Troubleshooting Guide

Oracle Banking Origination

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Troubleshooting Guide

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1 Preface

1.1 Introduction

This guide provides guidance to users for the issues within the application. It describes various methods to figure out the error and then troubleshoot it.

1.2 Audience

This guide is intended for the software developers and software testers.

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 guide is organized into the following topics. The topic 1 to 3 are generic and applicable for Oracle Banking Microservice Architecture platform wide troubleshooting and topic 4 to 7 are specific to Oracle Banking Origination product.

Торіс	Description
Preface	This topic provides the information about this guide and intended audience. It also lists the various chapters covered in this User Manual.
Troubleshooting Technical Flows	This topic describes the platform wide troubleshooting of technical flows. This includes UI side checking, Service side logs, tracing using zipkin, debugging using ELK stack and some environment issues of weblogic
Health Checks	This topic describes the health check measures and observability required.
Troubleshooting Functional Workflows	This topic describes Oracle Banking Origination specific troubleshooting of flows and specific data stores that can be checked for issues.
Business Error Codes	This topic provides the list of error codes expected out of Oracle Banking Origination.

Table 1: List of Topics



2 Troubleshooting Technical Flows

This chapter 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 Logs Kafka issues
- 2.7 Troubleshooting Environmental Issues

2.1 Where is the problem

Troubleshooting the problem in distributed system could be bit 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.

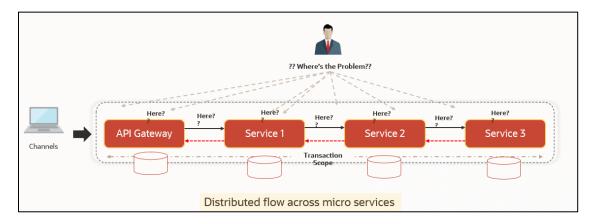


Figure 1: Distributed Flow across Micro Services



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. Usually RED color indicates non 2xx HTTP response.

Figure 2: Call Responses

🕞 🖬 Elements Console Sources Network	Application Pe	formance Lightho	use Memory Security		◎ 6	ļ ¢
🔵 🛇 🍸 🔍 🗹 Preserve log 🗌 Disable cache	No throttling 🔻	<u>*</u> <u>*</u>				
Filter 🗌 Hide data URLs 📶 XH	IR JS CSS Img Me	dia Font Doc WS	Manifest Other 🗌 Has block	ed cookies 🗌 Blocke	ed Requests	
Use large request rows			Group by frame			
Show overview			apture screenshots			
Name	Status	Туре	Initiator	Size	T Wate	erfall
tiles?userId=OBLM02&branchCode=LMB	200	xhr	jquery-3.5.1.min.js:2		3.1 kB 1	
currencyliability	200	preflight	Preflight 🕢		0 B 4	
topcustomersbalances	200	preflight	Preflight 🕢		0 B 4	
topcustomersweeps	200	preflight	Preflight 🕢		0 B 5	
crossborder	200	preflight	Preflight 🕢		0 B 5	
events?eventType=P	200	preflight	Preflight 🕢		0 B 5	
events?eventType=E	200	preflight	Preflight 🚱		0 B 4	
events?eventType=A	200	preflight	Preflight 🕢		0 B 6	
currencyliability	200	xhr	jquery-3.5.1.min.js:2		1.0 kB 3	
topcustomersbalances	200	xhr	jquery-3.5.1.min.js:2		1.8 kB 5	
topcustomersweeps	200	xhr	jquery-3.5.1.min.js:2		1.7 kB 4	
crossborder	200	xhr	jquery-3.5.1.min.js:2		542 B 6	
events?eventType=P	200	xhr	jquery-3.5.1.min.js:2		20.1 kB 8	
events?eventType=E	200	xhr	jquery-3.5.1.min.js:2		236 kB 2	
events?eventType=A	200	xhr	jquery-3.5.1.min.js:2		2.0 MB 7	

Figure 3: Non 2xx response

Branch Parameters						,,* ×
Mod Number 2 Compare						
Done By OBLM02 Done On 11/30/2018	S Error		×			
Record Status O	Maker cannot authorize		1			
Once Auth Y View						
					-	
					Cancel	Approve
View Branch Parameters 🦨 Branch Parameters						
🕞 🖬 Elements Console Sources Network Application Pe	rformance Lighthouse	Memory Security		8	4 4	: ×
🜻 🛇 🍞 🔍 🗹 Preserve log 🗌 Disable cache No throttling 🔻	± ±					•
Filter 🗌 Hide data URLs 📶 XHR JS CSS Img Me	dia Font Doc WS Man	ifest Other 🗌 Has blo	ocked cookies 🗌 Blocked Requests			
Use large request rows		Group by t	rame			
Show overview		Capture sc	reenshots			
Name	Status	Туре	Initiator	Size	T Water	fall 🔺
approve	200	preflight	Preflight 🚱	0 B	9 📕	
approve	400	xhr	jquery-3.5.1.min.js:2	924 B	9	
o error.png	200	png	fsgbu-ob-cmn-ct-alert.css	(disk cache)	1	



Figure 4: Details of Non 2xx Response

Branch Parameters			$_{\mu}^{ac}$ ×
Mod Number 2 Compar			
Done By OBLM02 Done On 11/30/2018	🔁 Error 🗙		
View Branch Parameters 🥜 Branch Parameters 🛹	Maker cannot authorize		
🕞 💼 Elements Console Sources Ne	twork Application Performance Lighthouse Memory Security	\$ 3	×
🔴 🛇 🝸 🔍 🗹 Preserve log 🗌 Disable d	ache No throttling 🔻 🛓		•
Filter 🗌 Hide data URLs 🗛	XHR JS CSS Img Media Font Doc WS Manifest Other 🗌 Has blocked cookies 🗌 Blocked Requests		
Use large request rows	Group by frame		
Show overview	Capture screenshots		
Name	× Headers Preview Response Initiator Timing		
approve	▼ General		^
error.png	Request URL: http://whf00bjo.in.oracle.com:7007/api-gateway/d <mark>bls-maintenance-services</mark> /branch/d24a66cd-93c5-4394-bb2a-6465385adfdb/app Request Method: PATCH Status Code: © 400 Bad Request Remote Address: 10.40.138.30:7007 Referrer Policy: strict-origin-when-cross-origin	rove	
3 ranuasts 024 8 transfarrad 5.7 kB rasources	▼ Response Headers View source Access-Control-Allow-Credentials: true Access-Control-Allow-Headers Access-Control-Allow-Headers Access-Control-Allow-Methods: GET, POST, PUT, DELETE, OPTIONS, HEAD, PATCH		

Branch Parameters		
Mod Number 2 Compare		
Done By OBLM02 Done On 11/30/2018	😮 Error	×
View Branch Parameters 🖉 Branch Parameters 🦨	Maker cannot authorize	1
🕞 🖬 🛛 Elements Console Sources Net	work Application Performance Lighthouse Memory	Security
🗕 🛇 🝸 🔍 🗹 Preserve log 🗌 Disable ci	iche No throttling 🔻 🛓 🛓	
Filter Hide data URLs Al	XHR JS CSS Img Media Font Doc WS Manifest Other	Has blocked cookies 🗌 Blocked Requests
Use large request rows	🗆 G	roup by frame
□ Show overview		apture screenshots
Name	× Headers Preview Response Initiator Timing	
approve approve error.png	▼codes: [,]	fdb", status: "FAILURE", codes: [,_], requestId: null,_} verride: false, error: true, overrideAuthLevelsReqd: null,_}
3 requests 924 B transferred 5.7 kB resources	httpStatusCode: null	

4. 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: You can also use tools such as **fiddler** and **wireshark** to get the browser to API gateway web traffic. This would help 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, it is wise to ensure the root level is configured as ERROR so that log files doesn't get overwhelmed

Refer Weblogic documentation to know the path where these files are generated. In on-premises cases, these log files can be zipped and send for remote troubleshooting purposes.



2.4 Troubleshooting using Zipkin Traces

2.4.1 Setting Zipkin Server

Refer below document for installation document for Zipkin installation

https://docs.oracle.com/cd/F41347_01/PDF/Installation_Guide/ANNEXURE-2.pdf

2.4.2 Login to Zipkin

The basic layout of Zipkin looks as follows

Figure 6: Layout of Zipkin

zipkin	Span Name	✓ all	~	15 minutes	
Annotation Query		Duration (µs) >		Sort	
For example: http.path=	/foo/bar/ and cluster=foo and cac	he.miss Ex: 100ms or	r 5s 10	Longest First	*
Please select the criteria f	or your trace lookup.				

