be down or responding very late. Restart *plato-orch-service* to fix this error.

4.7.1.1.3 Error code 400

If the business process data is not posted properly or altered by a user, it may be causing this error. Check the business process data through the postman or through the UI if menu is configuration menu is enabled. The business process data can be verified through the Postman validation as follows:

Endpoint URL: </obbrn-srv-biz-businessprocess-services/businessprocess?businessProductCode=ALL&lifeCycleCode=AauSav>

Life cycle code: CcuSav/AauSav/CauSav

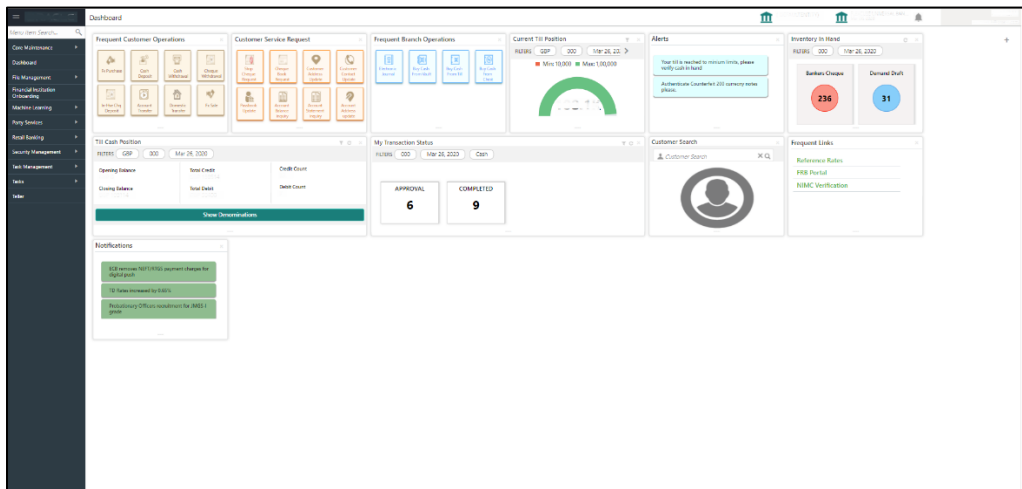
Table 3: Applicable Headers

Header	Value
userId	ADMINUSER
branchCode	000
appld	BIZPRC
authToken	Y
Content-Type	application/json
Accept	application/json
Method	GET

Perform the following steps to open and verify the business process data through the User Interface (UI):

1. Specify **User ID** and **Password**, and login to Oracle Banking Branch **Home screen**.
 → The Oracle Banking Branch **Home screen** displays.

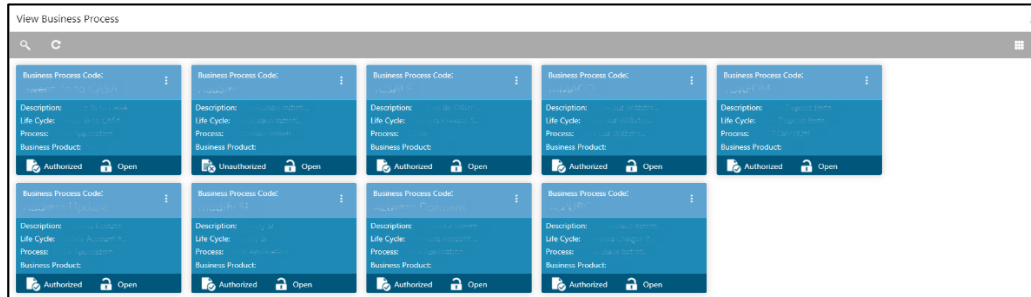
Figure 49: Home Screen



2. From **Home screen**, click **Retail Banking**, and then click **Configurations**.

3. Under **Configurations**, click **Business Process**.
4. Under **Business Process**, click **View Business Process**.
 → List of business process tiles are displayed.

Figure 50: Endpoint Entries



5. Click **CAU/CCU/AAU**.
6. Verify the business process data.

4.7.1.2 First Stage Submit is Failing

This error may be caused due to the issue/failure with get stage summary in the previous call before submit (when you click **Next**). To resolve this error, validate the get summary call failure.

