

Troubleshooting Guide

Oracle Banking Branch

Release 14.6.0.0.0

Part Number F57244-01

May 2022

Troubleshooting Guide

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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 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 Oracle Banking Micro services Architecture 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

Topic	Description
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:

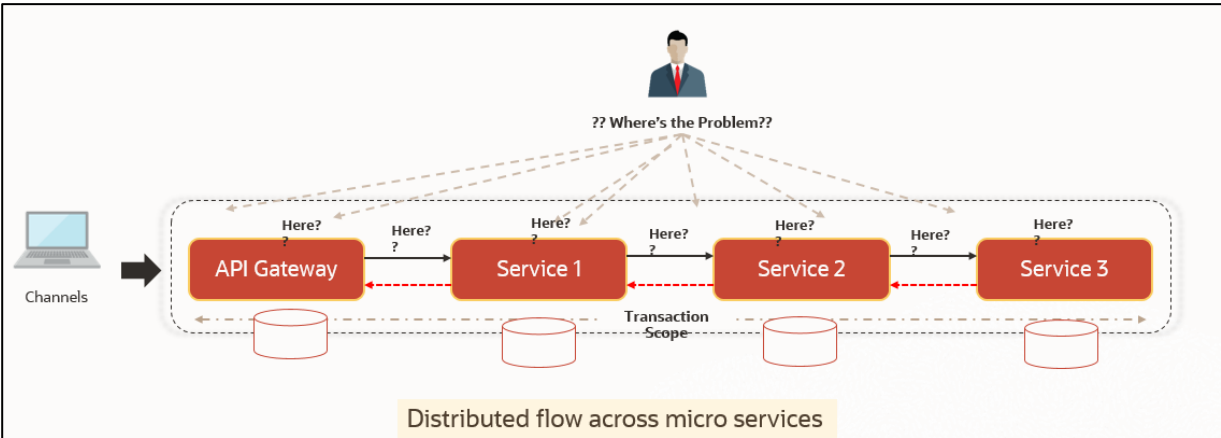
- [2.1 Where is the Problem](#)
- [2.2 Preliminary Checks from UI](#)
- [2.3 Preliminary Checks from Service Log Files](#)
- [2.4 Troubleshooting using Zipkin Traces](#)
- [2.5 Troubleshooting Logs using ELK Stack](#)
- [2.6 Troubleshooting Environmental Issues](#)

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

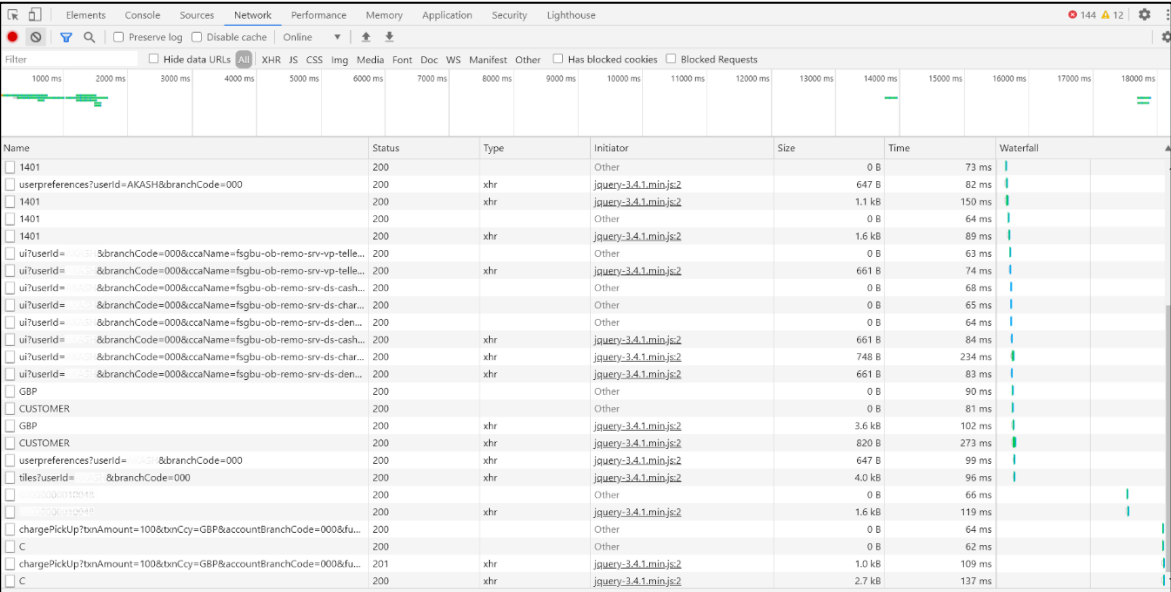


Figure 3: Non 2xx Response

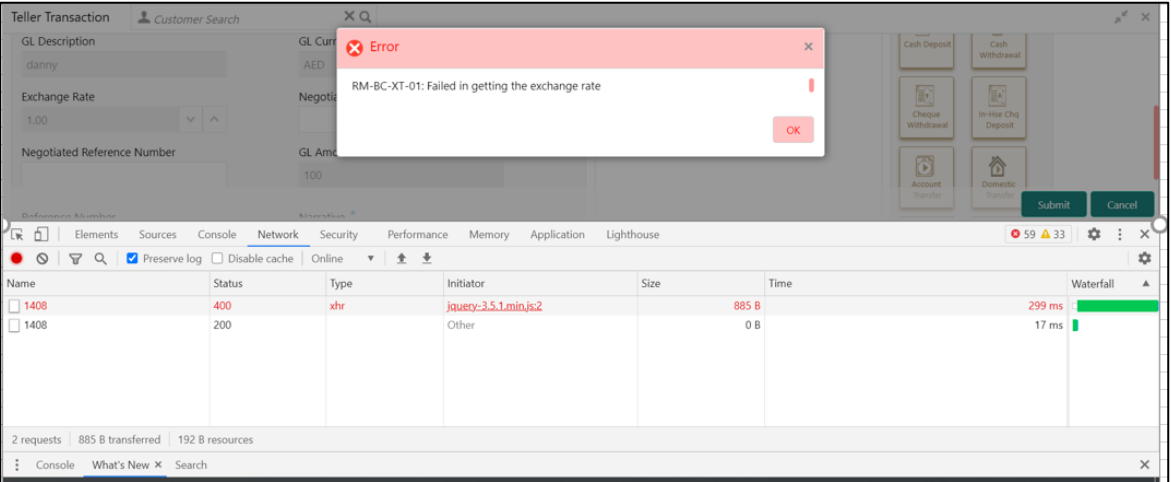
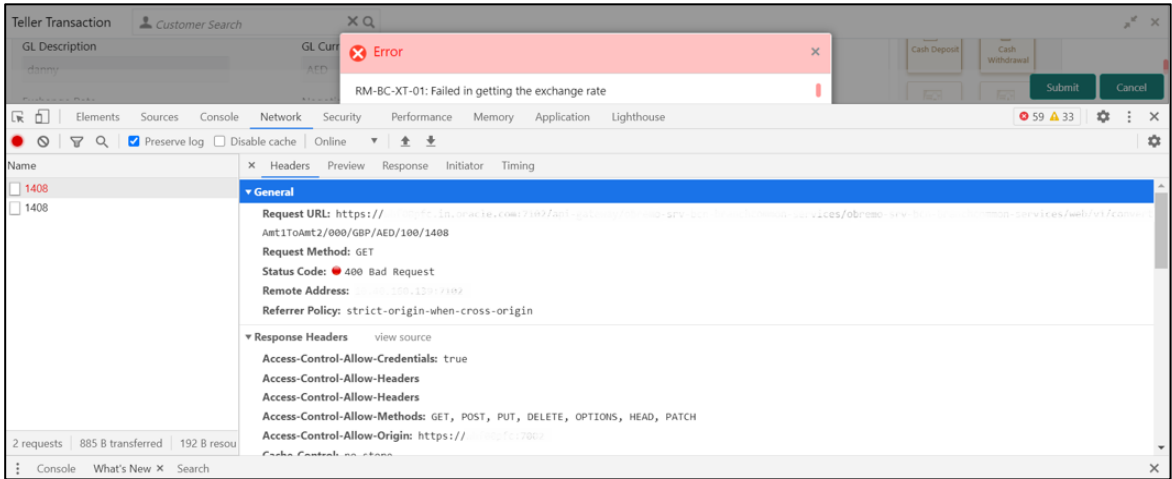
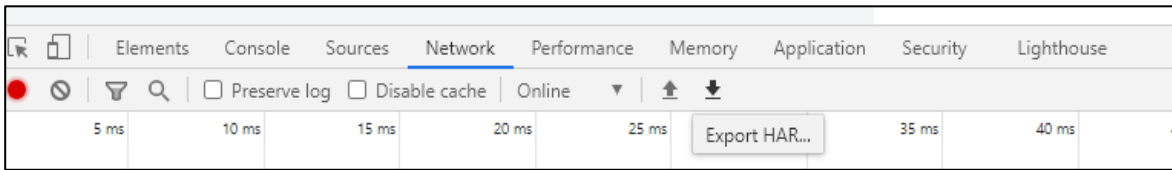


Figure 4: Details of Non 2xx Response



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/F45529_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