We can find the traces of required API calls and services using the above search options given in the user interface. The search options given in the user interface are self-explanatory and there is another UI option (Try Lens UI). It's given a different user interface with the same functionality.

Figure 7: List of Traces

Service Name		Span Name		Remote Service Name		Lookback		
zipkin	~	all	\sim	all	~	1 hour		¥
Annotation Query				Duration (μ s) > =	Limit		Sort	
For example: http.path=/foo/b	ar/ and	cluster=foo and cache.miss		Ex: 100ms or 5s	10		Longest First	*
Find Traces Showing: 4 of 4 Services: zipkin							ozu	N 🋓
2.163s 5 spans								
zipkin 100% zipkin x5 2.163s							18 minut	tes ago
1.449s 4 spans								
zipkin 100%								
zipkin x4 1.449s							22 minut	tes ago
1.430s 4 spans zipkin 100%								



The list of the traces can be seen as the above screen. I made some error API calls 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.

Opening an individual trace shows the below-shown screen.

Figure 8: Individual Trace

Duration: 2.1	63s Services: 1	Depth: 3	Total Spar	ns: 🖪		JSON 🚣
Expand All	Collapse All					
zipkin x4						
2іркії х4						
Services		432.639ms	865.278ms	1.298s	1.731s	2.
🖻 zipkin	-2.163s : http:/api1					
zipkin	- 1.001s : api1		. 0			
😑 zipkin				1.068s : http://api2 -		
zipkin				1.001s : api2		

The above-shown image describes the time taken for each block. As I created 2 custom spans inside 2 service calls, we can find a total of 4 blocks. The time taken for an individual block can be seen above. Clicking an individual block shows the following details.

	Date Time	Relative Time	Annotation	Address		Searc
	9/10/2019, 4:11:23 PM		Server Start	10.184.89.16:8080 (zipkin)		
	9/10/2019, 4:11:25 PM	2.163s	Server Finish	10.184.89.16:8080 (zipkin)		
Duration: 2.163s	Кеу	Value				ISON
Expand All Colla	pse http.host	localho	st			
	http.method	GET				
zipkin x4	http.path	/api1				
Services	http.status_code	200			731s	
	.2.16 http.url	http://lo	ocalhost:8080/api1			
	¹ mvc.controller.class	Control	ler		-	
	mvc.controller.method	api1				
_	spring.instance_id	eswarpe	erabathini.in.oracle.c	com:Zipkin		
	Show IDs					
	traceld	9d63642d72a	b6f9f			
	spanld	9d63642d72a	b6f9f			

Figure 9: Details of Individual Block

The details of the specific span block are shown above and the logging events can also be seen in the Zipkin UI as small circular blocks. An example of an error log is shown below.



Figure 10: Sample Error Log

Duration: 1.02	65 Services: 1	Depth: 2	Total Span	3		JSON 🚣
Expand All	Collapse All					
zipkin x3						
ervices		205.134ms	410.267ms	615.401ms	820.534ms	1
zipkin	-1.026s : http:/api1					
zipkin	- 1.001s : api1					
zipkin						

Clicking on the error portion gives a clear detail about the error and where the error has arisen. An example is shown below.

Figure 11: Details of Error

Date Time		Relative Time	Annotation	Address
9/11/2019, 6:09:	:01 PM		Server Start	10.184.89.16:8080 (zipkin)
9/11/2019, 6:09:	02 PM	1.026s	Server Finish	10.184.89.16:8080 (zipkin)
Key	Value			
error		est processing failed rErrorException: 500	2	s org.springframework.web.client.Http
http.host	local	ost		
1.026 http.method	GET			
http.path	/api1			
http.status_code	e 500			
http.url	http:/	/localhost:8080/api	1	
mvc.controller.c	lass Basic	ErrorController		
mvc.controller.m	nethod error	ltml		
spring.instance_		perabathini.in.oracle		

If the Lens UI is used in Zipkin, the above screenshots are not applicable but are relatable to the Lens UI as well.

Traces of the application can be found using Traceld, which can be found in the debug logs of the deployment when spring-cloud-sleuth is included in the dependencies (Included in spring-cloud-starter-zipkin dependency). Clicking the dependency tab gives the dependency graph info between micro-services. An example dependency graph is shown below.



Figure 12: Sample Dependency Graph

Zipkin 🛛	nvestigate system behav	ior Find a trace	Dependencies	
Start time	2018-02-19	13:30	End time 2018-02-20 13:39 Analyze Depen	dencies
frontend		todos-api	log-message-processor	
		auth-api	users-api	

2.4.3 Zipkin Issues

2.4.3.1 Application service 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

		Span Name	Lookback		
oblm-maintenance-services	^	all	✓ 1 hour		
	Q		Duration (µs) >=	Limit	Sort
obic-interest-batch-services	^	o and cache.miss	Ex: 100ms or 5s	10	Longest First
oblm-batch-services					
oblm-cash-concentration-services	- 6				
oblm-dashboard-services	- 1				JSON 🕹
oblm-integration-services	_				
✓ oblm-maintenance-services					
V ODITI-Maintenance-services					

Service Name	Span Name	Lookback		
oblm-maintenance-services V	all	1 hour		~
Annotation Query	ا مر nttp://opim-maintenance-services/account	Duration (µs) >=	Limit	Sort
For example: http.path=/foo/bar/ and cluster=foo	http:/oblm-maintenance- services/account/updatebala	Ex: 100ms or 5s	10	Longest First
Find Traces	http:/oblm-maintenance- services/application			L NOST
Services: oblm-maintenance-services	http:/oblm-maintenance-services/branch			
	http:/oblm-maintenance- services/customer			
58.997ms 9 spans				
blm-maintenance-services 37%	http:/oblm-maintenance-			



2. If the required application is not listed in Zipkins, check the application.yml file for zipkin base URL configuration. The shipped application.yml should have the zipkin entry.

Figure 14: Application.yml File

📧 logback.xml 🛛 🕅 application.yml 😫
1# Copyright (c) 2016, Oracle. All rights reserved.
2 spring:
3 application:
4 name: oblm-maintenance-services
5 main:
6 allow-bean-definition-overriding: true
7 autoconfigure:
8exclude: org_springframework.boot.autoconfigure.jdbc.DataSourceAutoConfiguration, org.springframework
9 zipkin:
<pre>10 baseUrl: \${plato.services.zipkin.url:http://localhost:9411}</pre>
11 service:
<pre>12 name: \${spring.application.name}</pre>
13 sender:
14 type: \${plato.services.zipkin.sender.type:web}
15 sleuth:
16 sampler:
<pre>17 percentage: \${plato.services.sleuth.sampler.percentage:0.1} 18</pre>
19 eureka:
20 instance:
21 prefer-ip-address: true
<pre>22 securePortEnabled: \${isSslEnabled:false}</pre>
23 client:
24 registerWithEureka: true
25 fetchRegistry: true
26# preferSameZone: true

NOTE: 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.

Compile group: 'org.springframework.cloud', name: 'spring-cloud-sleuth-zipkin', version: '2.1.2.RELEASE'.

