

Oracle® Banking Platform Analytics

Installation Guide

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Contents

Preface	7
Audience	7
Documentation Accessibility	7
Related Documents	7
Conventions	7
1 Introduction	10
2 Pre-installation Setups	12
2.1 Install Oracle Banking	12
2.2 Install Required Software	12
2.3 Configure Oracle GoldenGate for Big Data	12
2.3.1 Configure file	13
2.3.2 Set up source	13
2.3.3 Set up target	14
2.3.4 Set up target	15
2.3.5 Start initial load process	16
2.3.6 Start continuous replicate	16
3 Installation Process	18
3.1 Download	18
3.2 Install OBPA Application	18
3.3 Execute Scripts	18
3.4 Change Config Properties	19
3.5 Configure Drill Data Source	19
3.6 Deploy REST and UI	23
4 Start Application	24

4.1 Start Kafka Consumer	24
4.2 Start Spark Jobs	24

List of Figures

Figure 3–1 Select Generic Data Source	20
Figure 3–2 Enter JDBC data source details	21
Figure 3–3 Enter driver class name and URL	22
Figure 3–4 Click Finish	23
Figure 3–5 Deploy REST	23
Figure 3–6 Deploy UI	23

List of Tables

Table 2–1 List of software required	12
Table 2–2 Values to update for source	13
Table 2–3 Values to update for target	15

Preface

This Installation Guide contains information on installation and configuration of Oracle Banking Platform Analytics (OBPA).

This preface contains the following topics:

- [Audience](#)
- [Documentation Accessibility](#)
- [Related Documents](#)
- [Conventions](#)

Audience

This guide is meant for the teams who perform installation of Oracle Banking Platform Analytics. It covers the step-by-step installation process. It also covers the prerequisites required to be configured before starting the installation process.

Documentation Accessibility

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Related Documents

For more information, see the following documentation:

- For installation of Oracle Banking Enterprise Originations, see the Oracle Banking Enterprise Originations Installation Guide - Silent Installation guide.
- For an overview of security and secure development, see the Oracle Banking Enterprise Originations Security Guide and Oracle Banking Enterprise Originations Secure Development Guide.

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you

Convention	Meaning
	supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1 Introduction

Oracle Banking Platform Analytics (OBPA) leverages on the best-of-breed open source technologies to offer data ingestion and processing capabilities for deriving business insights, while ensuring cost-effectiveness, scalability, and reliability. It offers multiple dashboards that provide insights on the origination process.

2 Pre-installation Setups

This chapter explains the pre-installation setups required before installing Oracle Banking Platform Analytics (OBPA).

2.1 Install Oracle Banking

Install the Oracle Banking product for which you want to set up the analytics. OBPA currently supports analytics for the following Oracle Banking products:

- Oracle Banking Platform (OBP): For detailed information on installing OBP, see the Oracle Banking Platform Installation Guide - Silent Installation.
- Oracle Banking Enterprise Originations (OBEO): For detailed information on installing OBEO, see the Oracle Banking Enterprise Originations Installation Guide - Silent Installation.

2.2 Install Required Software

Oracle Banking Platform Analytics requires the following software for its functioning. Ensure that these are already installed.

Assumption: The hardware and memory requirements are already provisioned.

Table 2–1 List of software required

Sr. No.	Software	Version
1	Hadoop	2.10.0
2	Spark	2.4.4
3	Hive	2.3.6
4	HBase	2.3.3
5	Zookeeper	3.5.6
6	Drill	1.17.0
7	Kafka	2.4.0
8	Oracle GoldenGate 12c	12.3.0.1.4
9	Oracle GoldenGate for Big Data 12c	12.3.2.1.6

2.3 Configure Oracle GoldenGate for Big Data

This section explains the configurations required for Oracle GoldenGate for Big Data. It helps in performing data ingestion in real time.

Ensure that Oracle GoldenGate 12c and Oracle GoldenGate for Big Data 12c are installed before starting with these configurations.