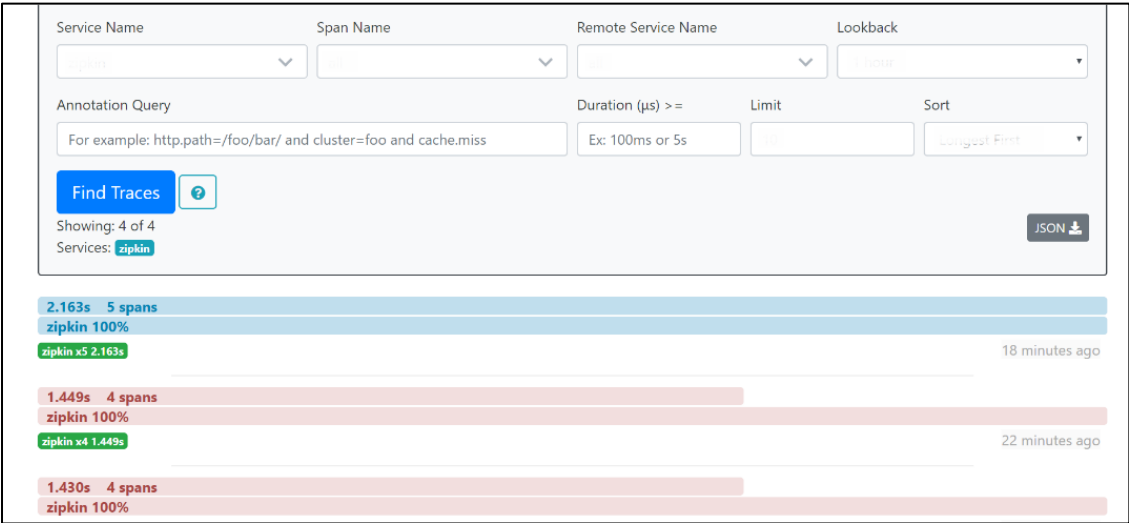
The screenshot shows the Zipkin web interface with the following elements:

- Navigation links: Investigate system behavior, Find a trace, View Saved Trace, Dependencies.
- Buttons: Try Lens UI, Go to trace, Search.
- Search filters:
 - Service Name: dropdown menu with 'zipkin' selected.
 - Span Name: dropdown menu with '...' selected.
 - Remote Service Name: dropdown menu with '...' selected.
 - Lookback: dropdown menu with '10 minutes' selected.
 - Annotation Query: text input field containing 'For example: http.path=/foo/bar/ and cluster=foo and cache.miss'.
 - Duration (μ s) >=: text input field containing 'Ex: 100ms or 5s'.
 - Limit: text input field containing '10'.
 - Sort: dropdown menu with 'Longest First' selected.
- Buttons: Find Traces (blue), ? (help icon).
- Message: Please select the criteria for your trace lookup. (light blue background)

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.

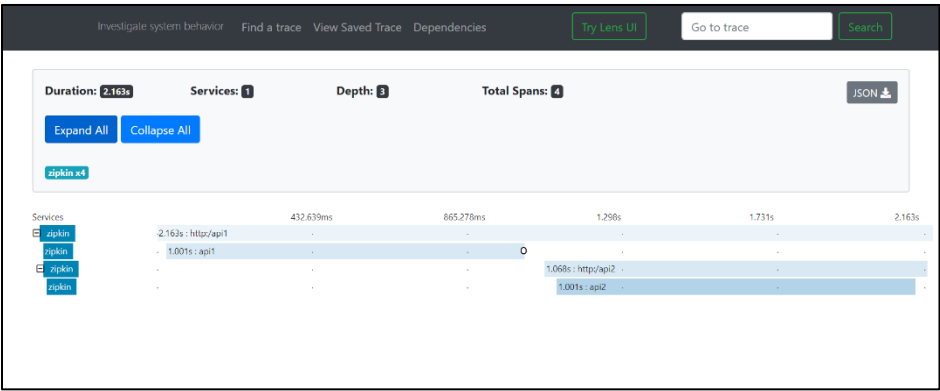
Figure 7: List of Traces



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

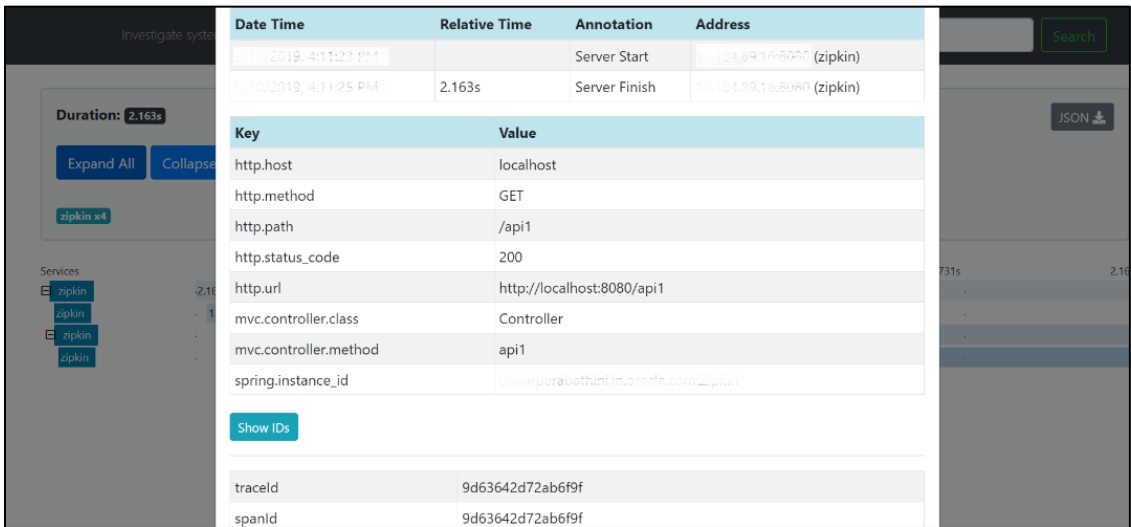
NOTE: *Figure 8* shows an individual trace when it is opened. It also describes the time taken for each block. As the two custom spans are created inside two service calls, you can find a total of four blocks. The time taken for an individual block can be seen in *Figure 8*.

Figure 8: Individual Trace



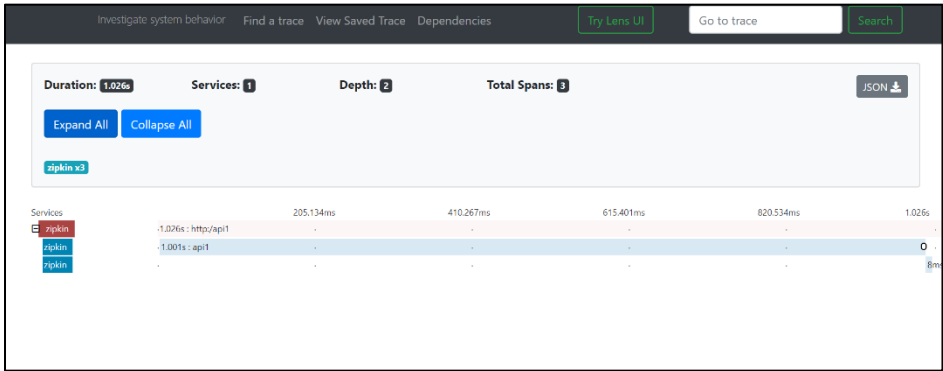
- 4. Click an individual block to display the details.

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



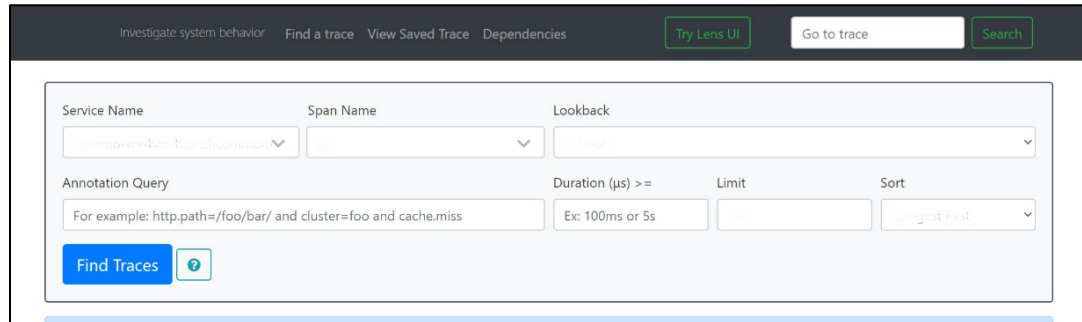
2.4.3 Zipkin Issues

2.4.3.1 Application Service is not Registered

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

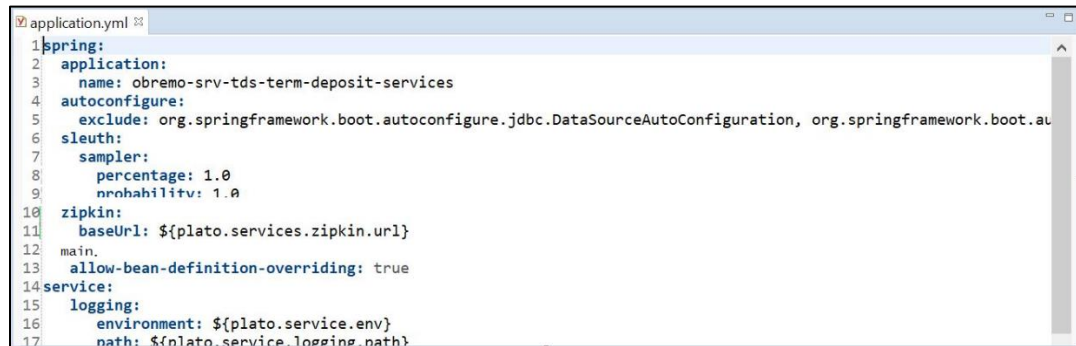
1. Check the applications, which are sending the trace report to Zipkin server from **Service Name** drop-down list.