Figure 15: Branch Common Services

Service Name	Span Name	Lookback		
oblm-maintenance-services	∽ all	 ✓ 1 hour 		
Annotation Query		Duration (µs) >=	Limit	Sort
For example: http.path=/foo/bar/ and	cluster=foo and cache.miss	Ex: 100ms or 5s	10	Longest First
Find Traces				
Showing: 10 of 10 Services: oblm-maintenance-services				🛓 NOSL
Services: oblm-maintenance-services 58.997ms 9 spans				JSUN &
Services: obim-maintenance-services 58.997ms 9 spans bim-maintenance-services 37%	nce-services x2 97.974ms ami-core-services x2 5	\$1.652ms		JSON S
Services: (oblim:maintenance-services) 58.997ms 9 spans blm-maintenance-services 37% (m-batch-services x5 258 997ms) oblim:maintena	nce-services x2 97,874ms) tems-core-services x2 5	51.652ms		
Services' altim-maintenance-services 58.997ms 9 spans bim-maintenance-services 37% imbath-services 525.677ms (coloremaintena 56.606ms 9 spans	nce-dervices x2 97.874ms) tami-core-dervices x2 5	31.652mg		
Services' ethim-maintenance-services 58.997ms 9 spans blm-maintenance-services 37% imbathstervices 323.057ms ethims initenan 56.606ms 9 spans blm-maintenance-services 37%				44 minute
Services' ethim-maintenance-services 58.997ms 9 spans blm-maintenance-services 37% imbathstervices 323.057ms ethims initenan 56.606ms 9 spans blm-maintenance-services 37%	ince-services x2 97.974ms smit-core-services x2 9 ince-services x2 97.367ms smit-core-services x2 4			
Services' ethim-maintenance-services 58.997ms 9 spans blm-maintenance-services 37% imbathstervices 323.057ms ethims initenan 56.606ms 9 spans blm-maintenance-services 37%				44 minute



Figure 16: Branch Common Services Trace

		oblm-maintena services/branch		s.http:/ob	lm-maintenance-	×	
Duration: 683.981ms Expand All Colla	Services: 🖬	Services: oblm-maintenance-services,oblm-sweep-services					
cmc-branch-services x2	oblm-batch-services x2 oblm-integration-services x4 ob	Date Time	Relative Time	Annotation	Address		
		5/4/2021, 8:15:00 PM	258ms	Client Start	10.40.74.62:7203 (oblm-sweep-services)		
Services	136.79	5/4/2021, 8:15:00 PM	259ms	Server Start	10.40.74.62:7205 (oblm-maintenance-services)		547.185ms
	683.981ms : process-exception-log	5/4/2021, 8:15:00 PM	302.817ms	Server Finish	10.40.74.62:7205 (oblm-maintenance-services)		
oblm-integration-services	 678ms : http:/oblm-integration-services/transactionlog/pro 45ms : http:/sms-ci 	5/4/2021, 8:15:00 PM	308ms	Client Finish	10.40.74.62:7203 (oblm-sweep-services)		
Doblim-sweep-services		Кеу	Value				
oblm-maintenance-service		http.host	oblm-maintena	nce-services			
oblm-structure-services sms-core-services		http.method	GET				
cmc-branch-services		http.path	/oblm-maintena	ince-services/bi	anch	http:/cmc-b	ranch-services/systemdates
sms-core-services		http.url	http://oblm-mai e=LMB	intenance-servi	es/oblm-maintenance-services/branch?branchC	od	43ms : http:/sms-core-service/rbac
		spring.instance_id	whf00gld.in.ora	:le.com:oblm-sv	veep-services:7203		
		mvc.controller.class	LmmTmBranchP	arametersApiCo	ntroller		
		mvc.controller.method	getAll				
		spring.instance_id	whf00gld.in.ora	:le.com:oblm-m	aintenance-services:7205		
		Show IDs					

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:

tanc	0	00444	*		10000//
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, verify that the port 9411 is available to start Zipkin-server.jar file. Also check if the zipkin url is provided for the services in the PROPERTIES table.

SELECT * FROM PROPERTIES WHERE KEY LIKE '%zipkin%'

Figure 17: ELK Setup

	select	from Properties where key like '%z	ipkin%'			
-						
-	v Result	x				
Quer ;	y resource					
-	-					
	R 1	SQL All Rows Fetched: 30 in 0.674 seconds				
	🔂 🗔	SQL All Rows Fetched: 30 in 0.674 seconds	PROFILE	1 LABEL		♦ VALUE
1	¥.		∯ PROFILE jdbc	∲LABEL jdbc	∯KEY plato.services.zipkin.url	V
1 2	8053	APPLICATION	V	v	V	http://localhost:9411
1 2 3	8053 9023	<pre>APPLICATION oblm-integration-services-bib</pre>	jdbc	jdbc	plato.services.zipkin.url	http://localhost:9411 http://localhost:9411



2.5 Troubleshooting Logs using ELK stack

2.5.1 Setting up ELK

Download the Elastic search from https://www.elastic.co/downloads/elasticsearch

Kibana download https://www.elastic.co/downloads/kibana

Logstash download https://www.elastic.co/downloads/logstash

Default port for Elastic search- 9200

Default port for Kibana- 5601

Step to run ELK:

Run the elasticsearch.sh file present inside /scratch/software/ELK/elasticsearch-6.5.1/bin

• Edit network.host to "localhost" and port if necessary. This should be enough for it to run.

• Start: nohup bin/elasticsearch &

Configure Kibana to point the running instance of elastic search in kibana.yml file as below.

Figure 18: Logstash Configuration

```
# 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.
# 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.newriteBasePath' 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.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
```

Configuring Logstash consists of 3 steps:

- 1. **Input-** This configuration is required to provide the log file location for the Logstash to read from.
- 2. **Filter** Filters in logstash is basically used to control or format the read operation(Line by line or Bulk read)

 Output- In this section we provide the running elastic search instance to send the data for persisting.

```
Figure 19: Kibana
```

```
logstash.conf
#Point to the application logs
input {
 beats {
   port => 5044
 }
3
#Provide the parsing logic to transform logs into JSON
filter {
# Adding @metadata needed for index sharding to Filebeat logs
 mutate {
   copy => {
     "[fields][app_name]" => "[@metadata][app_name]"
     "[fields][env]" => "[@metadata][envt]"
   }
  }
 #If log line contains tab character followed by 'at' then we will tag that entry as stacktrace
 if [message] =~ "\tat" {
    grok {
     match => ["message", "^(\tat)"]
     add_tag => ["stacktrace"]
    }
 }
```

```
#Grokking Spring Boot's default log format
  grok {
   match => [ "message", "%{TIMESTAMP_IS08601:timestamp}\s+%{LOGLEVEL:severity}\s+\[%{DATA:service},%{DATA:trace},%{DATA:span}
  }
  \ensuremath{\texttt{#Parsing}} out timestamps which are in timestamp field thanks to previous grok section
  date {
    match => [ "timestamp" , "yyyy-MM-dd HH:mm:ss.SSS" ]
  fingerprint {
    source => "message"
    target => "[@metadata][fingerprint]"
    method => "MD5"
    key => "test"
 }
 ruby {
   code => "event.set('[@metadata][prefix]', event.get('@timestamp').to_i.to_s(16))"
 }
}
#Ingest logs to Elasticsearch
output {
 elasticsearch {
    hosts => ["localhost:9200"]
    index => "%{[@metadata][app_name]}-%{[@metadata][envt]}-%{+YYYY.MM.dd}"
    document_id => "%{[@metadata][prefix]}%{[@metadata][fingerprint]}"
}
  stdout { codec => rubydebug }
```



2.5.2 Accessing Kibana

- Goto path ../kibana-7.8.1-linux-x86_64/config/kibana.yml
- Edit server.host: "0.0.0.0" for access outside host and server.port: <any port, defaults to 5601>
- Validate elasticsearch properties it defaults to localhost:9200
- Goto : http://host:port you should be able to see the Kibana console UI. Kibana needs elasticsearch to be UP as it creates indexes & fetches logs from it.
- Start: nohup bin/kibana &