4.7.1.3 Free Tasks screen is not launching

Make sure that the endpoints entries in product service ledger are correct. The endpoints entries as shown below:

Figure 51: Endpoint Entries

ID	PROD...	ENDPOINT_KEY	ENDPOINT_VALUE	REQUEST_TYPE	SERVICE_NAME
462	CORE	REASSIGN USERS	/api/v1/extn/users/subordinates?action=SUPERVISOR	GET	plato-orch-service
110	CORE	RELEASE TASK	/api/v1/extn/tasks	PUT	plato-orch-service
105	CORE	TASK SEARCH	/api/v1/extn/custom-actions/queries/tasks	POST	plato-orch-service
106	CORE	ACQUIRE TASK	/api/v1/extn/tasks	PUT	plato-orch-service
8822	CORE	TASK QUEUE	/api/v1/extn/tasks?type={dashboardQueueName}	GET	plato-orch-service

4.7.1.4 Transaction is not listed in Free Tasks/Unable to see major fields

If the submitted transaction is not listed in the **Free Tasks** or if you are unable to see created transaction major fields (**Reference Number**, **Application Number**, etc.) in **Free Tasks** screen table, validate the posted workflow definition to process RuntimeServer with the help of postman. Do the validation as follows:

Endpoint URL: <http://<host>:<port>/plato-orch-service/api/metadata/workflow/AauSav>

Table 4: Applicable Headers

Header	Value
userId	ADMINUSER
branchCode	000
appld	platoorch
authToken	Y
Content-Type	application/json
Accept	application/json
Method	GET

4.7.1.5 Getting validation errors on second stage submit

These errors may be caused by the UBS system validation errors, such as name is missing, X field cannot be modified. In such cases, verify that the data you have submitted for modification and the customer/account has all required information.

4.7.2 Additional Details

The workflow definitions are stored in the META_WORKFLOW_DEF of platoOrch schema. The business process is stored in the 24 different tables of rpm schema. Currently, the Teller transactions' business process data persisted in the eight tables out of 24 tables. The business process does not have data related to the checklist, documents, advice list, and clauses list.

The tables are as follows:

- *RPM_TM_BUSINESS_PROCESS, RPM_TW_BUSINESS_PROCESS*
- *RPM_TM_BP_STAGE, RPM_TW_BP_STAGE*
- *RPM_TM_BP_STAGE_DSCC, RPM_TW_BP_STAGE_DSCC*
- *RPM_TM_BP_STAGE_DSCC_PC, RPM_TW_BP_STAGE_DSCC_PC*

5 Error Codes

This section list the possible error codes that you might receive while using the application.

Table 5: Error Codes

Error code	Description	Type [E-Error, W-Warning, I-Information]
CLMO-AC-003	Source stage value should be either Y/N not valid	E
CLMO-AC-017	DatasegmentCode not valid	E
CLMO-AC-018	DocumentType Code not valid	E
CLMO-AC-020	Life cycle not valid	E
CLMO-AC-023	Unable to \$1 Business Process as \$2 data segment has the following dependencies \$3 in lifecycle \$4 ,which have not been mapped prior to it!	E
CLMO-AC-024	Unable to \$1 Business Process as the mandatory data segments \$2 for the \$3 lifecycle have not been mapped!	E
CLMO-AC-026	In \$1 stage of \$2 Business Process,duplicate data segements - \$3 are not allowed	E
CLMO-AC-027	Record already exist with same Lifecycle and Business Product	E
CLMO-AC-028	At \$1 in \$2 stage of \$3 Business Process,duplicate record for - \$4 exist	E
CLMO-AC-029	At \$1 in \$2 stage of \$3 Business Process,Business Product List is invalid.	E
CLMO-AC-030	Business Product Code is Invalid	E