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

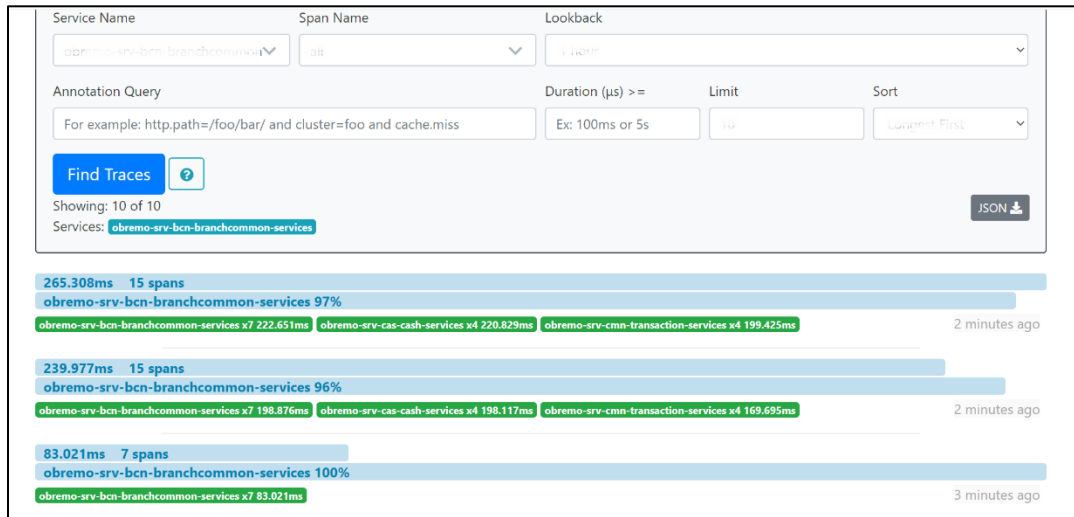
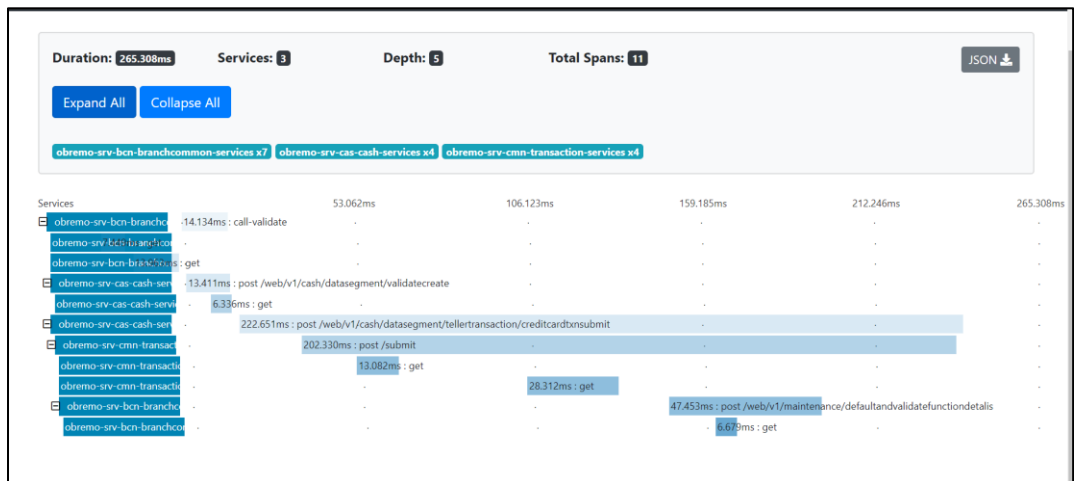


Figure 16: Branch Common Services Trace



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"