Figure 20: Accessing Kibana

👖 Apps M Gmail 🧿 undefin	ed 🞽 OBLM 14.3.0.0.4 Sc	Oracle Banking	Da 🞽 NLS Gu	uidelines (Rul	Process to use Bug	Slack fsqbu-oblm-	O User Man	ual »	=
E Discover								2000 I 1	
file* ~	9				.473.762 hits				
Q Search field names			May 6, 2021	00:00:00:00 - 1	Aay 6, 2021 @ 23:59:59.99	9 Auto 🗸			
 Filter by type 	4000000								
Selected fields	3000000								
@source	2000000								
Available fields	1000000								
t _id									
i _index	00:00	03:00	06:00	09:00	12:00	15:00	18:00	21:00	
.score					@timestamp per 30 minutes				
t _t)pe	Time -	_source							
@timestamp	> May 6, 2021 0 14:16:43.680	Stimestams May 6	2821 @ 14-16-43 688	log offset 4 13	585 log file path: /sc	ratch/oblm/request-logs/ob:	Im-sween-services Of	RDY92 MR 2821_84_20	9 100
t agent.ephemeral_id						aee77821.4626ca22aee77821.			
t agent.hostname		(self-tuning)'] o.f.	.o.s.lms.cache.Abst	ractTimerCache : In	side retrieveResponse in	put.type: log fields.app_	name: oblm fields.e	env: DEV ecs.versio	on: 1.
						st.name: fsgbu-mum-638 ho	-		
t agent.id		host architecture:	x86_64 host.os.ver	sion: 7.8 host.cs.	family: host.os.name: C	Pracle Linux Server host.o	s.kernel: 4.14.35-2	047.501.2.el7uek.x8	86_64
t agent.id									
t agentiname	> May 6, 2021 0 14:16:43.680		2021 0 14:16:43.680	ecs.version: 1.6	0 nessage: 2021-04-29 0	8:01:36.388 INFO [oblm-swee	ep-		
t agent.name t agent.type	> May 6, 2021 0 14:16:43.680	Øtimestamp: May 6,				8:01:36.388 INFO [oblm-swee 602] [LMB] 8233 [(sel1		.lms.cache.AbstractT	Timer
t agent.name t agent.type t agent.version	> May 6, 2821 0 14:16:43.680	Otimestamp: May 6, services,DEFAULTENTI	ITY,4626ca22aee7782	1,4626ca22aee77821,	true] [null] [null] [0803		f-tuning)'] o.f.o.s.		
t agent.name t agent.type t agent.version t ecs.version	> May 6, 2821 0 14:16:43.680	Otimestamp: May 6, services,DEFAULTENT] Retrieving [{}] from fields.app_name: ob	TY,4626ca22aee7782 cache.branchParam- lm fields.env: DEV	1,4626ca22aee77821, -LMB log.offset: 4 input.type: log	true] [null] [null] [0803 ,139,734 log.file.path: host.id: f034aa8640214668	<pre>K02] [LMB] 8233 [(self /scratch/oblm/request-logs 0a4370235346a5977 host.com</pre>	f-tuning)'] o.f.o.s. /oblm-sweep-service tainerized: false	es_OBDX02_LMB_2021-04 host.ip: 100.76.140.	.18
t agent.name t agent.type t agent.version	> May 6, 2821 ₽ 14:16:43.688	Otimestamp: May 6, services,DEFAULTENT] Retrieving [{}] from fields.app_name: ob	TY,4626ca22aee7782 cache.branchParam- lm fields.env: DEV	1,4626ca22aee77821, -LMB log.offset: 4 input.type: log	true] [null] [null] [0803 ,139,734 log.file.path: host.id: f034aa8640214668	K02] [LMB] 8233 [(selt /scratch/oblm/request-logs	f-tuning)'] o.f.o.s. /oblm-sweep-service tainerized: false	es_OBDX02_LMB_2021-04 host.ip: 100.76.140.	.18
t agent.name t agent.type t agent.version t ecs.version	 May 6, 2821 0 14:16:43.688 May 6, 2821 0 14:16:43.688 	Otimestamp: May 6, services,DEFAULTENTJ Retrieving [{}] from fields.app_name: ob host.mac: 82:80:17:	TY,4626ca22aee7782 m cache.branchParam im fields.env: DEV 80:ab:8c host.host	1,4626ca22aee77821, -LMB log.offset: 4 input.type: log name: fsgbu-mun-63	true] [null] [null] [OBD: .139,734 log.file.path: host.id: f034aa86402146c6 8 host.architecture: x86	<pre>K02] [LMB] 8233 [(self /scratch/oblm/request-logs 0a4370235346a5977 host.com</pre>	f-tuning)'] o.f.o.s. /oblm-sweep-service tainerized: false B 338 host.os.version	es_OBDX02_LMB_2021-04 host.ip: 100.76.140. 1: 7.8 host.os.famil	M-29. .18 ly:
agent.name agent.type agent.version c.s.version feds.app.name		Otimestamp: May 6, services,DEFAULTENTI Retrieving [{}] from fields.app_name: ob host.mac: 02:00:17: Otimestamp: May 6,	TTY,4626ca22aee77821 m cache.branchParam- im fields.env: DEV 80:ab:8c host.host 2021 0 14:16:43.680	1,4626ca22aee77821, -LMB log.offset: 4 input.type: log name: fsgbu-mun-63 0 host.containerize	true] [null] [null] [OBD 139,734 log.file.path: host.id: f634am86402146c6 8 host.architecture: x86 hd: false host.ip: 100.7	<pre>K02] [LMB] 8233 [(sel1 /scratch/oblm/request-logs ka4370235346a5977 host.com _64 host.name: fsgbu-mum-6</pre>	f-tuning)'] o.f.o.s /oblm-sweep-service tainerized: false H 338 host.os.version 17:00:ab:8c host.ho	es_OBDX02_LMB_2021-04 host.ip: 100.76.140. i: 7.8 host.os.famil estname: fsgbu-mum-63	M-29. .18 ly:
agent.name agent.type agent.type agent.version c.s.version f. leds.app.name f. felds.anv		Otimestamp: May 6, services, DEFAULTENT Retrieving {\} from fields.app_name: ob host.mac: 02:00:17: Otimestamp: May 6, host.architecture:	ITY,4626ca22aee7782 cache.branchParam im fields.env: DEV 00:ab:8c host.host 2021 0 14:16:43.680 x86_64 host.name:	1,4626ca22aee77821, -LMB log.offset: 4 input.type: log name: fsgbu-mun-63 host.containerize fsgbu-mun-638 host	true] [null] [null] [08D 139,734 log.file.path: host.id: f034aa86402146c6 8 host.architecture: x86. hd: false host.ip: 100.7 .os.kernel: 4.14.35-2047	<pre>K02] [LMB] 8233 [(self /scratch/oblm/request-logs ha4370235346a5977 host.com 64 host.name: fsgbu-mum-6 5.140.18 host.mac: 02:00:1</pre>	f-tuning)'] o.f.o.s /oblm-sweep-service tainerized: false 338 host.os.version 17:00:ab:8c host.ho os.platform: ol ho	es_OBDX02_LM8_2021-04 host.ip: 100.76.140 1: 7.8 host.os.famil estname: fsgbu-mum-6 est.os.version: 7.8	M-29. .18 ly:



2.6 Troubleshooting Logs Kafka issues

2.6.1 Setting up kafka

Install Kafka and Zookeeper which is shipped along with the OSDC Now first we need to start zookeeper and then kafka. Please flow steps mentioned here <u>https://kafka.apache.org/quickstart</u>

2.6.2 Check if kafka is running

Run cmd \$ netstat --tlnp | grep :9092 (9092 is default port of kafka)

Possible issue while starting kafka

- Kafka is not starting may be because zookeeper is not yet started run cmd \$ netstat -tlnp | grep :2181 (2181 is default port of zookeeper) if any services is not running on this port means zookeeper is down
- 2. Check if any permission issue is there for kafka log folder.

Create console producer and consumer for troubleshooting

here is a use full reference for that <u>http://cloudurable.com/blog/kafka-tutorial-kafka-from-</u> <u>command-line/index.html</u>

2.6.3 Some references that can be useful

https://docs.cloudera.com/documentation/kafka/latest/topics/kafka_faq.html



2.7 Troubleshooting Environmental Issues

This section contains the following subsections:

- 2.7.1 Possible issues while deploying services
- 2.7.2 Possible issues in login and screen launch

2.7.1 Possible issues while deploying services

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

2.7.1.1 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.

You may check **flyway_schema_history** table of the respective schema for finding the flyway script entries.

2.7.1.2 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."

2.7.2 Possible issues in login and screen launch

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

2.7.2.1 Login page is not launching

If the login page is not launching, check if the app-shell war file is deployed. If it is deployed, make sure that the war file is up and running in the deployed managed server and try to login. In addition, check if you are logged in with the appshell URL according to the war file deployed.

Also, check if the required component-server wars like cmc-component-server, oboflocomponent-server etc are also deployed along with the app-shell.

For example, <u>http://whf00bjp.in.oracle.com:7403/app-shell/index.jsp</u> will load the login page of the application.



