Oracle Banking Liquidity Management
Annexure
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Table of Contents

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## 1.1 <u>Introduction</u>

This document is a supporting document, while installing OBLM application.

## 1.2 <u>How to create Domain and Cluster Configuration</u>

[Note: The name need not to be same as provided in the screenshots.]

1. Go to */oracle_common/common/bin* and run config.cmd (or .sh if operating system is linux) and below the below screen shots to create domain with required cluster and server configurations.
2. Select **Create a new domain** and **provide domain name**. Example: platoinfra_domain.
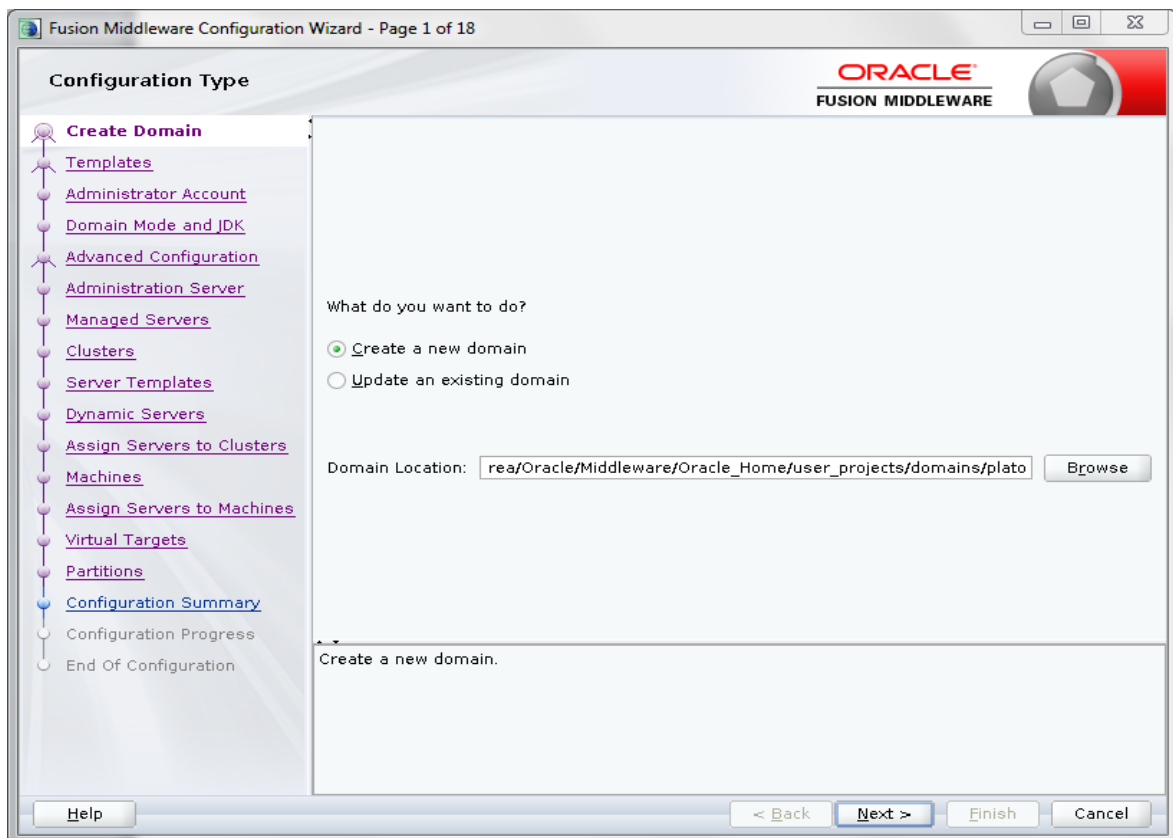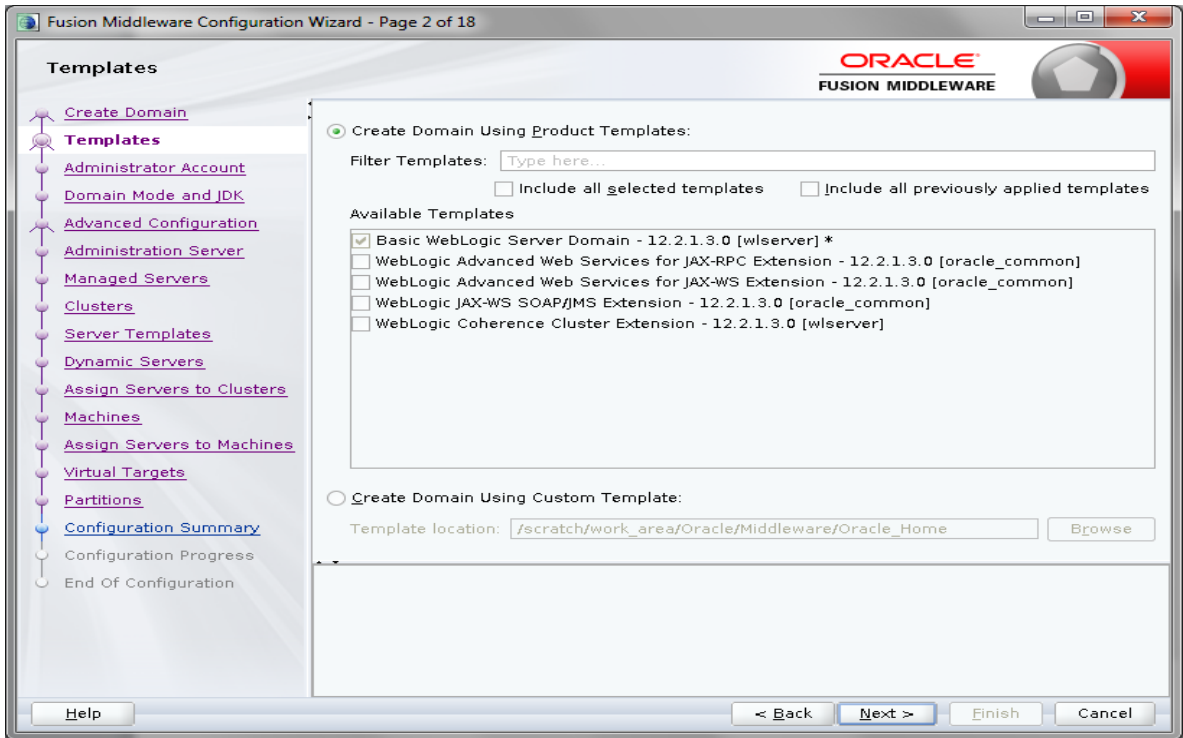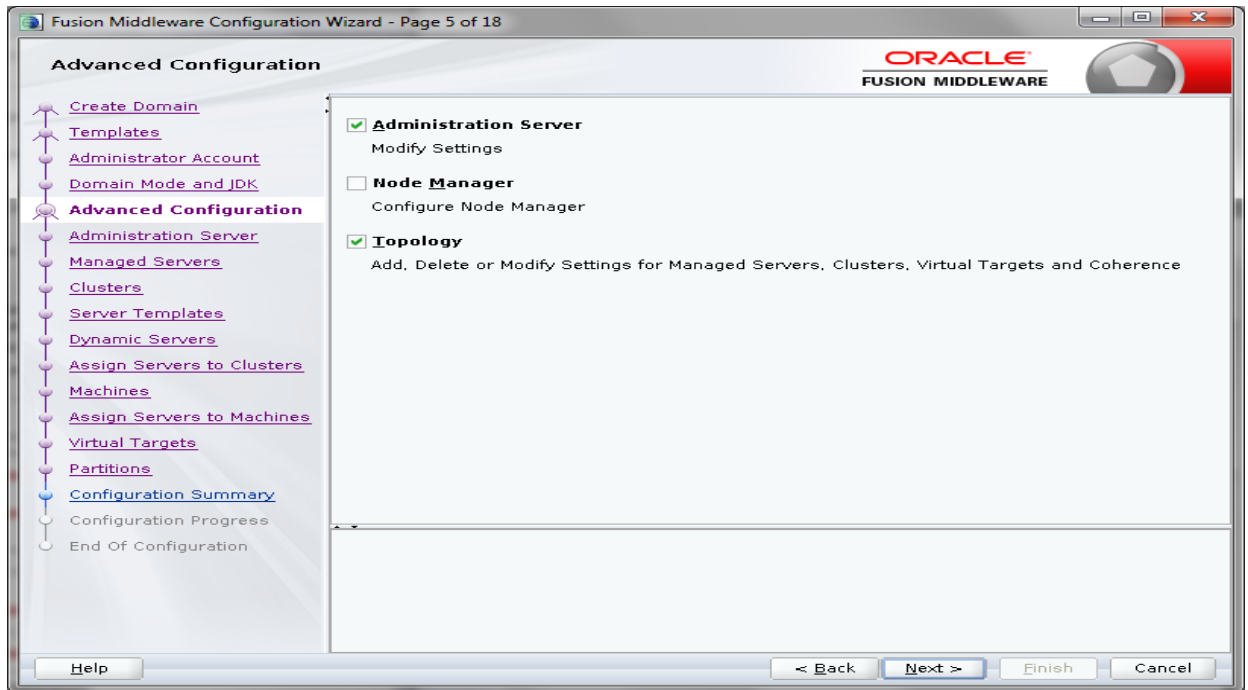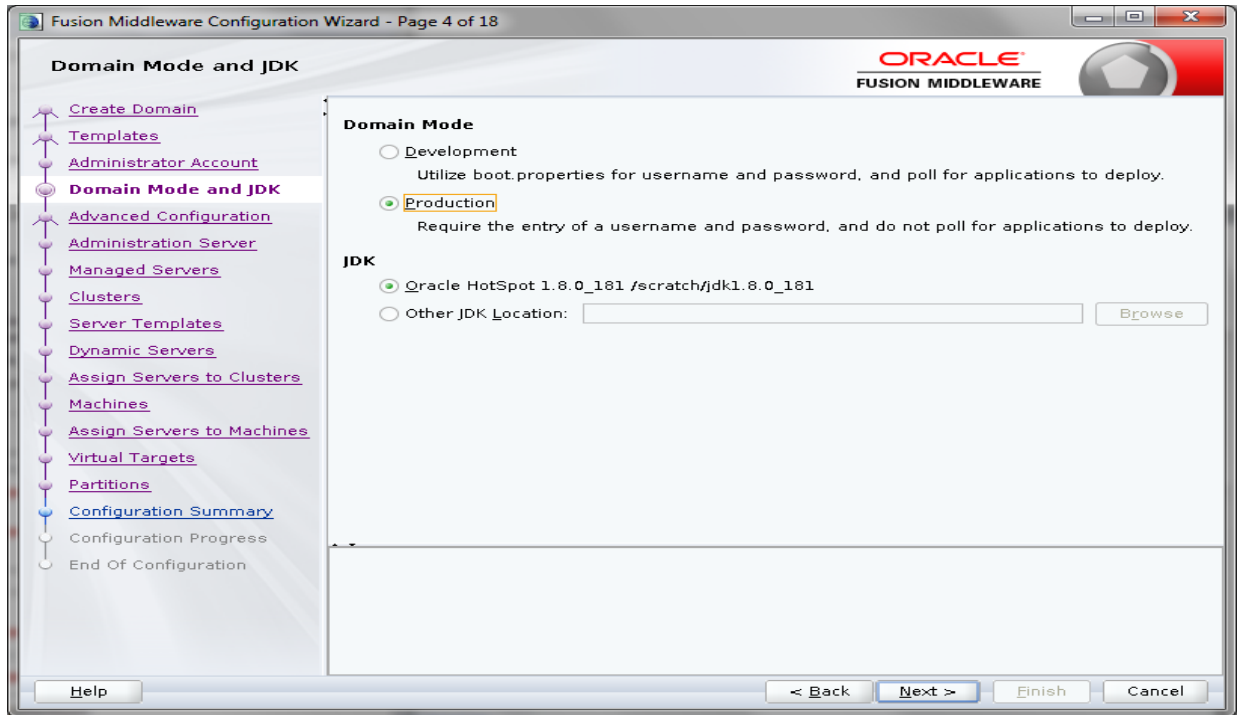
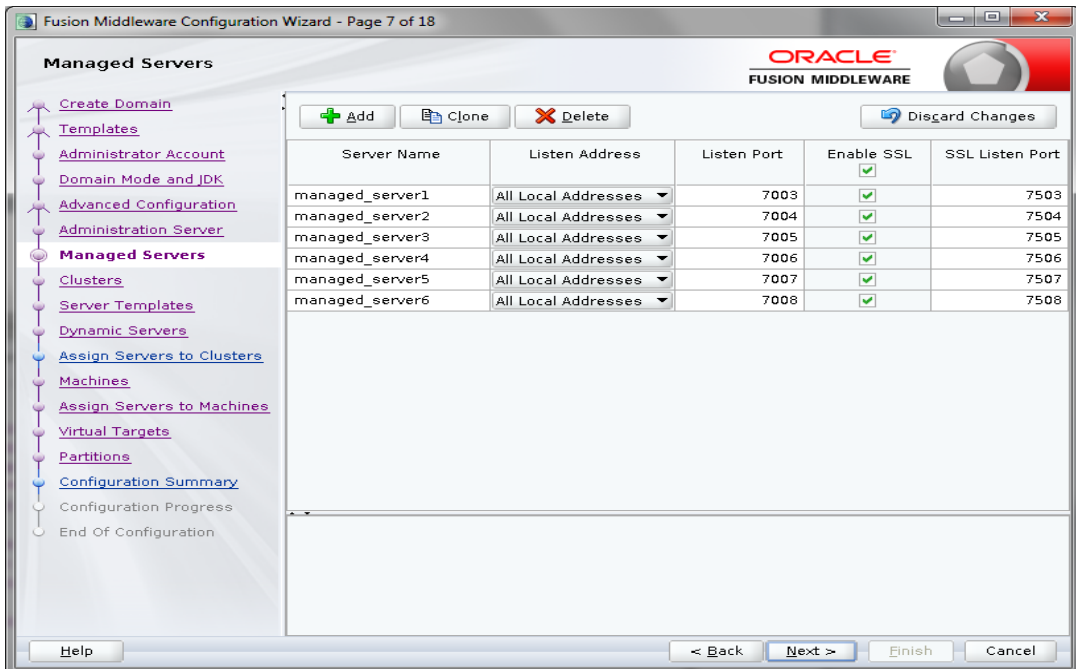3. Click **next** to create simple domain with default templates.