2.3.1 Configure file

The configuration files for GoldenGate are present in the **gg_package** folder. After you unzip the OBP or OBEO mediapack, this folder is located at the following path:

obpa_package/gg_package

The **gg_package** folder contains the following:

- component-config
- config
- lib

2.3.2 Set up source

Source refers to the area from where the data needs to be extracted. In the **gg_package** folder, the **source** folder is located at the following path:

gg_package/component-config/goldengate/source

To set up source, do the following:

1. In the **source** folder, copy the contents of the **dirprm** folder from *gg_package/component-config/goldengate/source/dirprm* and paste them at the following path:
`<Source_GG_Installation_dir>/../dirprm`
2. Open the following files present in the **dirprm** folder and update the values listed in the following table as per your DB and system configurations.

Table 2–2 Values to update for source

File	Update Values For	Description
obinit.prm	user_id	User ID
	pwd	Password
	rmt_host	Remote Host Name
	mgrport	Manager Port Name
	DB_NAME.SCHEMA_NAME	DB and Schema Name For example, "PBLRT02.BLRT02" where PBLRT02 is DB and BLRT02 is schema
	SCHEMA_NAME	Schema Name For example, "BLRT02"

Table 2–2 Values to update for source

File	Update Values For	Description
obext.prm	user_id	User ID
	pwd	Password
	DB_NAME.SCHEMA_NAME	DB and Schema Name For example, "PBLRT02.BLRT02" where PBLRT02 is DB and BLRT02 is schema
	SCHEMA_NAME	Schema Name For example, "BLRT02"
obpump.prm	user_id	User ID
	pwd	Password
	rmt_host	Remote Host Name
	mgrport	Manager Port Name
	DB_NAME.SCHEMA_NAME	DB and Schema Name For example, "PBLRT02.BLRT02" where PBLRT02 is DB and BLRT02 is schema

3. Perform initial load on extract server. Add extract using following command:

```
$GG_HOME/ggsci
```

```
ggsci>> ADD EXTRACT OBINIT, SOURCEISTABLE
```

```
ggsci>> INFO EXTRACT OBINIT
```

2.3.3 Set up target

Target refers to the area where the data needs to be replicated. In the **gg_package** folder, the **target** folder is located at the following path:

```
gg_package/component-config/goldengate/target
```

To set up target, do the following:

1. In the **target** folder, copy the contents of the **dirprm** folder from *gg_package/component-config/goldengate/target/dirprm* and paste them at the following path:

```
<Target_GG_Installation_dir>/../dirprm
```

2. Open the following files present in the **dirprm** folder and update the values listed in the following table as per your DB and system configurations.

Table 2–3 Values to update for target

File	Update Values For	Description
custom_kafka_producer.properties	bootstrap.servers	Kafka Server details It is recommended to configure more than one nodes. For example, if platform consists of a cluster of 3 nodes, then you need to add three: mum00cbq.in.oracle.com, mum00bhc.in.oracle.com, mum00aqx.in.oracle.com:9092
kafka.props	gg.classpath	Classpath for kakfa libraries, gg library and config Update the details highlighted in bold : /scratch/ggate/dirprm /scratch/bdp/kafka/libs/* /scratch/obpa/gg_package/lib/com.ofss.ob.gg.producer.jar /scratch/obpa/gg_package/lib/com.ofss.ob.infra.jar /scratch/obpa/gg_package/config
	Djava.class.path	Classpath for ggjava.jar Update this classpath.
obrinit.prm	DB_NAME.SCHEMA_NAME	DB and Schema Name For example, "PBLRT02.BLRT02" where PBLRT02 is DB and BLRT02 is schema

3. Perform initial load on replicate server. Add replicate using following command:

```
$GG_HOME/ggsci
```

```
ggsci>> ADD REPLICAT OBRINIT,SPECIALRUN
```

2.3.4 Set up target

Execute the following extract commands on the extract server:

```
ggsci >>ADD EXTRACT OBEXT , INTEGRATED TRANLOG , BEGIN NOW
```