Figure 21: Login Page



2.7.2.2 Unable to login after launching the application

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

Figure 22: Services

PLATO-API-GATEWAY	n/a (1)	(1)	UP (1) - whf00bjo.in.oracle.com:plato-api-gateway:7007
PLATO-BATCH-SERVER	n/a (1)	(1)	UP (1) - whf00bjo.in.oracle.com:plato-batch-server:7013
PLATO-DISCOVERY-SERVICE	n/a (1)	(1)	UP (1) - whf00bjo.in.oracle.com:plato-discovery-service:7003
PLATO-O	n/a (1)	(1)	UP (1) - whf00bjo
PLATO-ORCH-SERVICE	n/a (1)	(1)	UP (1) - whf00bjo.in.oracle.com:plato-orch-service:7017
PLATO-UI-CONFIG-SERVICES	n/a (1)	(1)	UP (1) - whf00bjo.in.oracle.com:plato-ui-config-services:7009
SMS-CORE-SERVICES	n/a (1)	(1)	UP (1) - whf00bjo.in.oracle.com:sms-core-services:7011

2.7.2.3 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.

2.7.2.4 Retail Banking menus are not displayed after logging in

After you log in, if the Retail Banking 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.

2.7.2.5 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

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

Figure 23: Health Checks

Application	AMIs	Availability Zones	Status
CMC-ACCOUNT-SERVICES	n/a (1)	(1)	UP (1) - whf00cdl.in.oracle.com:cmc-account-services:7005
CMC-ADVICE-SERVICES	n/a (1)	(1)	UP (1) - whf00cdl.in.oracle.com:cmc-advice-services:7005
CMC-BASE-SERVICES	n/a (1)	(1)	UP (1) - whf00cdl.in.oracle.com:cmc-base-services:7005
CMC-BRANCH-SERVICES	n/a (1)	(1)	UP (1) - whf00cdl.in.oracle.com:cmc-branch-services:7005
CMC-BUSINESSOVERRIDES-SERVICES	n/a (1)	(1)	UP (1) - whf00cdl.in.oracle.com:cmc-businessoverrides-services:7005
CMC-CHECKLIST-SERVICES	n/a (1)	(1)	UP (1) - whf00cdl.in.oracle.com:cmc-checklist-services:7005
CMC-COMMENTS-SERVICES	n/a (1)	(1)	UP (1) - whf00cdl.in.oracle.com:cmc-comments-services:7005
CMC-CURRENCY-SERVICES	n/a (1)	(1)	UP (1) - whf00cdl.in.oracle.com:cmc-currency-services:7005
CMC-CUSTOMER-SERVICES	n/a (1)	(1)	UP (1) - whf00cdl.in.oracle.com:cmc-customer-services:7005
CMC-DATASEGMENT-SERVICES	n/a (1)	(1)	UP (1) - whf00cdl.in.oracle.com:cmc-datasegment-services:7005
CMC-DOCUMENT-SERVICES	n/a (1)	(1)	UP (1) - whf00cdl.in.oracle.com:cmc-document-services:7005
CMC-EXTERNAL-CHART-ACCOUNT-SERVICES	n/a (1)	(1)	UP (1) - whf00cdl.in.oracle.com:cmc-external-chart-account-services:7005
CMC-OBCBS-SERVICES	n/a (1)	(1)	UP (1) - whf00cdl.in.oracle.com:cmc-obcbs-services:7005
CMC-OBRH-SERVICES	n/a (1)	(1)	UP (1) - whf00cdl.in.oracle.com:cmc-obrh-services:7005



3.1 Weblogic

3.1.1 Unable to login to weblogic console

Sometimes you are unable to login to weblogic console or console is down when trying to deploy or re-deploy services

This issue can be fixed by restarting weblogic domain from server. Perform the following steps:

- 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 executing below command, so that it can run in the background. For example, **./startWebLogic.sh &**.

Ê	
This site can't be reached whf00peb refused to connect.	
Try: • Checking the connection • Checking the proxy and the firewall ERR_CONNECTION_REFUSED	
Reload	Details

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, try to 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 quick fix, try to restart the managed server or try to increase the memory allocated to the managed server.

Perform the following steps to increase the memory:

1. Click Servers.

Figure 25: Domain Structure

Change Center							
View changes and restarts							
Configuration editing is enabled. Future changes will automatically be activated as you modify, add or delete items in this domain.							
Domain Structure							
servicing_release							
Domain Partitions							
Environment							
Servers							
Clusters							
Coherence Clusters							
Resource Groups							
Resource Group Templates							
Machines							
Virtual Hosts							
Virtual Targets							
Work Managers							
Concurrent Templates							
Resource Management							

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

	and go to the defense of the defense														
Configura	tion	Protocols	Logging	Debug	Monitoring	Control	Deployments	Services	Security	Notes					
General	Cluste	r Service	es Keysto	res SS	L Federatio	n Services	Deployment	Migration	Tuning	Overload	Concurrency	Health Monitoring	Server Start	Web Services	Coherence
Save															



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

	Argumente	
	Arguments: -Xmx2048m	

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

Change Center						
View changes and restarts						
Configuration editing is enabled. Future changes will automatically be activated as you modify, add or delete items in this domain.						
Domain Structure						
servicing_release						
Environment						
Servers						
■ Clusters						
Coherence Clusters						
Resource Groups						
Resource Group Templates						
Machines						
Virtual Hosts						
Virtual Targets						
Work Managers						
Concurrent Templates						
Resource Management						



2. Click Shutdown.

Figure 29: Control Tab

Change Center	1	🔒 Home Log Out Preferences 돝	Record Help	Q					
View changes and restarts		Home >Summary of Servers							
Configuration editing is enabled. Future changes will automatically be activated as you modify, add or delete items in this domain.		Configuration Control							
Domain Structure		Use this name to change the state	of the servers in this Webl onic S	enver domain. Control operatio	ne on Managed Servere require start	ting the Node Manager Starting I			
oblm2 Arritions		Use this page to change the state of the servers in this WebLogic Server domain. Control operations on Managed Servers require starting the Node Manager. Starting Man wide administration port.							
Environment Servers		25							
ClustersCoherence Clusters		Customize this table							
Resource Groups Resource Group Templates		Servers (Filtered - More Columns Exist)							
Machines Virtual Hosts	1.1	Start Resume Suspend ~	Shutdown v Restart S&L						
Virtual Targets Work Managers		🗆 Server 🗞	When work completes Force shutdown now	Machine	State	Status of Last Action			
Concurrent Templates		AdminServer(admin)	Torce shadowit now		RUNNING	None			
Resource Management		managed_server1		Machine_1	RUNNING	None			
How do I		managed_server2		Machine_1	RUNNING	None			
 Start and stop servers 		managed_server3		Machine_1	RUNNING	None			
 Start Managed Servers from the 		managed_server4		Machine_1	RUNNING	None			
Administration Console Restart SSI		managed_server5		Machine_1	RUNNING	None			
Start Managed Servers in Admin mode		managed_server6		Machine_1	RUNNING	None			
Start Managed Servers in a cluster		Start Resume Suspend ~	Shutdown ~ Restart SSL						

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-rpmmaintanence-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 Database

3.2.1 Configure Data Sources in WebLogic

To add the Data Sources, follow the below steps:

1. Go to Services, select Data Sources option.

Figure 30: Data Sources

ORACLE WebLogic Server Adr						
Change Center						
View changes and restarts						
Configuration editing is enabled. Future changes will automatically be activated as you modify, add or delete items in this domain.						
Domain Structure						
Deployments						
- Services						
Data Sources						
Persistent Stores						
Foreign JNDI Providers						
Work Contexts						
XML Registries						
XML Entity Caches						
jCOM						
Mail Sessions						
File T3						
JTA						