Error code	Description	Type [E-Error, W-Warning, I-Information]
GCS-AUTH-01	Record Successfully Authorized	I
GCS-AUTH-02	Valid modifications for approval were not sent. Failed to match	E
GCS-AUTH-03	Maker cannot authorize	E
GCS-AUTH-04	No valid unauthorized modifications found for approval.	E
GCS-CLOS-002	Record Successfully Closed	I
GCS-CLOS-01	Record Already Closed	E
GCS-CLOS-02	Record Successfully Closed	I
GCS-CLOS-03	Unauthorized record cannot be closed, it can be deleted before first authorization	E
GCS-COM-001	Record does not exist	E
GCS-COM-002	Invalid version sent, operation can be performed only on latest version	E
GCS-COM-003	Please Send Proper ModNo	E
GCS-COM-004	Please send makerId in the request	E
GCS-COM-005	Request is Null. Please Resend with Proper Values	E
GCS-COM-006	Unable to parse JSON	E
GCS-COM-007	Request Successfully Processed	I

Error code	Description	Type [E-Error, W-Warning, I-Information]
GCS-COM-008	Modifications should be consecutive.	E
GCS-COM-009	Resource ID cannot be blank or "null".	E
GCS-COM-010	You have successfully cancelled \$1.	I
GCS-COM-011	Argghhh, \$1 failed to update.	E
GCS-DEL-001	Record deleted successfully	I
GCS-DEL-002	Record(s) deleted successfully	I
GCS-DEL-003	Modifications didnt match valid unauthorized modifications that can be deleted for this record	E
GCS-DEL-004	Send all unauthorized modifications to be deleted for record that is not authorized even once.	E
GCS-DEL-005	Only Maker of first version of record can delete modifications of record that is not once authorized.	E
GCS-DEL-006	No valid unauthorized modifications found for deleting	E
GCS-DEL-007	Failed to delete. Only maker of the modification(s) can delete.	E
GCS-MOD-001	Closed Record cannot be modified	E
GCS-MOD-002	Record Successfully Modified	I
GCS-MOD-003	Record marked for close, cannot modify.	E

Error code	Description	Type [E-Error, W-Warning, I-Information]
GCS-MOD-004	Only maker of the record can modify before once auth	E
GCS-MOD-005	Not amendable field, cannot modify	E
GCS-MOD-006	Natural Key cannot be modified	E
GCS-MOD-007	Psssttt, only the maker can modify the pending records.	E
GCS-OPEN-01	Teller Batch Record Already Opened	E
GCS-OPEN-01	Record Already Opened	E
GCS-REOP-003	Successfully Reopened	I
GCS-REOP-004	Unauthorized record cannot be reopened, record should be closed and authorized	E
GCS-REOP-01	Unauthorized Record cannot be Reopened	E
GCS-REOP-02	Failed to Reopen the Record, cannot reopen Open records	E
GCS-REOP-03	Successfully Reopened	I
GCS-SAV-001	Record already exists	E
GCS-SAV-002	Record Saved Successfully.	I
GCS-SAV-003	Congratulations!! The record is saved and validated successfully.	I
GCS-SAV-004	Currency Code should be unique	E

Error code	Description	Type [E-Error, W-Warning, I-Information]
GCS-SAV-005	Min cash holding should be lesser than Max cash holding	E
GCS-VAL-001	Congratulations!! Your record is successfully validated.	I
ML-TS-001	Invalid Data Source	E
ML-TS-002	Invalid datatype for case ID	E
ML-TS-003	Timeseries Model Training Failed	E
RM-AD-EC-01	Failed in ECA	E
RM-AD-HH-01	Failed in Host Handoff	E
RM-AD-PM-03	Failed in payment	E
RM-AD-UB-01	Failed in UBS	E
RM-AD-VM-01	Invalid Account Number	E
RM-AD-VM-02	VAM Service is down	E
RM-BC-AC-01	Failed in Accounting	E
RM-BC-BP-01	Please Enter the entire Branch Parameter Detail values	E
RM-BC-CH-01	Minimum Charge Greater Than Maximum Charge	E
RM-BC-CH-02	Please Enter the proper charge code	E