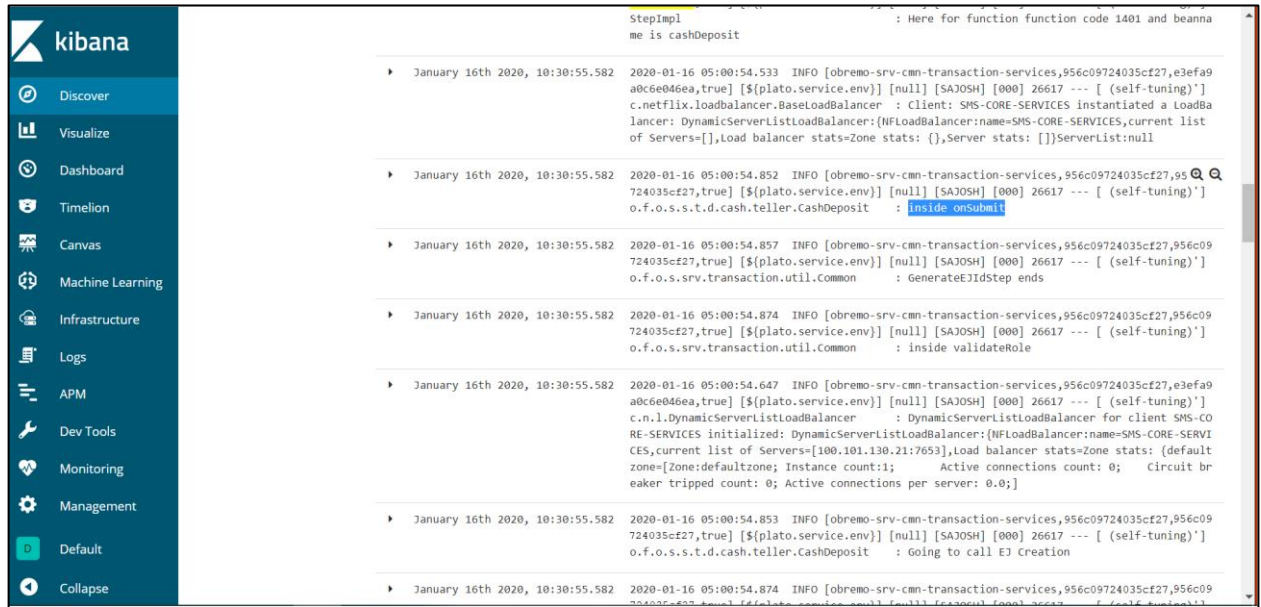
# When this setting's value is true Kibana uses the hostname specified in the server.host
```

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

2.5.2 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

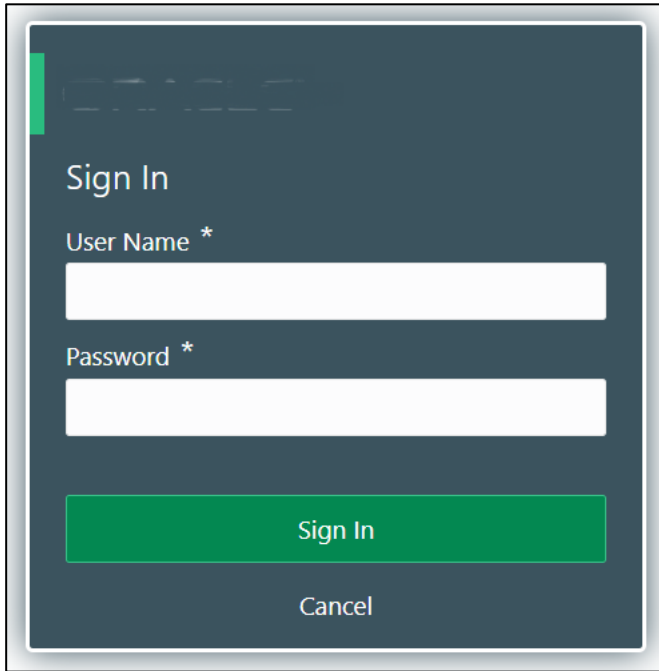
This subsection describes the possible issues that may occur while logging in and launching the screens.

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 security schema of Oracle Banking Microservices Architecture, make sure that the data is updated as shown in [Figure 22](#).

Figure 22: Security Configuration Table

ID	KEY	VALUE
1	PASSWORD_ATTRIBUTE	userPassword
2	USER_STORE	LDAP
3	CORS_ALLOWED_ORIGINS	hostname.in.oracle.com
4	LDAP_SERVER_CREDENTIAL_SALT	0.9412345671234567
5	USER_HEADER_ATTRIBUTE_KEY	userId
6	USER_HEADER_ATTRIBUTE_REQUIRED	Y
7	JWT_EXP_SECONDS	360000000
8	JWT_ALGORITHM	HS512
9	LDAP_URL	ldap://hostname.in.oracle.com:7001
10	LDAP_SERVER_USER	cn=admin
11	LDAP_SERVER_BASE	dc=BRANCH
12	LDAP_SERVER_CREDENTIAL	51kCLASj1Bj0S2GPt0sYMg==
13	LDAP_USER_SEARCH_BASE	ou=people,ou=myrealm
14	LDAP_USER_PREFIX	uid
15	LDAP_PROVIDER	EMBEDDED_WEBLOGIC
16	AUTO_TOKEN_REGENERATE_MODE	true
17	IS_SSO_CONFIGURED	false
18	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:

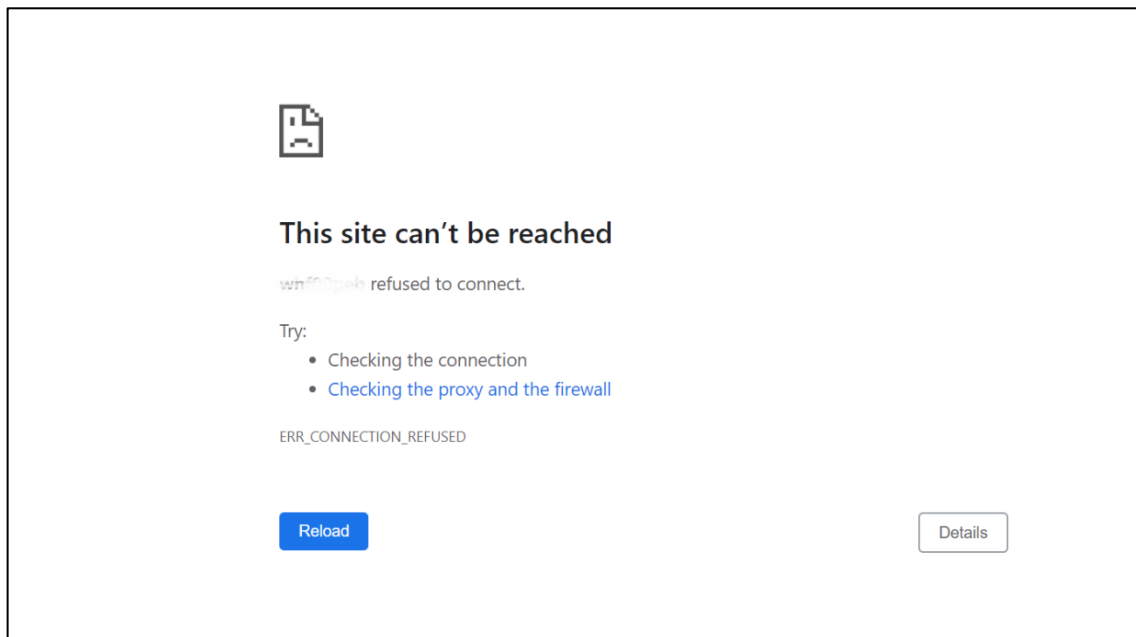
- [3.1 WebLogic](#)
- [3.2 Application Services](#)

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

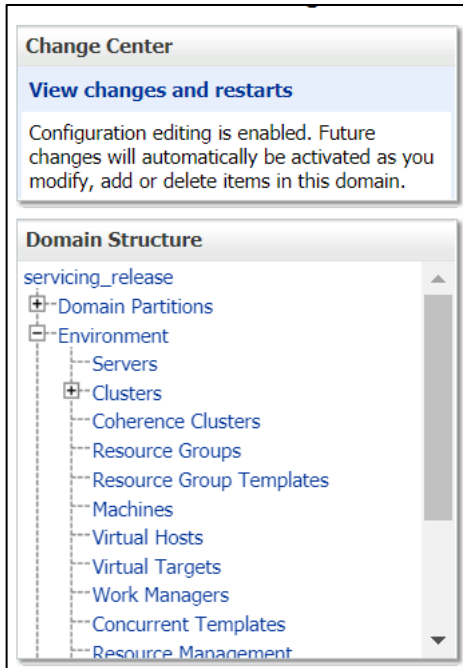
If there is an error like **GC Overhead limit exceeded** or **OutOfMemoryException** is thrown while starting the services, the following details need to be shared.

- 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:

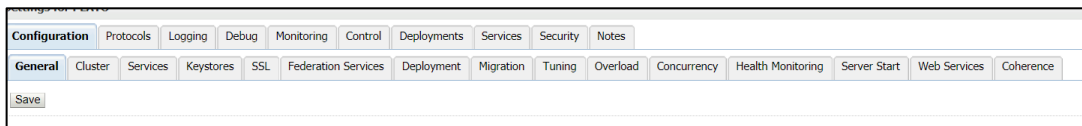
1. Click **Servers**.

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

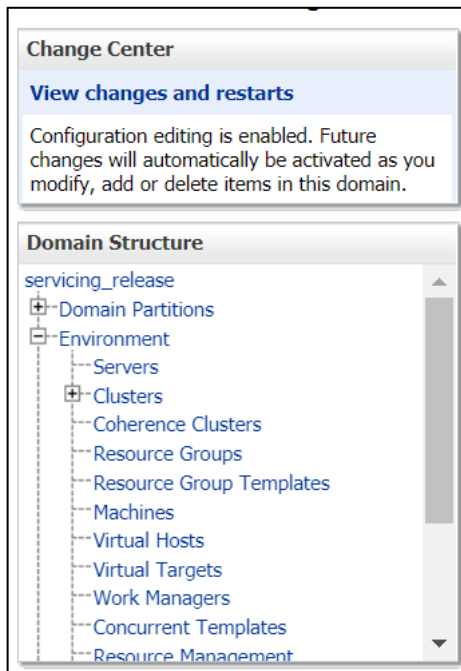


3.1.4 Managed Server is Failed or Not Reachable

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

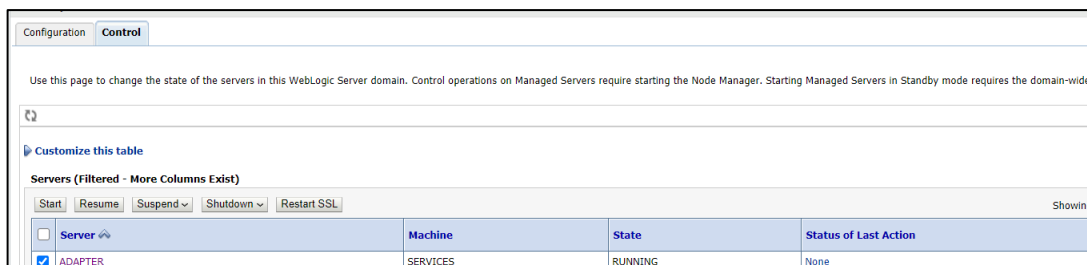
1. Go to **Servers**, select **Control** tab, and then select the managed server.

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
Oracle Banking Branch	obbrn-srv-biz-businessprocess-services	Y	Used for Process Runtime based screens
Oracle Banking Branch	obremono-srv-adp-adapter-services	Y	Used across all transactions
Oracle Banking Branch	obremono-srv-bcn-branchcommon-services	Y	Used across all transactions and maintenance screens
Oracle Banking Branch	obremono-srv-cas-cash-services	Y	Used for cash, TILL, VAULT and miscellaneous transactions
Oracle Banking Branch	obremono-srv-cmn-ml-processing	Y	Used across transactions that use Machine Learning (ML)
Oracle Banking Branch	obremono-srv-cmn-transaction-services	Y	Used across all transactions, enquiries, batches, Electronic Journal
Oracle Banking Branch	obremono-srv-cmn-utils-services	Y	Used across all transactions
Oracle Banking Branch	obremono-srv-cus-customer-services	Y	Used for Customer Servicing Screens

Group	Service List	Required for Servicing	Usage
Oracle Banking Branch	obremo-srv-ext-common-txn	Y	Used across all transactions
Oracle Banking Branch	obremo-srv-pay-payment-services	Y	Used for remittance transactions
Oracle Banking Branch	obremo-srv-prj-projection-services	Y	Used across all transactions