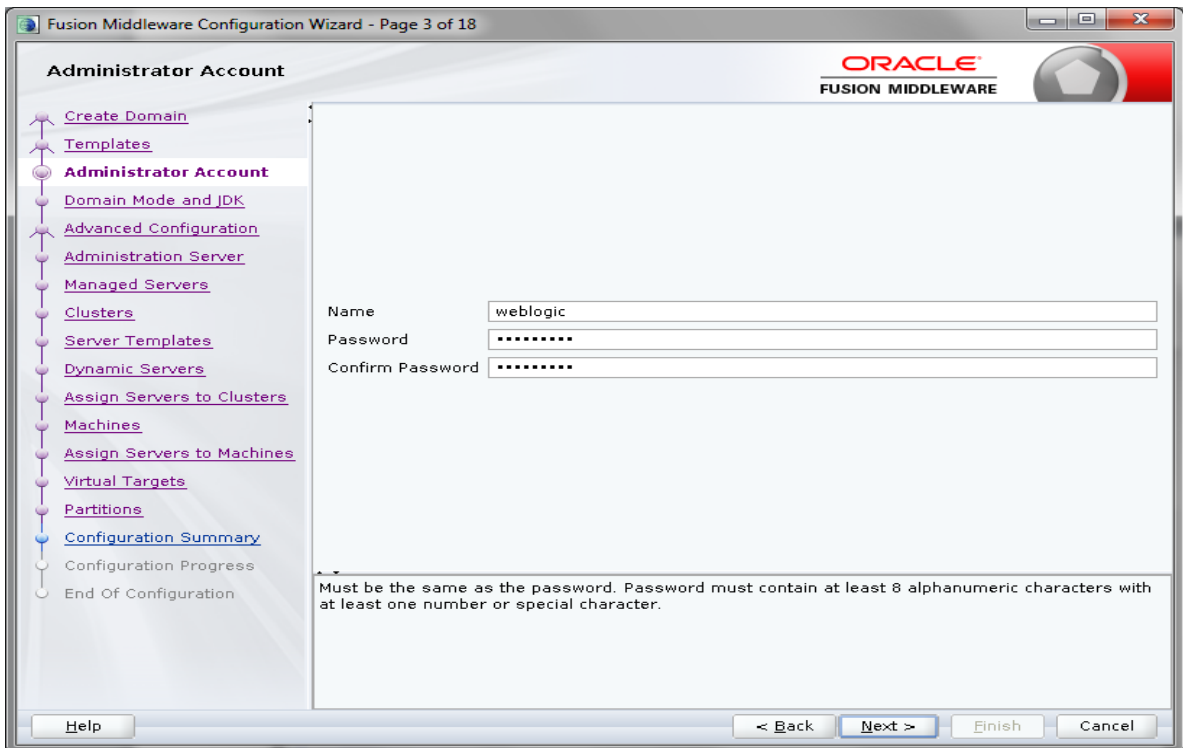
4. Set password and confirm, click **next** to proceed.

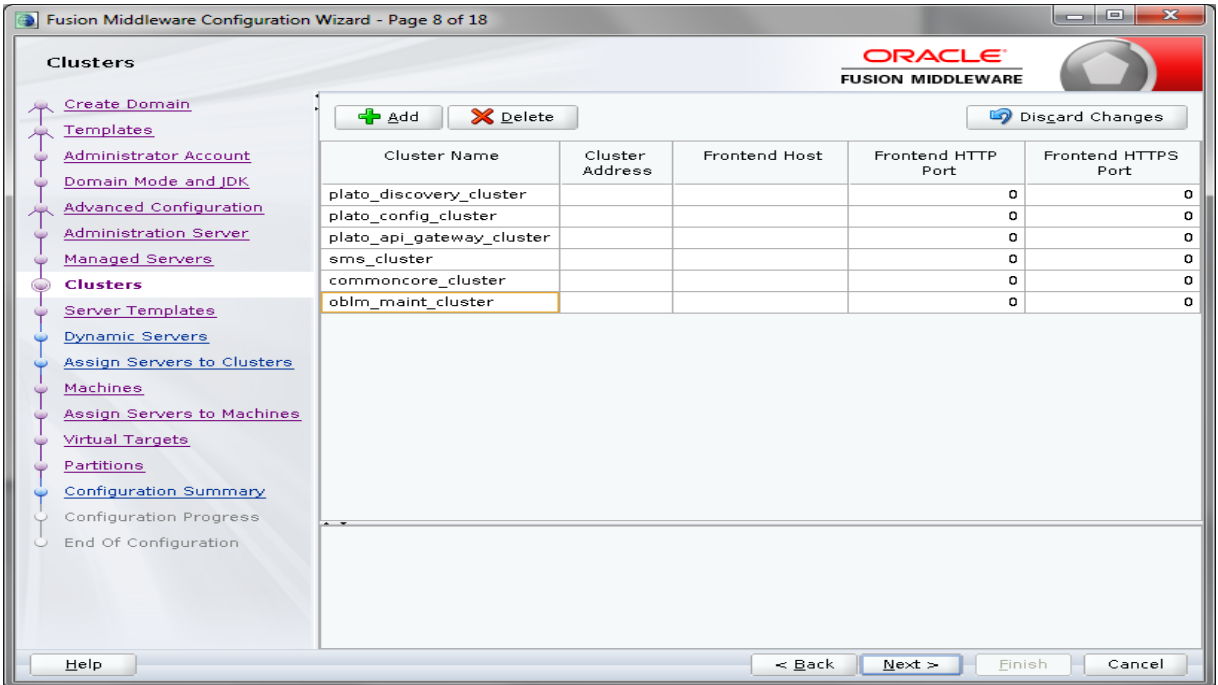5. Select Domain mode as **Production** and select **jdk**.