2. Click on **New** button and add the data source providing the required details.

lome >Summary of Servers >Sum	mary of JDBC Data Sou	rces >PLATO >Summary of JDBC Data So	Irces
mmary of JDBC Data Source	s		
	-		
onfiguration Monitoring			
A JDBC data source is an objec	t bound to the JNDI	ree that provides database connectivity th	rough a pool of JDBC connections. Applications can look up a data source on the JNDI tree and then borrow a database
This page summarizes the JDB	data source objects	that have been created in this domain.	
Customize this table			
customize uns table			
Data Sources (Filtered - Mor	e Columns Exist)		
New - Delete			
Generic Data Source	_		
GridLink Data Source	Туре	JNDI Name	Targets
Multi Data Source	Generic	jdbc/ICL	managed_server1, managed_server2, managed_server3, managed_server4, managed_server5, managed_server6
Proxy Data Source	Generic	jdbc/LMB	managed_server1, managed_server2, managed_server3, managed_server4, managed_server5
UCP Data Source	Generic	jdbc/LMC	managed_server1, managed_server2, managed_server3, managed_server4, managed_server5
OCP Data Source	Generic	jdbc/LMD	managed_server1, managed_server2, managed_server3, managed_server4, managed_server5
LMR	Generic	jdbc/LMR	managed_server1, managed_server2, managed_server3, managed_server4, managed_server5, managed_server6
LMX	Generic	jdbc/LMX	managed_server1, managed_server2, managed_server3, managed_server4, managed_server5
	Generic	jdbc/LRT	managed_server1, managed_server2, managed_server3, managed_server4, managed_server5
PLATO	Generic	jdbc/PLATO	managed_server1, managed_server2, managed_server3, managed_server4, managed_server5, managed_server6
	Generic	jdbc/PLATOBATCH	managed_server1, managed_server2, managed_server3, managed_server4, managed_server5, managed_server6
PLATOBATCH			
0	Generic	idbc/PLATO UI CONFIG	managed server1, managed server2, managed server3, managed server4, managed server5, managed server6
PLATOBATCH PLATO_UI_CONFIG SMS		jdbc/PLATO_UI_CONFIG 1dbc/sms	managed_server1, managed_server2, managed_server3, managed_server4, managed_server5, managed_server6 managed_server1, managed_server2, managed_server3, managed_server4, managed_server5, managed_server6

Figure 31: Summary of JDBC Data Sources



Figure 32: Create a New JDBC Data Source

Create a New JDBC Data Source	
Create a New JDBC Data Source	
Back Next Finish Cancel	
JDBC Data Source Properties	
The following properties will be used to identif * Indicates required fields	y your new JDBC data source.
What would you like to name your new JDBC da	ata source?
低금 * Name:	PLATO
What scope do you want to create your data so	ource in ?
Scope:	Global 🗸
What JNDI name would you like to assign to yo	ur new JDBC Data Source?
🚰 JNDI Name:	
jdbc/PLATC	
What database type would you like to select?	
Database Type:	Oracle 🗸
Home >Summary of Servers >Summary of JDBC Data Sources >PLAT Create a New JDBC Data Source	TO >Summary of JDBC Data Sources
	TO >Summary of JDBC Data Sources
Create a New JDBC Data Source	TO >Summary of JDBC Data Sources
Create a New JDBC Data Source Back Next Finish Cancel	TO >Summary of JDBC Data Sources
Create a New JDBC Data Source Back Next Finish Cancel Connection Properties Connection Properties Cancel	
Create a New JDBC Data Source Back Next Finish Cancel Connection Properties Define Connection Properties.	
Connection Properties Define Connection Properties.	7
Connection Properties Define Connection Properties. What is the name of the database you would like to connect to? Database Name:	7
Connection Properties Define Connection Properties. What is the name of the database you would like to connect to? Database Name:	OBLMDB whf00bqa.in.oracle.com
Back Next Finish Cancel Back Next Finish Cancel Connection Properties Define Connection Properties. What is the name of the database you would like to connect to? Database Name: What is the name or IP address of the database server? Host Name:	OBLMDB whf00bqa.in.oracle.com
Back Next Finish Cancel Back Next Finish Cancel Connection Properties Define Connection Properties. What is the name of the database you would like to connect to a Database Name: Define Connection Properties. What is the name or IP address of the database server? Host Name: What is the port on the database server used to connect to the database server.	2 OBLMDB whf00bqa.in.oracle.com database? 1521
Connection Properties Define Connection Properties. What is the name of the database you would like to connect to 7 Database Name: What is the name or IP address of the database server? Host Name: What is the port on the database server used to connect to the Port:	2 OBLMDB whf00bqa.in.oracle.com database? 1521
Connection Properties Define Connection Properties. What is the name of the database you would like to connect to? Database Name: What is the name or IP address of the database server? Host Name: What is the port on the database server used to connect to the Port:	2 OBLMDB whf00bqa.in.oracle.com database? 1521 e database connections? OBLM144DEVPLATO
Create a New JDBC Data Source Back. Next. Finish Cancel Connection Properties Define Connection Properties. What is the name of the database you would like to connect tor Database Name: What is the name or IP address of the database server? Host Name: What is the port on the database server used to connect to the Port: What database account user name do you want to use to create Database User Name:	2 OBLMDB whf00bqa.in.oracle.com database? 1521 e database connections? OBLM144DEVPLATO
Connection Properties Define Connection Properties What is the name of the database you would like to connect tor Database Name: What is the name or IP address of the database server? Host Name: What is the port on the database server used to connect to the Port: What is the port on the database server used to connect to the Port: What is the database account user name do you want to use to create database User Name: What is the database account password to use to create database	2 OBLMDB whf00bqa.in.oracle.com database? 1521 e database connections? OBLM144DEVPLATO use connections?
Connection Properties Define Connection Properties. What is the name of the database you would like to connect to? Database Name: What is the name or IP address of the database server? Host Name: What is the port on the database server used to connect to the Port: What database account user name do you want to use to create database Jacount password to use to create database Password:	2 OBLMDB whf00bqa.in.oracle.com database? 1521 e database connections? OBLM144DEVPLATO sse connections?
Connection Properties Define Connection Properties What is the name of the database you would like to connect to? Database Name: What is the name or IP address of the database server? Host Name: What is the port on the database server used to connect to the Port: What database account user name do you want to use to create database Database User Name: What is the database account password to use to create database Password: Confirm Password:	2 OBLMDB whf00bqa.in.oracle.com database? 1521 e database connections? OBLM144DEVPLATO sse connections?

3.2.2 Day0 Scripts

Make sure that all the Day0 scripts available in the product package are run successfully.



4 Troubleshooting Application Workflows

On successful login, the Oracle Banking Origination dashboard screen appears depending on the user privileges.

Menu Item Search	9	Application Search	Product Applications Near Expiry
Core Maintenance	•	Application Search	
Dashboard		Q 000APP000016594	FILTERS GBP 000 ALL NA >
File Management	•		Next 5 Days Next 10 Days Next 21 Days
Financial Institution Onboarding			13 25 25
Machine Learning	•		
Party Services	•		
Retail Banking	•	My Applications 0	Conversion Analysis
Rule	1		FILTERS NA ALL MONTHLY >
Security Management	•	Luttoner Let Crieboarding 0 0 Curton Account Curton Account Curt	Me Team
Task Management	۲		IVIE IEditi
Tasks	۲		
Teller		No Data To Display	6.90% WIP Opened
			27
		Loan Offers Near Expiry 🔻 👘 Stage Wise Loan Details 😤 👘	New Term Deposits
		FILTERS GBP 000 ALL NA > FILTERS GBP 000 ALL MONTI >	FILTERS GBP ALL MONTHLY >
		C 0 Expiring	
		Next 5 Days Next 10 Days Next 21 Days 419 Application Entry	

Figure 33: Oracle Banking Origination Dashboard

User Role Issues

Role Profile includes access rights to the functional activities that are common to a group of users. A user can be linked to a Role Profile by which you give the user access rights to all the functional activities in the Role Profile.

Go to: Security Management > Role screen

Figure 34: Role Maintenance

Role Mainten	ance	$_{\mu^{d}}$ \times
	iopy Unlock Close	
Role Code *		Description *
ADMIN_ROLE		Default role for initial login
Role Activity		
2	Functional Activity Code	Functional Activity Description
~	CMC_FA_BRANCH_EOD_PROCESS	Branch EOD process
×	SMS_FA_USER_NEW	User Create
×	SMS_FA_ROLE_AMEND	Role Amend
×	SMS_FA_ROLE_CLOSE	Role Close
~	SMS_FA_ROLE_REOPEN	Role ReOpen
Page 1 (1-5 of at least 35 items)	

Only authorized users can access the system with the help of a unique User Login ID and password. The user profile of a user contains the details of the user in four sections - User details, Status, Other details and User role branches.