Oracle Banking Branch	obremo-srv-tds-term-deposit-services	Y	Used for Term Deposit (TD) transactions
Oracle Banking Branch	extended-cluster.war	Required for Italy Cluster	Italy Cluster
Oracle Banking Branch	obremo-batch-futuremavprocess-extended-services-14.0.2.war	Required for Italy Cluster	Italy Cluster
Oracle Banking Branch	obremo-mavbatchprocess-service-5.5.0.war	Required for Italy Cluster	Italy Cluster
Oracle Banking Branch	obremo-circularchq-service-5.8.0.war	Required for Italy Cluster	Italy Cluster
Oracle Banking Branch	obremo-mrfpaymenttxn-service-5.5.0.war	Required for Italy Cluster	Italy Cluster
Oracle Banking Branch	obremo-blockmavnos-service-14.0.2.war	Required for Italy Cluster	Italy Cluster
Oracle Banking Branch	obremo-mrfparams-service-5.5.0.war	Required for Italy Cluster	Italy Cluster

Group	Service List	Required for Servicing	Usage
Oracle Banking Branch	obremo-batch-cancelmavbatch-extended-services-14.0.2.war	Required for Italy Cluster	Italy Cluster
Oracle Banking Branch	obremo-enttellerlargedenom-service-14.0.2.war	Required for Italy Cluster	Italy Cluster
Oracle Banking Branch	obremo-statictype-service-5.8.0.war	Required for Italy Cluster	Italy Cluster
Oracle Banking Branch	obremo-issuemav-extended-services-14.0.2.war	Required for Italy Cluster	Italy Cluster
Oracle Banking Branch	obbrn-component-server-5.7.0.war	Y	User Interface (UI)
Oracle Banking Microservices Architecture	plato-batch-server	N	
Oracle Banking Microservices Architecture	plato-feed-services	N	
Oracle Banking Microservices Architecture	plato-alerts-management-services	Y	Required for Oracle Banking Microservices Architecture framework
Oracle Banking Microservices Architecture	plato-api-gateway	Y	Required for Oracle Banking Microservices Architecture framework

Group	Service List	Required for Servicing	Usage
Oracle Banking Microservices Architecture	plato-config-service	Y	Required for Oracle Banking Microservices Architecture framework
Oracle Banking Microservices Architecture	plato-discovery-service	Y	Required for Oracle Banking Microservices Architecture framework
Oracle Banking Microservices Architecture	plato-orch-service	Y	Required for Oracle Banking Microservices Architecture framework
Oracle Banking Microservices Architecture	plato-ui-config-services	Y	Required for Oracle Banking Microservices Architecture framework
Security Management System (SMS)	sms-core-services-5.8.0.war	Y	SMS services
SMS	sms-component-server-5.5.0.war	Y	UI
Common Core (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

Group	Service List	Required for Servicing	Usage
CMC	cmc-nlp-text-extraction-services	Y	Used in ML
CMC	cmc-obrh-service	Y	Used for routing via Oracle Banking Routing Hub
CMC	cmc-report-service	Y	Used for Advices
CMC	cmc-resource-segment-orchestrator-service	Y	Used in screens using GCS like maintenance screens
CMC	cmc-screenclass-services	Y	Used for screen handling
CMC	cmc-settlements-services	N	
CMC	cmc-transactioncontroller-services	Y	Used in screens using GCS like maintenance 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

Group	Service List	Required for Servicing	Usage
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