You can also specify time using BEGIN {NOW | yyyy-mm-dd[hh:mi:[ss[.cccc]]]}

```
ggsci >>add extrail ./dirdat/gj, extract OBEXT
```

```
ggsci >>DBLOGIN USERID C##GG@C72255A PASSWORD welcome1
```

```
ggsci >>register extract OBEXT database container (PBLRT02);
```

```
ggsci >>start extract OBEXT
```

Execute the following pump commands on the extract server:

```
ggsci >>ADD EXTRACT OBPUMP , extrailsources ./dirdat/gj
```

```
ggsci >>add mtrtail ./dirdat/gj , extract OBPUMP
ggsci >>start extract OBPUMP
```

Get the current scn number from the database and replace scn_number in obinit.prm.

```
SQL> select current_scn from v$database;
CURRENT_SCN
-----
16483686664039
```

2.3.5 Start initial load process

Start extract from extract server:

```
$GG_HOME/ggsci
ggsci>>start extract OBINIT
```

Monitor extract process:

```
$GG_HOME/ggsci
ggsci>>info extract OBINIT
```

2.3.6 Start continuous replicate

Execute the following commands on replicate server once init load is finished:

```
ggsci >>add replicat OBREP exttrail ./dirdat/gj
ggsci >>start OBREP , aftercsn 16483686664039
```


3 Installation Process

This chapter covers the installation process of Oracle Banking Platform Analytics (OBPA).

3.1 Download

When you download the product mediapack, it contains the **obpa_package** folder among other folders. This is the main installation folder for Oracle Banking Platform Analytics. It contains the following:

```
installer.sh
obpa_package/app_package/rest
obpa_package/app_package/rest
obpa_package/bd_package/db-artifacts
obpa_package/bd_package/insights
obpa_package/gg_package/component-config
obpa_package/gg_package/config
obpa_package/gg_package/lib
obpa_package/scripts/ingest-scripts
obpa_package/scripts/kafka
obpa_package/scripts/schema-scripts
obpa_package/scripts/spark
obpa_package/scripts/uninstall
obpa_package/scripts/utility-commands
```

3.2 Install OBPA Application

To install the application, do the following:

1. In the **obpa_package** folder, open the **installer.sh** file and change the installation directory where you want to install OBPA:

```
export INSTALLATION_DIR=/scratch
```

2. Execute **installer.sh**.

3.3 Execute Scripts

Execute the following scripts:

1. HBase Schema Creation: Run **setup.sh** available at *obpa_package/scripts/schema-scripts/hbase/setup/setup.sh* on the machine where HBase Master is installed.

2. Hive Schema Creation: Run **setup.sh** available at *obpa_package/scripts/schema-scripts/hive/setup/setup.sh*.
3. Kafka Topic Creation: Run **create-kafka-topic.sh** available at *obpa_package/scripts/kafka/create-kafka-topic.sh*.

3.4 Change Config Properties

The **obp-app-config** folder is present in the obpa installation directory in this location:
/scratch/obpa/insights/config.

Change the following properties:

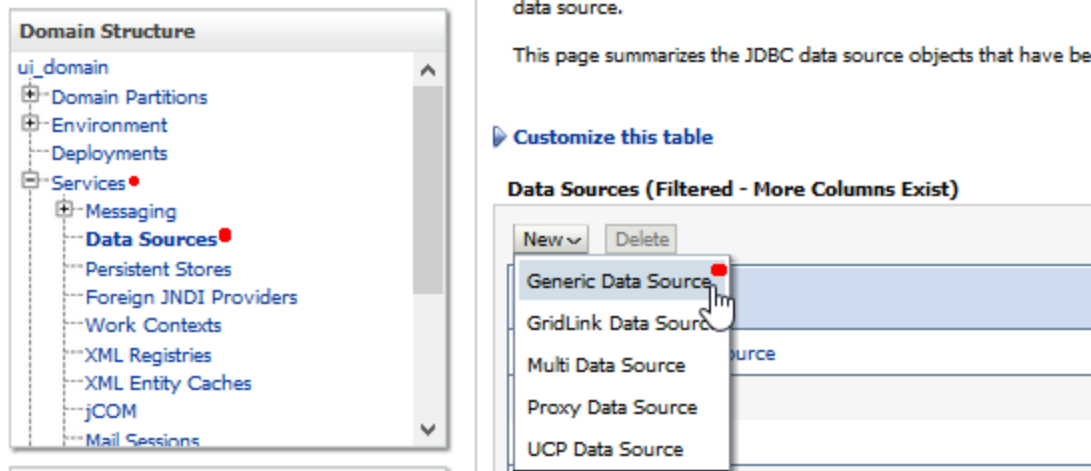
- In **KafkaProps** (*./insights/config/KafkaProps*), set the **BOOTSTRAP_SERVER**.
 - For example, `BOOTSTRAP_SERVER=mum00cbq.in.oracle.com:9092`, where `mum00cbq.in.oracle.com` is the machine name and `9092` is the port.
- In **drill.properties** (*./insights/config/drill.properties*), set the **drill_url**.
 - For example, `drill_url=jdbc:drill:zk=mum00cbq.in.oracle.com:2181,mum00bhc.in.oracle.com:2181,mum00aqx.in.oracle.com:2181/drill/drillbits1;schema=hbase`
- In **hadoop.properties** (*obpa_installation_dir/insights/config/hadoop.properties*), set the **hdfs.uri**.
 - For example, `hdfs.uri=hdfs://mum00cbq.in.oracle.com:9000`
- In **hbase.properties** (*obpa_installation_dir/insights/config/hbase.properties*) set the **hbase.master**, **hbase.zookeeper.quorum** and **hbase.zookeeper.property.clientPort**. For example,
 - `hbase.zookeeper.quorum=mum00cbq.in.oracle.com,mum00bhc.in.oracle.com,mum00aqx.in.oracle.com`
 - `hbase.master=mum00cbq.in.oracle.com:16010`
 - `hbase.zookeeper.property.clientPort=2181`
- In **hive.properties** (*obpa_installation_dir/insights/config/hive.properties*), set the **hive.metastore.uris**.
 - For example, `hive.metastore.uris=thrift://mum00cbq.in.oracle.com:9083`
- In **integrationTest.properties** (*obpa_installation_dir/insights/config/integrationTest.properties*), set **runspark.path**.
- Set logging directories path in **logging.xml** (*obpa_installation_dir/insights/config/logging.xml*) and **log4j.properties** (*obpa_installation_dir/insights/config/log4j.properties*).

3.5 Configure Drill Data Source

To configure drill data source, do the following:

1. In the weblogic console, go to **Services** and then **Data Sources**.
2. Click **New** and select **Generic Data Source**.

Figure 3–1 Select Generic Data Source



3. In the Create a New JDBC Data Source section, enter the following details and click **Next**:
 - Name: OBA_DRILL_XA
 - JNDI Name: jdbc/OBADrillDataSource
 - Database Type: Other

Figure 3–2 Enter JDBC data source details

Create a New JDBC Data Source

Back Next Finish Cancel

JDBC Data Source Properties

The following properties will be used to identify your new JDBC data source.

* Indicates required fields

What would you like to name your new JDBC data source?

Name: OBA_DRILL_XA

What scope do you want to create your data source in ?

Scope: Global

What JNDI name would you like to assign to your new JDBC Data Source?

JNDI Name: jdbc/OBADrillDataSource

What database type would you like to select?

Database Type: Other

Back Next Finish Cancel

4. Click **Next** for the next three sections.
5. Enter the following details and click **Next**.
 - Driver Class Name: org.apache.drill.jdbc.Driver
 - URL:
jdbc:drill:zk=mum00cbq.in.oracle.com:2181,mum00aqx.in.oracle.com:2181,mum00bhc.in.oracle.com:2181/drill/drillbits1;schema=hbase

Figure 3–3 Enter driver class name and URL

Create a New JDBC Data Source

Test Configuration | Back | Next | Finish | Cancel

Test Database Connection

Test the database availability and the connection properties you provided.