Error code	Description	Type [E-Error, W-Warning, I-Information]
RM-BC-CH-03	Charge Fields Cannot be empty	E
RM-BC-CH-04	Please Enter Minimum and Maximum Charges	E
RM-BC-CP-03	Function code should not be empty	W
RM-BC-EJ-01	Record Not Found	E
RM-BC-EJ-02	Record Updation Failed..	E
RM-BC-EJ-02	Failed to Update the Record	E
RM-BC-EJ-02	Failed in Updating Record..	E
RM-BC-EX-01	Unhandled Exception Occured	E
RM-BC-EX-02	Transaction Timed Out	E
RM-BC-EX-03	Unhandled Exception Occured	E
RM-BC-ML-01	Email Account not Valid	E
RM-BC-OB-01	Branch batch is already open for the current date	E
RM-BC-OB-02	Branch batch can be opened only by supervisor	E
RM-BC-OB-03	Vault batch is open for the current or previous date	E
RM-BC-OB-04	User does not have rights to access this screen	E

Error code	Description	Type [E-Error, W-Warning, I-Information]
RM-BC-OB-04	User do not have rights to access this screen	E
RM-BC-OB-05	Teller batch is open for the current or previous date	E
RM-BC-OB-06	Please complete the pending transactions in the Electronic Journal log	E
RM-BC-OB-07	Branch batch is not opened	E
RM-BC-OB-08	Please close the previous day batch	E
RM-BC-OB-10	Teller batches should be closed before closing the branch/vault batch	E
RM-BC-OB-11	Vault batch should be closed before closing the branch batch	E
RM-BC-OB-16	Teller batch is closed, do you want to reopen	W
RM-BC-OB-17	Teller batch is closed	E
RM-BC-OB-18	Teller batch is already open	E
RM-BC-OB-19	Teller batch is closed	I
RM-BC-OB-20	Invalid Currency Code	E
RM-BC-OB-21	Authlimit Breached	E
RM-BC-OB-22	Transaction limit breached at role level	A
RM-BC-OB-23	Wrong token	E

Error code	Description	Type [E-Error, W-Warning, I-Information]
RM-BC-OB-24	Branch batch is already closed	E
RM-BC-OB-25	Vault batch is already closed	E
RM-BC-OB-26	User is not allowed to open/close the teller batch	E
RM-BC-OB-27	Vault batch is not opened	E
RM-BC-OB-29	Please maintain denomination tracking in Branch Parameter	E
RM-BC-OB-30	Denomination Amount is not equal to total cash amount	E
RM-BC-OB-31	Insufficient Amount available in Till/Vault	E
RM-BC-OB-32	Logged in user ID and Teller Id cannot be same	E
RM-BC-OB-33	Invalid Input TellerId	E
RM-BC-OB-34	Current Denomination balance is less than zero for \$1	E
RM-BC-PM-01	Record Successfully Updated	I
RM-BC-RT-01	Failed in getting the exchange rate	E
RM-BC-RT-02	Failed to fetch Branch Accounting Tags	E
RM-BC-TF-01	User not Verified Signature	E
RM-BC-TF-02	Transaction involves Inter Bank Accounts	W

Error code	Description	Type [E-Error, W-Warning, I-Information]
RM-BC-TF-03	Default Charge Amount was modified	W
RM-BC-TF-04	Default Exchange Rate was modified	W
RM-BC-TF-05	Amount exceeds limit for this transaction	W
RM-BC-TF-06	Authorisation required. Amount exceeds limit for the transaction	A
RM-BC-TF-07	Transaction & Electronic Journal ID needs to be Enter..	E
RM-BC-TF-08	Invalid Txn_Ref_Number found for given EJId	E
RM-BC-TR-07	Invalid Input!!	E
RM-BC-UL-01	User Limit Transaction Amount breached	W
RM-BC-UL-02	Authorizer Limit Transaction Amount breached	E
RM-BC-UL-03	User Limit Holding Minimum Amount breached	W
RM-BC-UL-04	User Limit Holding Maximum Amount breached	W
RM-BC-UP-01	Amount exceeds limit for this transaction	W
RM-BC-UP-02	Minimum charge amount should be applied	E
RM-BC-UP-03	Amount exceeds limit for this transaction	A
RM-BC-UP-04	Authorisation amount breached.	E