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	Virtual account management 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
Mid-office Common Core (MOC)	moc-component-server-5.7.0.war	Y	UI

Group	Service List	Required for Servicing	Usage
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 and ML Screens
MOC	cmc-documentmanagement-services	Y	Process Runtime and ML Screens
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 Definition for Process Runtime based screens
MOC	cmc-queue-service	N	
MOC	cmc-sequencegenerator-services	N	

4 Troubleshooting Functional Workflows

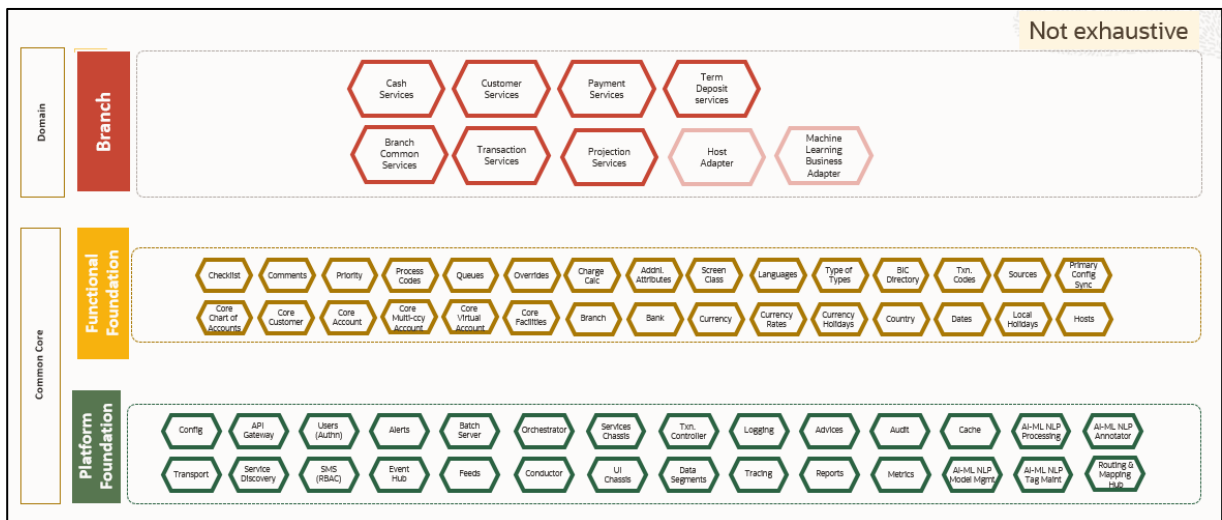
This topic describes the troubleshooting functional workflows applicable to Oracle Banking Branch. It contains the following sections:

- [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

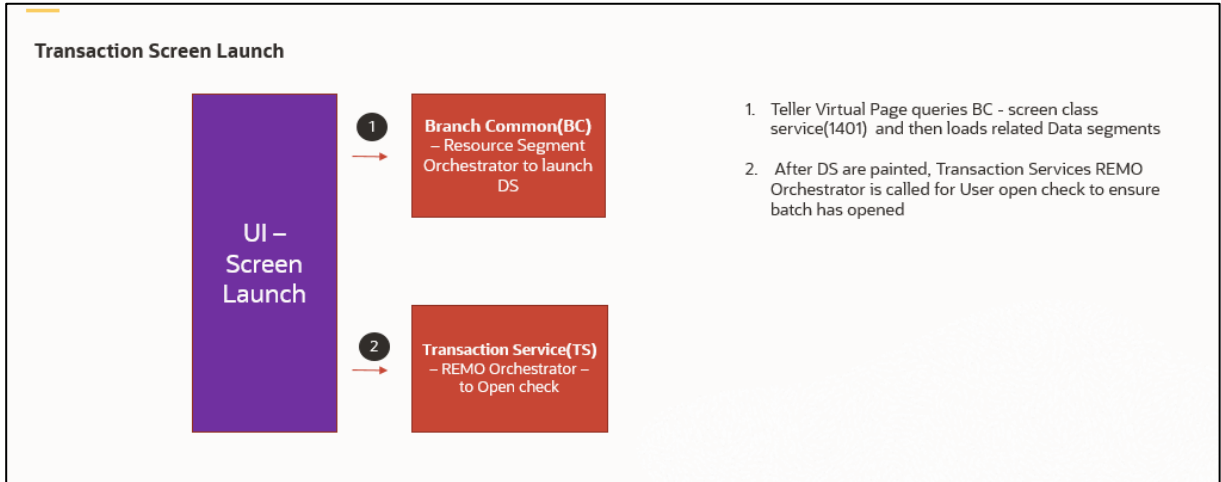
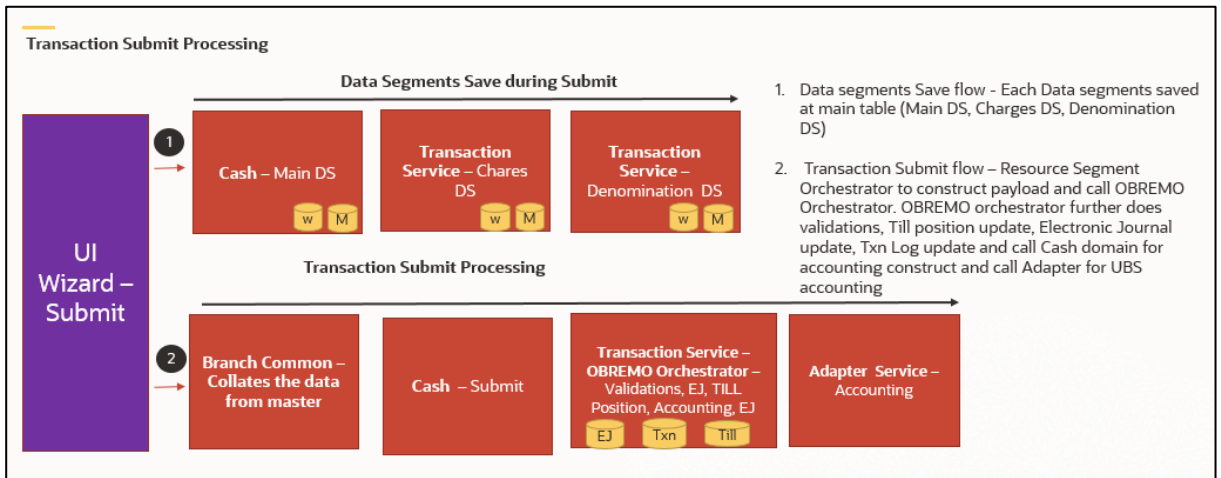


Figure 32: Cash Deposit High Level Flow - 2



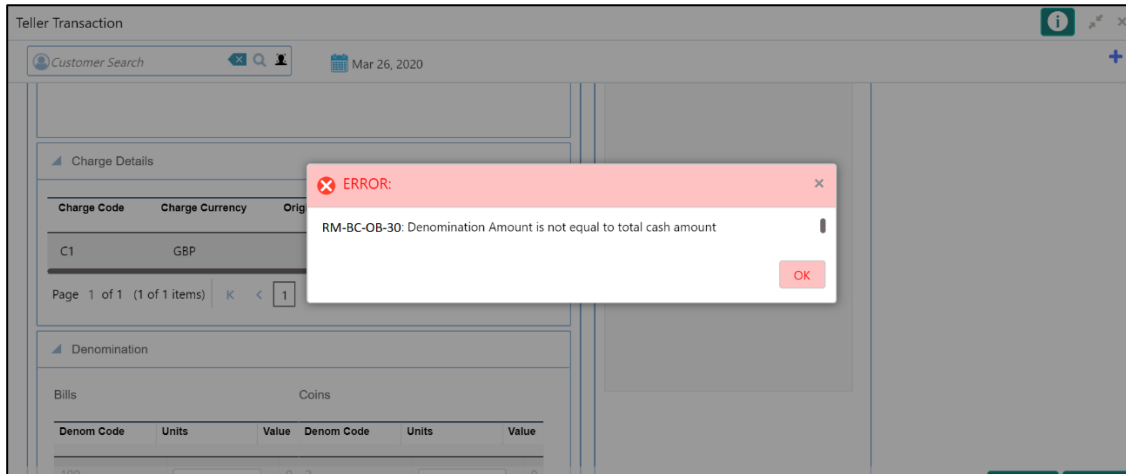
4.2.1 First Level Issues

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

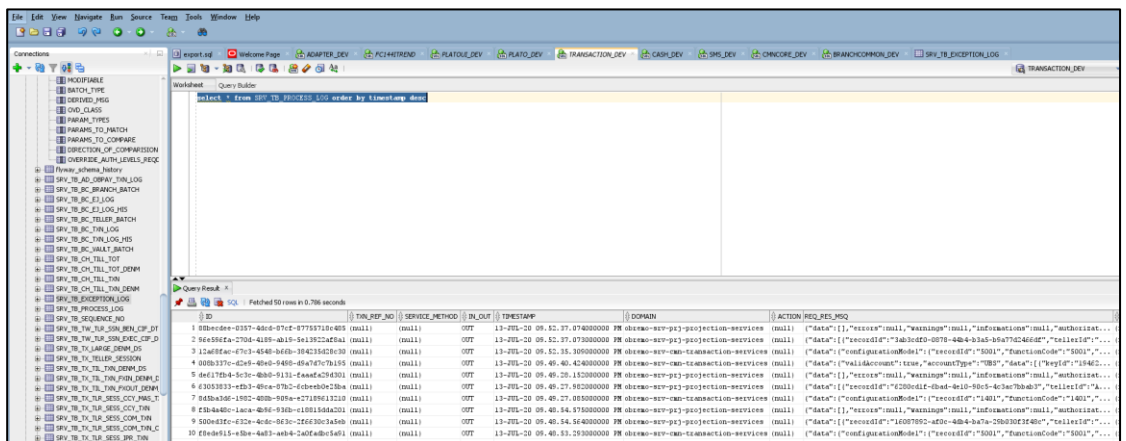


4.2.1.2 Null pointer or branch common exception error

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.

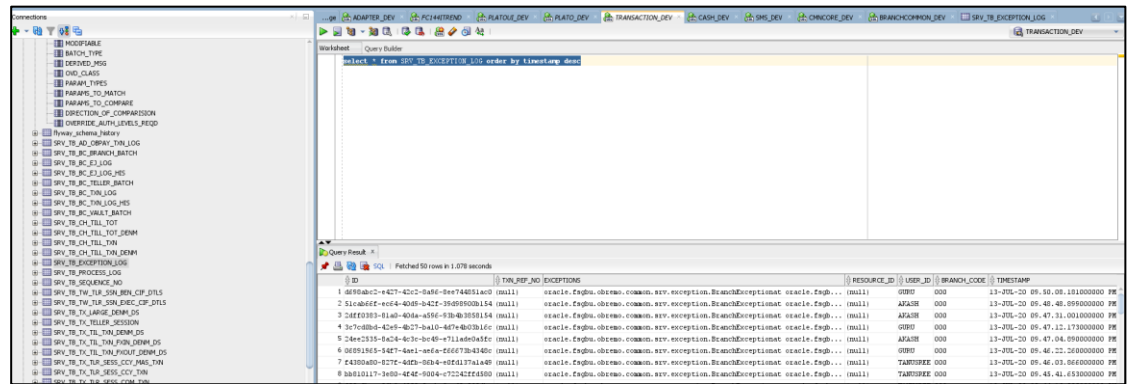
Query: `select * from SRV_TB_PROCESS_LOG order by timestamp desc`

Figure 34: TB Process Log



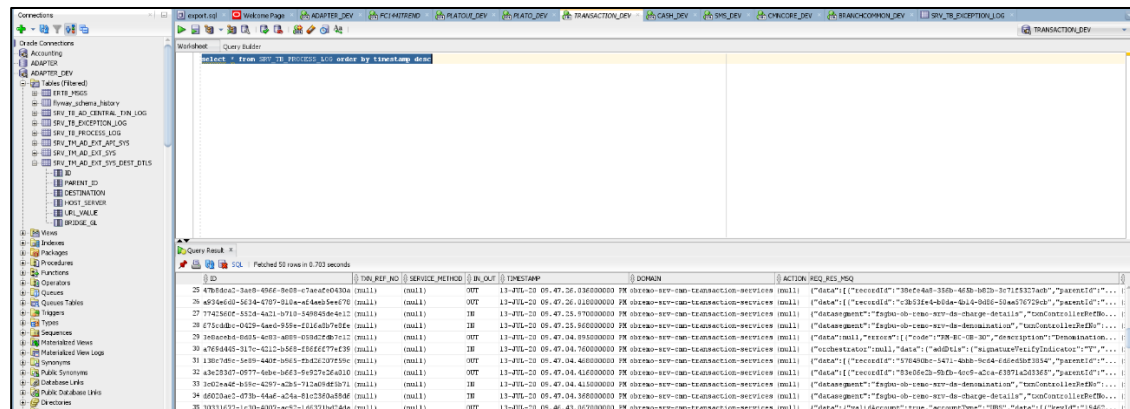
Query: `select * from SRV_TB_EXCEPTION_LOG order by timestamp desc`

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.

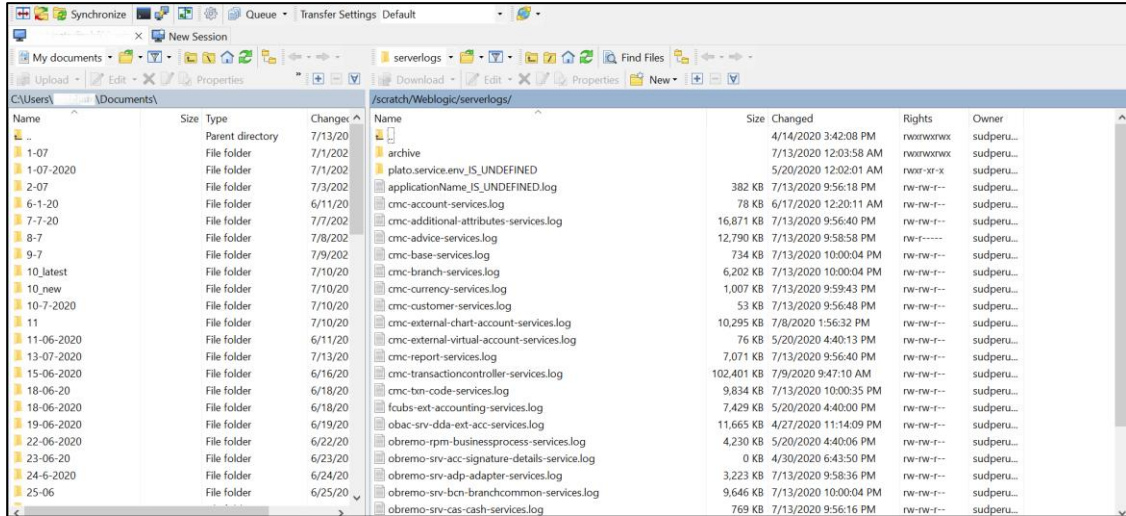
Figure 36: Process Log Responses



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`.

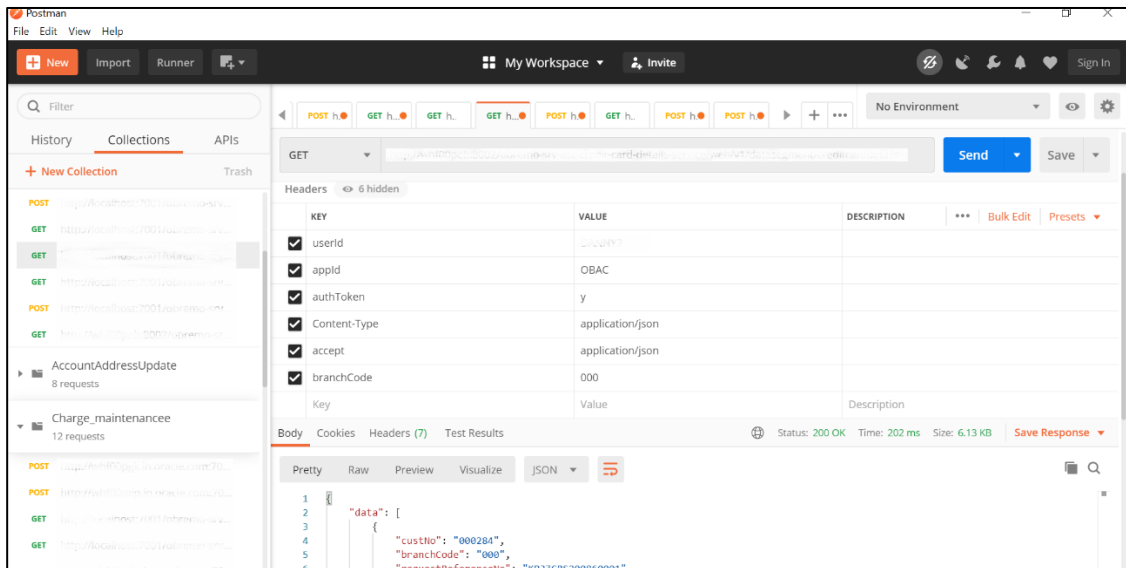
Figure 37: Exception Error Log



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

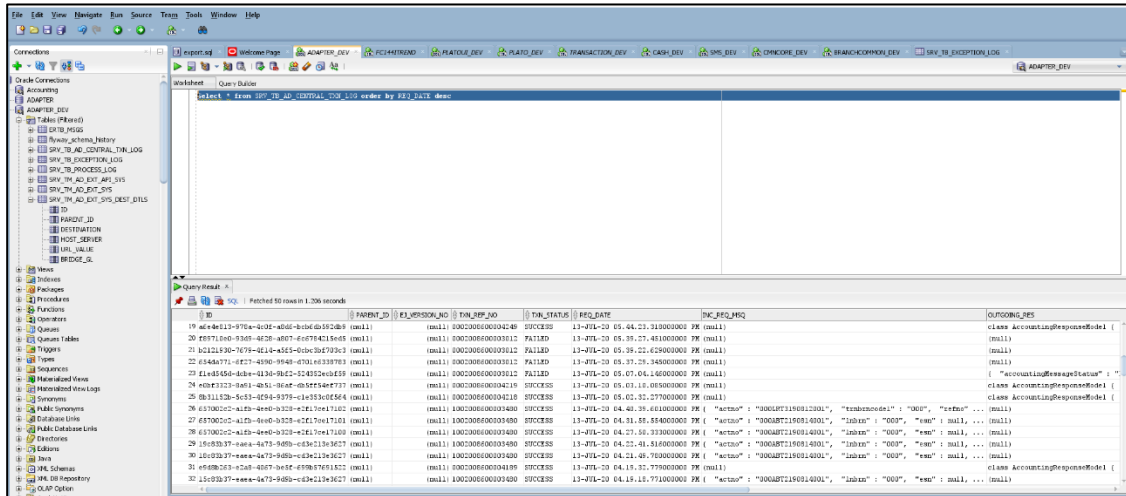


4.2.1.5 Call is failing in Adapter

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 entries of Oracle Banking Microservices Architecture
- 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 of 'Mar 26, 2020'. The main area is divided into a form for a 'Cash Deposit' and a customer selection area. The form includes fields for 'Account Number', 'Transaction Amount', 'Exchange Rate', 'Account Amount', 'Total Charge Amount', and 'Narrative'. The 'Narrative' field is filled with 'Cash Deposit'. To the right, a customer selection area shows 'No Customer Selected'. Further right, there are three informational panels: 'Current Till Position' showing '\$254,100.00', 'Alerts' showing 'No record to display', and 'Frequent Customer Operations'. At the bottom right, there are 'Submit' and 'Cancel' buttons.

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-aldb-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 table is as follows:

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

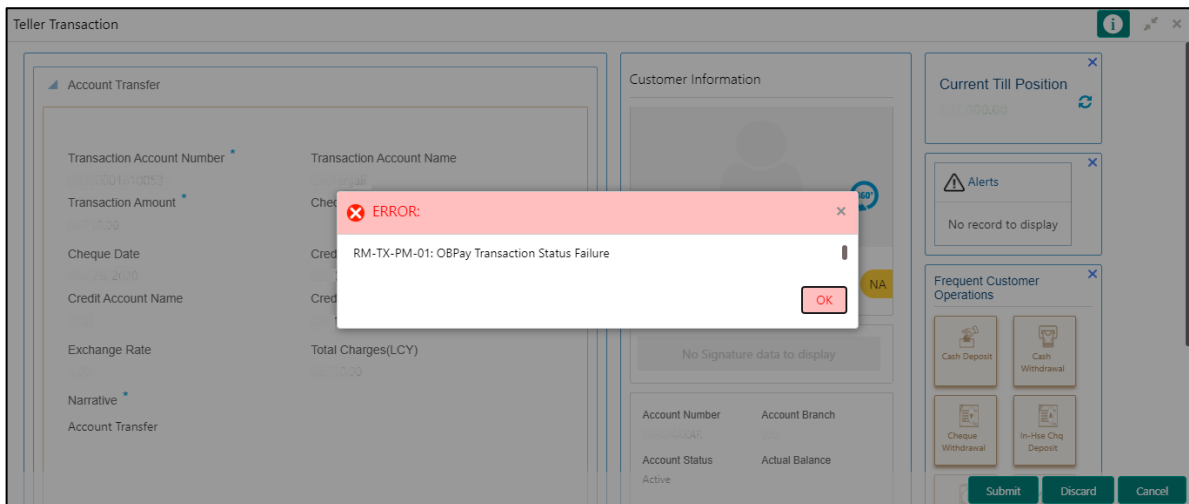
The screenshot shows the Oracle Query Builder interface. The query entered is: `select * from ERTB_MSGS where err_code='RM-TX-PM-01';`. The results table is as follows:

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 Error RM-TX-PM-01

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

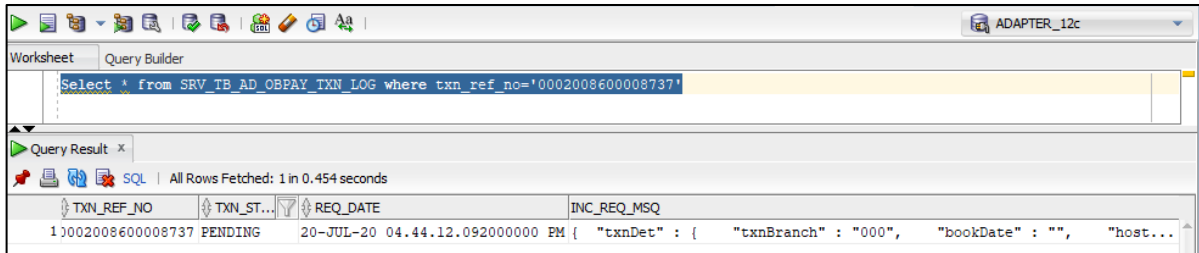
Figure 47: RM-TX-PM-01 Error



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