What is the full package name of JDBC driver class used to create database connections in the connection pool?
(Note that this driver class must be in the classpath of any server to which it is deployed.)

Driver Class Name:

What is the URL of the database to connect to? The format of the URL varies by JDBC driver.

URL:

What database account user name do you want to use to create database connections?

Database User Name:

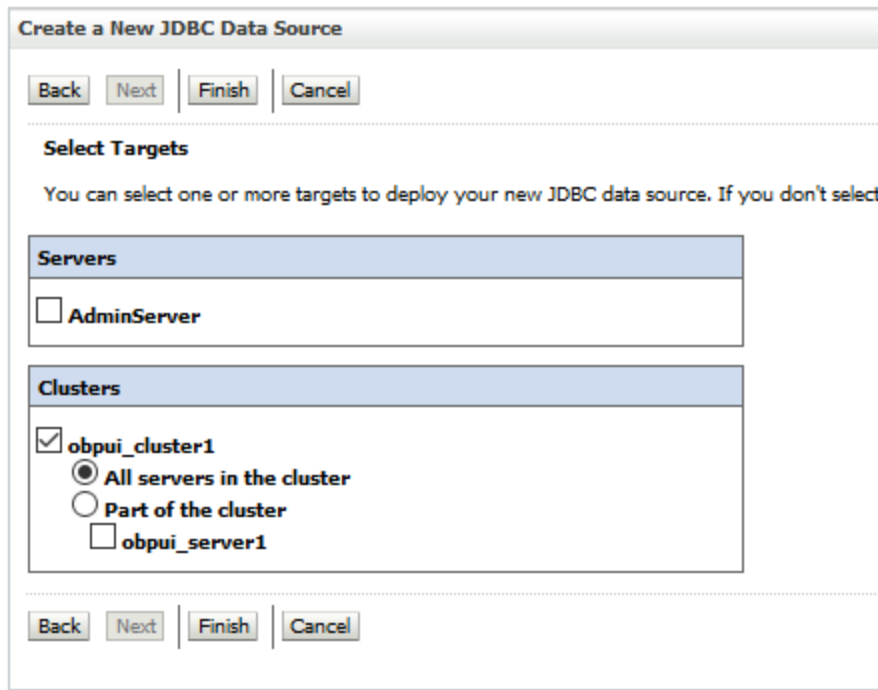
What is the database account password to use to create database connections?
(Note: for secure password management, enter the password in the Password field instead of the Properties field below)

Password:

Confirm Password:

6. Click **Finish**.

Figure 3–4 Click Finish



3.6 Deploy REST and UI

REST Deployment:

Deploy the REST applications on weblogic server (OBP Host server). Connection pool configuration required for DRILL

In `setDomainEnv.sh`, add the OBPA config directory to the classpath. Also, provide `drill-jdbc-all` jar to set up the connection pool.



Figure 3–5 Deploy REST

<input type="checkbox"/>	 com.ofss.ob.rest.analytics.or	Active		Web Application	obphost_cluster1	Global		100
--------------------------	---	--------	---	-----------------	------------------	--------	--	-----

UI Deployment:

Deploy the UI application on weblogic server.

Figure 3–6 Deploy UI

<input type="checkbox"/>	 com.ofss.ob.ui.analytics.or	Active		Web Application	obpui_cluster1	Global		100
--------------------------	---	--------	---	-----------------	----------------	--------	--	-----

4 Start Application

This chapter covers the process to start the Oracle Banking Platform Analytics (OBPA) application.

4.1 Start Kafka Consumer

To start the Kafka consumer, execute the following command:

```
./ingest.sh starter <RAW/STAGE> <DOMAIN NAME> <TOPIC NAME> &
```

4.2 Start Spark Jobs

To start origination task monitoring jobs, run the following:

```
scripts/spark/og_task_monitoring/start_tasks_monitoring.sh
```

To start origination application monitoring jobs, run the following:

```
scripts/spark/og_application_monitoring/start_application_monitoring.sh
```