Error code	Description	Type [E-Error, W-Warning, I-Information]
RM-BC-UP-05	Till maximum balance breached	W
RM-BC-UP-06	Till minimum balance breached	W
RM-BC-UP-07	Authoriser role limit breached	A
RM-BC-UP-08	Teller role limit breached	A
RM-BC-UP-09	Transaction requires approval.	A
RM-BC-UR-01	Submit URL not maintained	E
RM-BC-VA-01	Till open	E
RM-BC-VA-02	Vault Open	E
RM-BC-VA-03	Pending txn	E
RM-BC-VA-10	Invalid Status	E
RM-BC-XR-01	Exchange not Maintained	E
RM-BC-XT-01	Failed in getting the exchange rate	E
RM-CH-LM-01	Channel limit not found for Account class group	E
RM-CH-LM-02	Channel limit details not found	E
RM-CH-LM-03	Channel limit details found for transaction currency	E

Error code	Description	Type [E-Error, W-Warning, I-Information]
RM-CH-LM-04	Number of Withdrawal breached	E
RM-CH-LM-05	Withdrawal Limit breached	E
RM-CM-OR-001	Failed to initiate.	E
RM-CM-OR-002	Transaction is successfully initiated.	I
RM-CM-OR-003	Invalid action, failed to initiate.	E
RM-CM-OR-004	\$1 is not submitted, transaction remains the same.	I
RM-CM-OR-005	Cannot proceed with submit as the action is not initiated.	E
RM-CM-OR-006	Cannot proceed with submit as the information is incomplete.	E
RM-CM-OR-007	Failed to submit.	E
RM-CM-OR-008	Record successfully submitted.	I
RM-CM-OR-009	\$1 is in-progress, failed to initiate.	E
RM-CM-OR-010	Aw, snap! An unexpected exception occurred, try again.	E
RM-CM-OR-011	Invalid request.	E
RM-CM-OR-012	Cannot proceed with submit as the action is not initiated.	E
RM-CM-OR-013	Cannot find the provided information.	E

Error code	Description	Type [E-Error, W-Warning, I-Information]
RM-CM-OR-014	Record is not yet submitted by \$1, cannot initiate the action.	E
RM-CM-OR-015	Record already unlocked by \$1.	E
RM-CS-OB-01	Invalid denomination found	E
RM-CS-OB-02	Invalid denomination found for given currency or denomination type	E
RM-CS-OB-03	Transaction Number Already Exist	E
RM-CS-OB-04	Data Not Found	E
RM-CS-OB-05	Amount Mismatch	E
RM-CS-OB-50	SanctionRefNo is already Present.	E
RM-CS-TF-07	MinCash exceeds the MaxCash Value	W
RM-CT-AC-01	Charges are not maintained	E
RM-CT-AC-02	Charges should not be maintained	E
RM-CT-AC-04	Failed to get the account	E
RM-EX-CS-01	User is an Invalid User	E
RM-EX-CS-02	Account number is invalid.	E
RM-EX-CS-03	Source Reference Number Already Present	E

Error code	Description	Type [E-Error, W-Warning, I-Information]
RM-EX-CS-05	NegotiatedExchangeRate is not provided	E
RM-EX-CS-06	NegotiationReferenceNumber is not provided	E
RM-EX-PY-05	NegotiatedExchangeRate is not provided	E
RM-EX-PY-06	NegotiationReferenceNumber is not provided	E
RM-PA-EQ-01	Record not Found.	E
RM-PY-AC-01	From account and to account are same	E
RM-PY-AC-02	Account number not entered for field \$1	E
RM-PY-BC-01	Bank code or bank BIC code not entered	E
RM-PY-BC-02	Please enter either bank code or bank BIC code	E
RM-PY-CL-01	Payee account and drawer account are same	E
RM-PY-CL-02	Drawer account number and instrument number combination are same	E
RM-PY-CL-03	Invalid Batch Number	E
RM-PY-CR-01	Remittance number not found	E
RM-PY-CR-02	Remittance number is already issued/used	E
RM-PY-CR-03	Please provide Remittance number/Test Key number	E