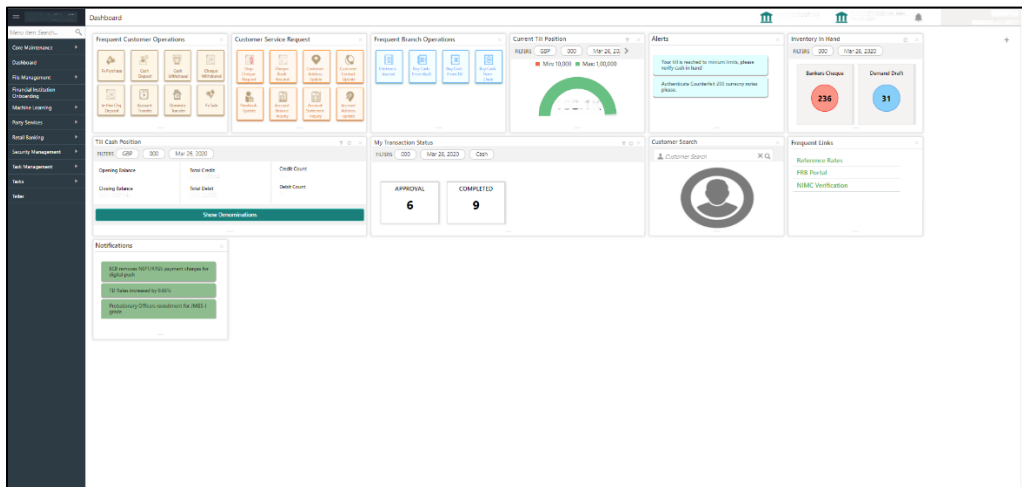
Header	Value
userId	ADMINUSER
branchCode	000
appld	BIZPRC
authToken	Y
Content-Type	application/json
Accept	application/json
Method	GET

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.

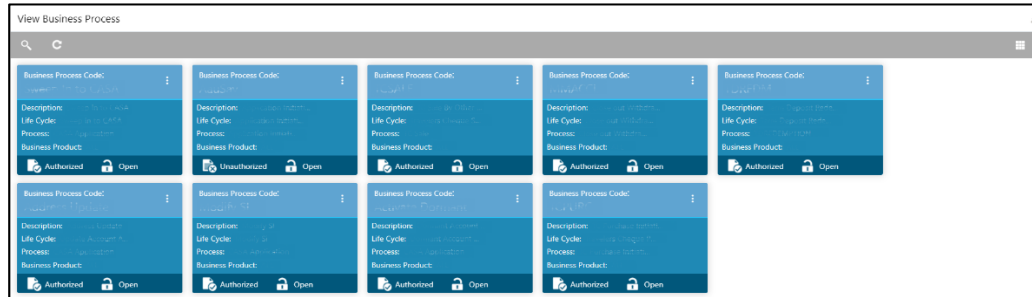
Figure 49: Home Screen



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 FLEXCUBE Universal Banking 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*

4.8 EOD Configuration

You need to create the EOD workflow and related terminologies for the EOD function to work. It is assumed that the set-up and configuration of **plato-batch-server** and **plato-orchestration** services are completed.

Topics:

- [Create EOD Workflow](#)
- [Configure EOD Batch](#)
- [Run EOD Batch](#)

4.8.1 Create EOD Workflow

You can create the EOD workflow through the **Workflow Maintenance** screen.

Prerequisites:

Log in to the application homepage. For information on how to log in, refer to the *Getting Started User Guide*.

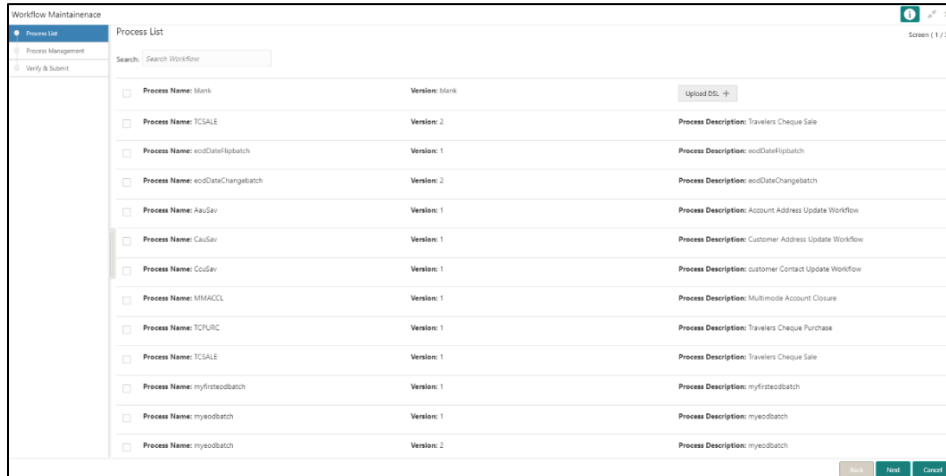
To create the EOD workflow:

1. Create a JSON with the batch job definition. (*eodWorkflow.json* is the JSON used for date change).

2. Upload a sample batch script as follows:
 - a. On the Homepage, click **Tasks**. Under **Tasks**, click **Business Process Maintenance** to import, create or modify batch process definition.

→ The **Workflow Maintenance** screen is displayed.

Figure 52: Workflow Maintenance



- b. Click **Upload DSL +**.
- c. Choose file *eodDateFlipbatch.json* from the local folder.
- d. Click **Next**.

NOTE: If required, you can also click **Create Stage** to create a new stage.

- e. Click **Create Process** to create the process and close the screen.

4.8.2 Configure EOD Batch

You can configure the EOD batch through the **Configure EOD** screen.

Prerequisites:

Log in to the application homepage. For information on how to log in, refer to the *Getting Started User Guide*.

To configure the EOD batch:

1. On the Homepage, click **Core Maintenance**. Under **Core Maintenance**, click **Branch EOD**, and then select **Configure EOD**.

→ The **Configure EOD** screen is displayed.

Figure 53: Configure EOD

The screenshot shows a web interface titled "Configure EOD". It features three input fields at the top: "Branch Code *" (with a search icon), "Description", and "Workflow Name *" (with a search icon). Below these fields is a large empty area. At the bottom right, there are two buttons: "Save" and "Cancel".

2. On the **Configure EOD** screen, specify the fields. For more information on fields, refer to the field description table.

NOTE: The fields, which are marked with an asterisk, are mandatory.

Table 5: Configure EOD - Field Description

Field	Description
Branch Code	Select branch code to link with the batch process definition.
Description	Displays the description of the selected branch code.

Field	Description
Workflow Name	<p>Specify the workflow name (<i>eodDateFlipbatch</i>) as mentioned in the first line of <i>eodDateFlipbatch.json</i>.</p> <p>NOTE: The workflow name should be the same as the value for the <i>name</i> tag in the JSON file. A sample workflow name from a JSON file is shown in the below figure.</p>

Figure 54: Sample Workflow Name