Go to: Security Management > User screen

Figure 35: Users Maintenance	
------------------------------	--

Users Maintenance			,# ×
New Copy Unlock Close			
UserDetails			
Upername * CBLM03	Login ID * OBUA03	Home Branch * LMB Q	
		LVB V	
Status			
User Status *	Status Changed On	Is Supervisor *	Manager ID *
Brable v	Sep 10, 2020		LMADMIN1 Q
Start Date *	End Date		
Nov 90, 2018 mm	Sep 30, 2021		
Other Details			
Access to PI	Staff Customer Restriction Required	Cuttomer ID	Email ID
		٩,	obim03@gmail.com
Telephone Number	Home Phone Number	Mabile Number	Fax
There *	Language Code *		
WHITE	ENG Q		
User Role Branches			
user note branches			
Branch Code	Role Code	Role Description	
	ADMIN_ROLE Q	Default role for initial login	
una q	9		
Page 1 of 1 (1-2 of 2 items) K < 1 > X			
User Applications			
			Select Al Applications
Application Name		Application Description	
OBLM Q		Oracle Banking Liquidity Management System	
LMX Q		OBLM Integration	
unc o		OBLM CashConcentration	
Q		Dracle Banking Interest and Charges System	
UMP Q		DBLM Rool	
Page 1 (1-5 of at least 14 items) K < 1 2 3 > H			
Audit			Save Cancel
Ause View Role 🖋 View User 🖋 Users Maintenance 🖋			Sive Cancel

NOTE: Make sure that the required Role and User Applications are mapped to the user.



4.1 First level issues

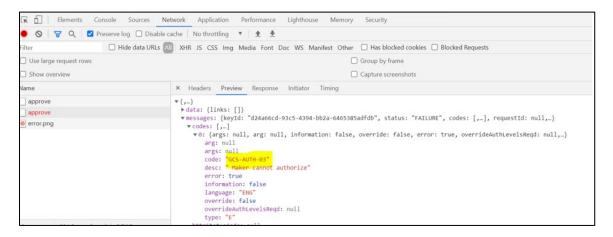
This subsection describes the possible issues that may occur during the basic investigation.

4.1.1 Error Message not shown

If there is any improper calls, check ERTB_MSGS table of the respective schema to understand the cause of the error. Open the Networks tab (F12), check the error code in the response.

SELECT * FROM ERTB_MSGS WHERE ERR_CODE='GCS_AUTH-03'

Figure 36: Error Message not shown



4.1.2 Setting Log file path

Log generation path needs to be defined in **PLATO_LOGGER_PARAM_CONFIG** table of PLATO schema.

select * from PLATO_LOGGER_PARAM_CONFIG;

Figure 37: Setting Log file path

	sele	ct * from pla	to_logger_param_co	nfig;
	y Resi	ult ×		
* 📇	60	SQL All Rov	vs Fetched: 3 in 0.072 sec	conds
	∲ ID	MODIFY_FIELD	PARAM_NAME	PARAM_VAL
1	1	N	LOG_PATH	/scratch/weblogic/logs
2	2	N	LOG_LEVEL	INFO
3	3	N	LOG_MSG_WITH_TIME	Ч



4.1.3 Dynamic log generation issues

For generating dynamic service logs, you need to insert data to **PLATO_DEBUG_USERS** table as shown in below screenshot.

select * from PLATO_DEBUG_USERS;

Figure 38: Dynamic log generation issues

Quer	y Resu	lt X		
	B	SQL All Rows	Fetched: 33 in 0.111 seconds	
	₿D	OEBUG_ENABLED	SERVICE_CODE	USER_ID
1	95	Y	plato-orch-service	ABIVAN
2	96	Y	plato-orch-service	ABIVAN2
3	97	Y	plato-o	ABIVAN
4	98	Y	plato-o	ABIVAN2
5	99	Y	plato-alerts-management-services	ABIVAN
6	100	Y	plato-alerts-management-services	ABIVAN2

NOTE: Login to WINSCP and check server logs. Log files for each service will be generated based on the user_id, branch_code and date at the path provided in the plato_logger_param_config table.

Figure 39: Server logs

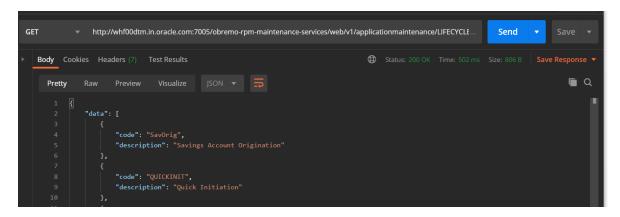
/scratch/weblogic/logs/		
Name	Size	Changed
bremo-rpm-projection-services_ABIVAN_000_2021-05-07.log	173 KB	5/10/2021 11:37:10 AM
obremo-rpm-cmn-applicantservices_ABIVAN_000_2021-05-07.log	96 KB	5/10/2021 11:37:09 AM
obremo-rpm-maintenance-services_ABIVAN_000_2021-05-07.log	285 KB	5/10/2021 11:37:08 AM
obremo-rpm-maintenance-services_ABIVAN_000_2021-05-10.log	69 KB	5/10/2021 11:37:07 AM
cmc-transactioncontroller-services_ABIVAN_000_2021-05-10.log	130 KB	5/10/2021 10:21:51 AM



4.1.4 Call is failing in Gateway

If any API call is failing in Gateway, hit the same API endpoint without passing through apigateway via postman.

Figure 40: Call is failing in Gateway



NOTE: Restart the specific services if required.

4.1.5 Code error in GCS side

If there is any error in GCS side codes, use java de-complier to debug the error.

4.1.6 404 error

The possible causes for 404 error are as follows:

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

4.1.7 500 internal error

The possible causes for 500 internal error are as follows:

- Issue with Oracle Banking Microservices Architecture entries
- Issue with Eureka
- Service may not be up
- Issue with any peace of code

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



4.2 Transaction data verification

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

- In the **IN** request and **OUT** response, verify that all the field data is going to service side.
- If there is any error related to SMS, check for the availability of SMS entries.
- Validate the endpoints and data.
- Validate the request headers passed during the API call.
- Verify that the data entered in the screen is accurate.

4.2.1 "Apply Now" is Failing in Product Catalogue

If "Apply Now" in Product Catalogue is failing, troubleshoot using the below points

- Check if conductor war and plato-orch-service war is deployed in Weblogic
- Check whether "PLATO-O" and "PLATO-ORCH-SERVICE" is registered in Eureka

PLATO-O	n/a (1)	(1)	UP (1) - plato-o:8001
PLATO-ORCH-SERVICE	n/a (1)	(1)	UP (1) - whf00dtm.in.oracle.com:plato-orch-service:7011

- Check whether the INITIATION workflow DSL is imported.
 - Front-End Menu: Tasks → Business Process Maintenance → Search for INITIATION workflow
- Check whether obremo-rpm-projection-services is up and running as this service is required during INITIATION(Apply Now)
- Check whether Sequence Generator service is up and running

SEQUENCEGENERATORSERVICE n/a (1) (1) UP (1) - whf00dtm.in.oracle.com:sequencegeneratorservice:7020

• Refer 2.2 Preliminary Check for UI section to see if any API call is failing



4.3 Party Module Integration Troubleshooting

This section describes the possible issues that may occur in Party Module integration. The possible issues and causes are described in the following subsections:

4.3.1 Existing Customer Details Fetch is failing

If in Customer Information data-segment, the existing customer details is not fetching, follow the below steps to

- 1. Refer 2.2 Preliminary Check for UI to see if any Party API is failing
- 2. Check Oracle Banking Routing Hub Audit Request to see if any Oracle Banking Routing Hub calls to Party Module has failed
 - a. Go to Core Maintenance → Routing → Service Consumers → RPM_ORIGINATION → Consumer Services tab → OBPY_GET_EXISTING_PARTY
 Note: If you do not find any Oracle Banking Routing Hub configuration named OBPY_GET_EXISTING_PARTY, that means, the Oracle Banking Routing Hub configurations are not fully imported. Import the Oracle Banking Routing Hub configuration available in the source folder.
 - b. From the Actions, click on Request Audit

Figure 41: Service Consumers

RPM_ORIGINATION >	Consumer Ser	vices > OBPY_GE	T_EXISTING_PARTY		×*.
Transformation Routing					
🔂 Add 🛛 🔂 Import s	earch	्			
Actions Name	Status	Product Processor	Implementation	Service	
	ACTIVE	OBPY 14.4	obpy-party-services	getPartyDetails - /service/v1/getParty/{partyId}	
Pag Edit of 1 items) K < 1	к			
Delete					
Export					
Request Audit					