Error code	Description	Type [E-Error, W-Warning, I-Information]
RM-PY-CR-04	Invalid Remittance number/Test Key number	E
RM-PY-IN-01	Instrument details not found	E
RM-TD-SL-01	No Maintanance found for Term Deposit opening	E
RM-TD-SL-02	Offset GL account not found	E
RM-TN-RV-02	The transaction Status should be pending	E
RM-TR-EX-01	Unhandled Exception Occured	E
RM-TS-TB-10	Teller batch not opened yet	E
RM-TX-BE-01	Unhandled Exception Occured	E
RM-TX-CA-01	Charge amount limit Breached from Min Max Amount	E
RM-TX-CA-02	Charge amount limit Breached from Min Max Pcentage	E
RM-TX-CC-01	Add provided Currency to the Till	E
RM-TX-ET-01	Session should be Opened before closing.	E
RM-TX-ET-02	Amount \$1 \$2 has to be given by the customer.	I
RM-TX-ET-03	Amount \$1 \$2 has to be given to the customer.	I
RM-TX-ET-04	The incoming cash amount in the session is exceeding by \$1 \$2.Do you want to proceed.	W

Error code	Description	Type [E-Error, W-Warning, I-Information]
RM-TX-ET-05	Open Teller Sessions are present. Cannot proceed with the operation.	E
RM-TX-ET-06	Teller Session Transactions not completed. Cannot proceed with the operation.	E
RM-TX-EX-01	Unhandled Exception Occured	E
RM-TX-HH-01	Failed in Host Handoff	E
RM-TX-LC-01	Transaction is locked	E
RM-TX-LI-00	Amount exceeds the limit of transaction.	E
RM-TX-NL-01	Unhandled Exception Occured	E
RM-TX-OC-01	Branch Info not available	E
RM-TX-OC-02	Function Code definition not maintained	E
RM-TX-OC-03	Function Code preferences not maintained	E
RM-TX-OC-04	Branch Parameter maintenance not found	E
RM-TX-OC-05	User preferences not maintained	E
RM-TX-OC-06	Default authorizer not maintained for the user	E
RM-TX-OC-07	Function Indicator entry not found	E
RM-TX-OC-08	Record status is null in Function Code Definition Screen	E

Error code	Description	Type [E-Error, W-Warning, I-Information]
RM-TX-OC-09	Record status is closed in Function Code Definition Screen	E
RM-TX-OC-10	Record status is null in User Preferences Screen	E
RM-TX-OC-11	Record status is closed in User Preferences Screen	E
RM-TX-OC-12	Record status is null in Function Code Preferences Screen	E
RM-TX-OC-13	Record status is closed in Function Code Preferences Screen	E
RM-TX-PM-01	OBPay Transaction Status Failure	E
RM-TX-PM-03	Failed in OBPM Clearing Return	E
RM-TX-RV-01	The transaction Status should be completed	E
RM-TX-RV-02	Only maker can reverse the transaction	E
RM-TX-RV-03	Authorization required for reversal	A
RM-TX-RV-04	Minimum teller branch ccy holding limit breached	E
RM-TX-RV-05	Maximum teller branch ccy holding limit breached	E
RM-TX-SL-01	Unhandled Exception Occured	E
RM-TX-ST-01	The incoming cash amount in the session is exceeding by \$1.Do you want to proceed.	W
RM-TX-ST-02	Total inflow cash amount remaining after this transaction is \$1.	I

Error code	Description	Type [E-Error, W-Warning, I-Information]
RM-TX-ST-03	Another open session in progress for the entered Customer No	E
RM-TX-ST-04	Another open session in progress for the Teller	E
RM-TX-ST-05	Teller session needs to be opened to perform this transaction.	E
RM-TX-ST-06	This transaction is not allowed inside the teller session	E
RM-TX-TO-01	Unhandled Exception Occured	E
RM_BC_CV_01	Amount Limit Exceeded for Account Number	E
RM_BC_CV_02	Amount Limit Exceeded for Customer Type	E
RM_BC_CV_03	Amount Limit Exceeded for Product Class	E
RM_BC_MA_01	Netting Charges Required Should be (Y/N).	E
RM_BC_MA_02	Main Leg Accounting Required Should be (Y/N).	E
RM_BC_MN_01	Invalid function code for till/vault indicator	E
RM_BC_MN_02	Invalid transaction type for till/vault indicator	E
RM_BC_OB_08	Please close the previous day batch	E
RM_BC_OB_09	User is not allowed to open the Teller batch	E
RM_BC_OB_10	Teller batches should be closed before closing the branch/vault batch	E