```

{
  "name": "eodDateFlipbatch",
  "description": "This is my first EOD batch",
  "tasks": [
    {
      "name": "EOD.DATEFLIP",
      "taskReferenceName": "EOD.DATEFLIP",
      "inputParameters": {
        "http_request": {
          "connectionTimeout": "0",
          "readTimeout": "0",
          "vipAddress": "CMC-BRANCH-SERVICES",
          "uri": "/cmc-branch-services/batch/flipdate?eodBranch=${workflow.input.branchCode}",
          "method": "POST",
          "headers": {

```

3. Save and authorize the record.

4.8.3 Run EOD Batch

You can run the batch for a branch through the **Invoke EOD** screen.

Prerequisites:

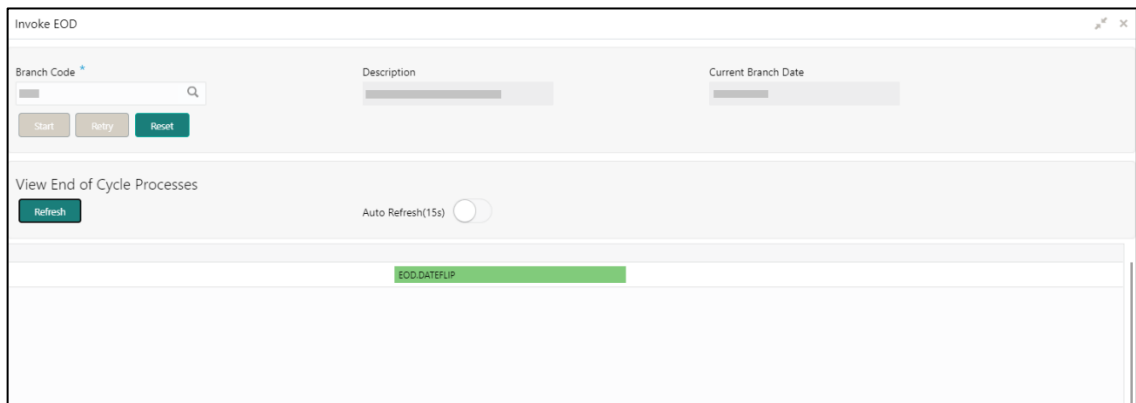
Log in to the application homepage. For information on how to log in, refer to the *Getting Started User Guide*.

To run the EOD batch:

1. On the Homepage, click **Core Maintenance**. Under **Core Maintenance**, click **Branch EOD**, and then select **Invoke EOD**.

→ The **Invoke EOD** screen is displayed.

Figure 55: Invoke EOD



2. On the **Invoke EOD** screen, click the search icon and select the **Branch Code**. For more information on fields, refer to the *Oracle Banking Common Core User Guide*.

NOTE: The fields, which are marked with an asterisk, are mandatory.

3. Click **Start** to start end of day batch.
4. Click **Refresh** to view the current status of the batch.

4.9 Troubleshooting Projection Schema Failure

You can troubleshoot the failure of the projection service by updating the flyway scripts in the database. The projection service war may fail while deployment with the following error message:

```
org.flywaydb.core.api.FlywayException: Validate failed: Migration checksum mismatch
for migration version 507.108.5.1.0.14.507108014.1.0 -> Applied to database :
107501546 -> Resolved locally : -643401112 Detected failed migration to version
101.32.7.3.0.1.00101001001.3.1 (ERTB MSGS)
:org.flywaydb.core.api.FlywayException:Validate failed: Migration checksum mismatch
for migration version 507.108.5.1.0.14.507108014.1.0 -> Applied to database :
107501546 -> Resolved locally : -643401112 Detected failed migration to version
101.32.7.3.0.1.00101001001.3.1 (ERTB MSGS)
```

To resolve this error, perform the following steps:

1. Connect to the projection schema in the database.
2. Run the following script in the projection schema:

```
update "flyway_schema_history" set "checksum" = '-643401112' where "script" =
'V507_108_5.1.0_14_507108014_1_0__ERTB_MSGS.sql';
delete from "flyway_schema_history" where "success" = 0;
ALTER TABLE ERTB_MSGS MODIFY ERR_CODE VARCHAR2(15);
```

NOTE: The value of the checksum in this script should match with the value in the error message.

5 Error Codes

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

Table 6: 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 DDA system	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	Transaction status is pending, waiting for the notification from payment system	E
RM-TX-PM-03	Failed in payment system	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 7: 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
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
- Loan Service User Guide
- Deposit Services User Guide