- c. Check the latest getPartyDetails Oracle Banking Routing Hub call
- d. Click on the Request Id and check the "Provider Response" to check for any errors



Figure 42: Request Audit

Request Id		Provider	Provider		Provider Implementation		
Provider Service	2	Route		User Id			
Search							
Search Request Id	Provider	Provider Implementation	Provider Service	Route	Status	User	

Figure 43: Request Audit Details

Request Audit Details	5		×
Request Id			
LKxZNjMF6Wdtim442J8u blcTua6dTKguw4	cdMBncKWGatVhdd5m	kdVmXUjA0cdT6fcCQ1Uz\	/G1ZCO6QdWmvLceW2
O	•	·····································	•
OBRH Request	Provider Request	Provider Response	OBRH Response
Timestamp			
2021-05-10T12:42:31.352	2+05:30		
Message			
Headers\" : [\"\", \"\"],\n OPTIONS, HEAD, PATCH\ \"no-store\"],\n \"Conte	\"Access-Control-Allov "],\n \"Access-Control nt-Type\" : [\"applicatio	als\" : [\"true\"]\n \"Acce v-Methods\" : [\"GET, POS Allow-Origin\" : [\"\"]\n n/json\"]\n \"Date\" : [\' ttpResponseCode\" : 200\\	ST, PUT, DELETE, \"Cache-Control\" : ["Mon, 10 May 2021

4.3.2 Customer Information Data-segment Dropdowns not Fetching

If in Customer Information data-segment, the existing customer details is not fetching, follow the below steps to

- 1. Refer 2.2 Preliminary Check for UI to see if any Party API is failing
- 2. Check Oracle Banking Routing Hub Audit Request to see if any Oracle Banking Routing Hub calls to Party Module has failed
 - a. Go to Core Maintenance → Routing → Service Consumers → RPM_ORIGINATION
 → Consumer Services tab → OBPY_MAINTENANCE
 Note: If you do not find any Oracle Banking Routing Hub configuration named
 OBPY_MAINTENANCE, that means, the Oracle Banking Routing Hub configurations are not fully imported. Import the Oracle Banking Routing Hub configuration available in the source folder.
 - b. From the "Actions", click on "Request Audit"
 - c. Check the latest getPartyMaintenance Oracle Banking Routing Hub call
 - d. Click on the Request Id and click the "Provider Response" to check for any errors



4.4 FLEXCUBE Host Integration Troubleshooting

This section describes the possible issues that may occur in FLEXCUBE Universal Banking Solution integration. The possible issues and causes are described in the following subsections:

4.4.1 Host Calls Failing

Host call failure may be due to various reasons ranging from improper Oracle Banking Routing Hub configuration to absence of maintenance in the Oracle FLEXCUBE Universal Banking environment. Host call may fail during Business Product Host Product listing, Interest or Charge Details data-segment fetch or during Oracle FLEXCUBE Universal Banking Account creation time. To find the root issue, follow the below steps

- 1. Check Oracle Banking Routing Hub Audit Request to see if any Oracle Banking Routing Hub calls to Oracle FLEXCUBE Universal Banking Module has failed
 - a. Go to Core Maintenance → Routing → Service Consumers → RPM_ORIGINATION → FCUBS
 Note: If you do not find any Oracle Banking Routing Hub configuration for Oracle FLEXCUBE Universal Banking, that means, the Oracle Banking Routing Hub configurations are not fully imported. Import the Oracle Banking Routing Hub configuration available in the source folder.
 - b. From the Actions, click on Request Audit

Figure 44: Service Consumer

Service Consumers			, ²
RPM_ORIGINATION > Service Provide	ers > FCUBS 14.4		
Implementation			
🔂 Add 🛃 Import search	٩		
Actions Name	Description	Host	Port
View	Default Implementation	whf00alo	7348
Pag Edit of 1 items) K < 1	к		
Delete			
Export			
Request Audit			



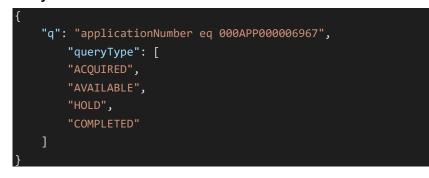
c. Check the latest Transformation for which you have performed the operation

Figure 45: Request Audit

RPM_ORIGINATIO							
Implementation	Request Id	C	Consumer Service	Pr	ovider Service		
🕀 Add 🔂 Imp	Transformation	F	loute	U	ser Id		
Actions Name							Port
FCUBS_Default	Search						7348
Page 1 of 1 (1-1)	Request Id	Consumer Service	Provider Service	Transformation		Route	
	0j1zHum	Loan_Simulation	invokeReque st	Loan_Simulation_Trai	nsform	Loan_Simulation_I	
	kXbFn6P	Get_Customer_Liability_Detail	s invokeReque st	Get_Customer_Liabili	ity_Details_Transform	Get_Customer_Lia	
	myHGmn	Loan_Simulation	invokeReque st	Loan_Simulation_Trai	nsform	Loan_Simulation_I	
	ydL11PZ	Loan_Simulation	invokeReque st	Loan_Simulation_Trai	nsform	Loan_Simulation_F	

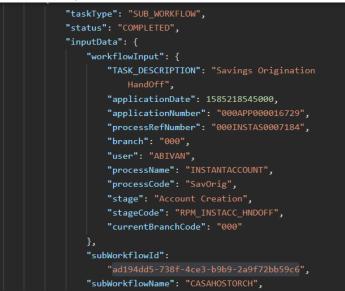
- d. Click on the Request Id and check the "Provider Response" to check for any errors
- 2. If there is no Oracle Banking Routing Hub call itself but still Host call is failing (especially for Account Creation), then failure might be in the workflow task level. In order to debug this scenario, follow the below steps
 - a. Using the Application Number, call the plato-orch-service search API (API details given below) using Postman

```
API UrI: <u>http://whf00dtm.in.oracle.com:7011/plato-orch-service/api/v1/extn/custom-actions/queries/tasks?offset=0&limit=100</u>
Body:
```



Headers:

Content-Type:application/json userld: appld:platoorch branchCode: entityld:DEFAULTENTITY b. From the response, search for "subWorkflowId"



c. Use this subWorkflowId as parameter in the below API API Url: http://whf00dtm.in.oracle.com:7011/plato-orch-service/api/workflow/ad194dd5-738f-4ce3-b9b9-2a9f72bb59c6 Headers: Content-Type:application/json userId: appld:platoorch branchCode: entityId:DEFAULTENTITY
d. The response will show the actual error for HTTP task to fail.



5 Business Error Codes

The list of overrides/information/error codes that might be faced during usage of the application can be found in the table ERTB_MSGS of the corresponding service schema being operated on. For example, if you face an error in Business Product maintenance screen and you want to see the error code in the table, you should connect to your Business Product schema and search for that particular error code in the ERTB_MSGS table.

Figure 46: Error Code and Messages

	select * from H	RTB_MSGS;					
Que	Query Result ×						
📌 🕘	📌 📇 🔞 🙀 sqL Fetched 50 rows in 0.177 seconds						
	ERR_CODE		() MESSAGE				
1	RPM-BP-CMN-001	ENG	Exception Occurred while Parsing Date				
2	RPM-BPD-001	ENG	Expiry date should be greater than Start date				



6 Appendix A: Acronyms, Abbreviations and Definitions

The following acronyms/abbreviations are used in this guide:

Table 2: Acronyms and Abbreviations

Acronyms	Definition
SMS	Security Management System
СМС	Common Core
мос	Mid office Common Core
ELK	Elasticsearch Logstash Kibana



7 Appendix B: Related Documentation

The related documents are as follows:

- Oracle Banking Common Core User Guide
- Getting Started User Guide
- Oracle Banking Security Management System User Guide
- Alerts and Dashboard User Guide
- Configurations User Guide
- Retail 360 User Guide
- Retail Onboarding User Guide
- Operations User Guide
- Current Account Origination User Guide
- Savings Account Origination User Guide
- Retail Loans Origination User Guide
- Term Deposit Origination User Guide
- Credit Card Origination User Guide
- Tasks User Guide