Error code	Description	Type [E-Error, W-Warning, I-Information]
RM_BC_OB_11	Vault batch should be closed before closing the branch batch	E
RM_BC_TB_10	Teller batch is already opened	E
RM_BC_TB_11	Teller batch is already closed	E
RM_BC_VA_01	Supervisor Id is not present for manual assignment.	E
RM_CS_BC_01	Invalid Instrument No	E
RM_CS_BC_02	Instrument is already in Used status	E
RM_CS_BC_03	Instrument is not in INIT status to Print/Reprint	E
RM_CS_BC_04	Instrument Number Already Liquidate	E
RM_CS_DD_04	Incorrect DD details	E
RM_CT_AC_03	Account Type mismatch.... Exception Occured	E
RM_CT_AC_04	Invalid Account Number	E
RM_CT_AC_06	Both Account cannot be Customer Accounts	E
RM_TR_EX_01	Unhandled Exception Occured	E
RM_TX_CX_01	Authorization required for Charge Amendment.	A
RM_TX_EX_01	Authorization required for inter branch Transaction.	A

Error code	Description	Type [E-Error, W-Warning, I-Information]
RPM-AC-003	Source stage value should be either Y/N not valid	E
RPM-AC-017	DatasegmentCode not valid	E
RPM-AC-018	DocumentType Code not valid	E
RPM-AC-020	Life cycle not valid	E
RPM-AC-023	Unable to \$1 Business Process as \$2 data segment has the following dependencies \$3 in lifecycle \$4 ,which have not been mapped prior to it!	E
RPM-AC-024	Unable to \$1 Business Process as the mandatory data segments \$2 for the \$3 lifecycle have not been mapped!	E
RPM-AC-026	In \$1 stage of \$2 Business Process,duplicate data segements - \$3 are not allowed	E
RPM-AC-027	Record already exist with same Lifecycle and Business Product	E
RPM-AC-028	At \$1 in \$2 stage of \$3 Business Process,duplicate record for - \$4 exist	E
RPM-AC-029	At \$1 in \$2 stage of \$3 Business Process,Business Product List is invalid.	E
RPM-AC-030	Business Product Code is Invalid	E
RT-F23-001	Error. Enter at least one row in Payment Data Details	E

Error code	Description	Type [E-Error, W-Warning, I-Information]
RT-F23-002	Error. Cannot enter more than eight records in Payment Data Details	E
RT-F23-006	Error. Mandatory Field Payment Type Cannot be Null.	E
RT-F23-007	Error. Fiscal Code has to be 11 or 16 character long.	E
RT-F23-008	Error. Fiscal code does not meet checksum algorithm validations	E
RT-F23-017	Error. Enter at least one field in either Reference Number Available or Reference Number Not Available.	E
RT-F23-019	Error. Both Reference Number and Primary fiscal code cannot be null.	E
RT-F23-020	Invalid character entered for Tax Code	E
RT-F24-099	Payment Amount Cannot be Zero/Negative	E
RT-F24-101	Payment amount should not Be Blank ,Please Click on Refresh Button	E
RT-F24-114	Principal fiscal code is mandatory	E
UBS-BC-UB-01	No More Payments	E
UBS-BC-UB-02	Invalid Settlement Account for the Contract	E

6 Appendix A: Acronyms, Abbreviations, and Definitions

The following acronyms/abbreviations are used in this guide:

Table 6: Acronyms and Abbreviations

Acronyms	Definition
API	Application Programming Interface
CMC	Common Core
ELK	Elasticsearch Logstash Kibana
HTTP	Hypertext Transfer Protocol
LDAP	Lightweight Directory Access Protocol
MOC	Mid-office Common Core
SMS	Security Management System
SSL	Secure Sockets Layer
OBMA	Oracle Banking Micro Service Architecture
UI	User Interface
URL	Uniform Resource Locator
VPN	Virtual Private Network

7 Appendix B: Related Documentation

The related documents are as follows:

- Observability User Guide
- Getting Started User Guide
- Oracle Banking Microservices Platform Foundation User Guide
- Oracle Banking Common Core User Guide
- Oracle Banking Security Management System User Guide
- Oracle Banking Branch User Guide
- Servicing Configurations User Guide
- Current Account and Savings Account User Guide