6. Select **Administration Server** and **Topology** in advanced configurations.


7. Edit the **port** and **host** configurations as required and click **next**. (The server topology given below is an example)
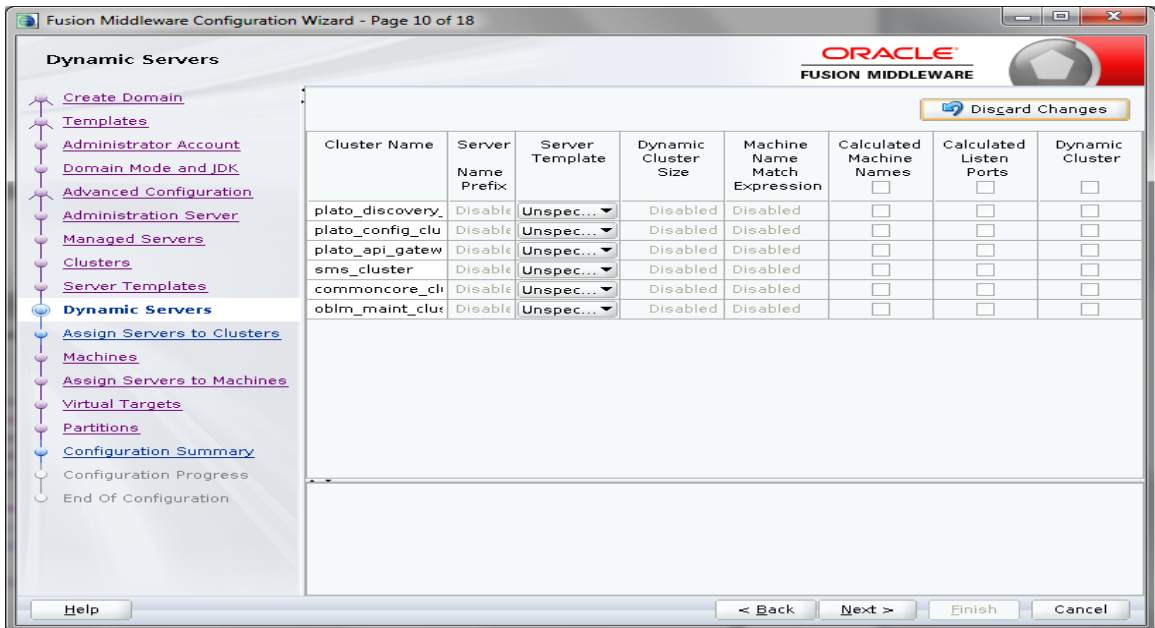
8. Add managed servers, edit listen address and port as required. (The cluster topology given below is an example)
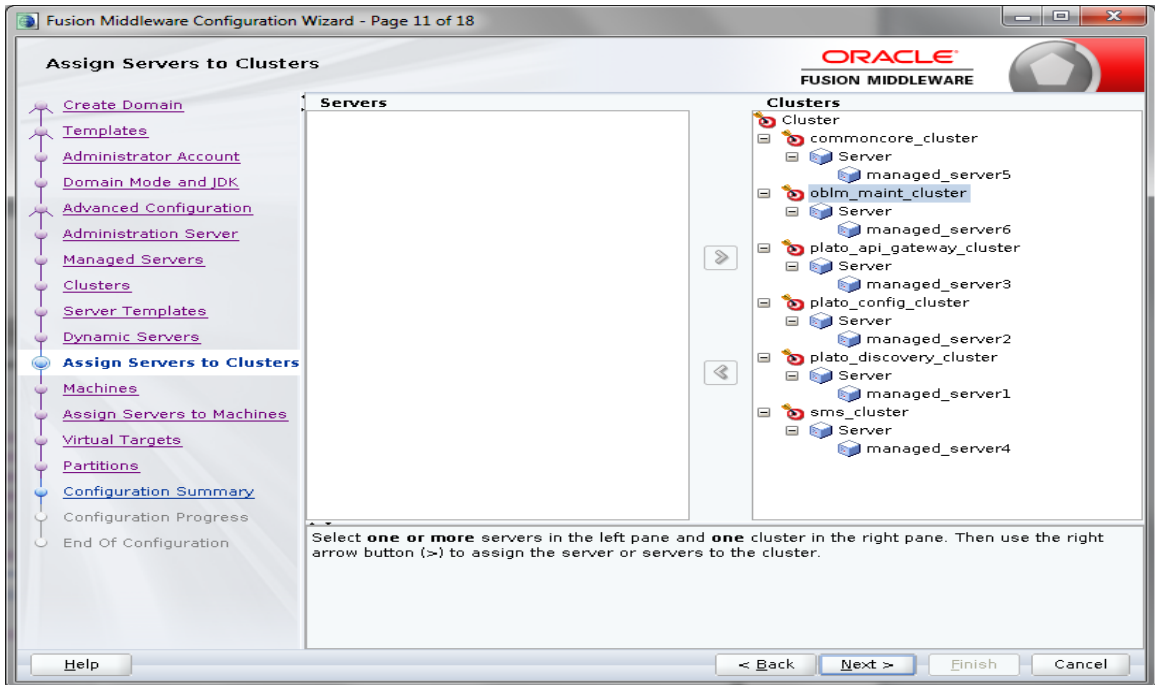

9. Add clusters one for each **managed servers** and name the clusters for example 'discovery_cluster, config_cluster, zipkinui_cluster, gateway_cluster' and click Next.
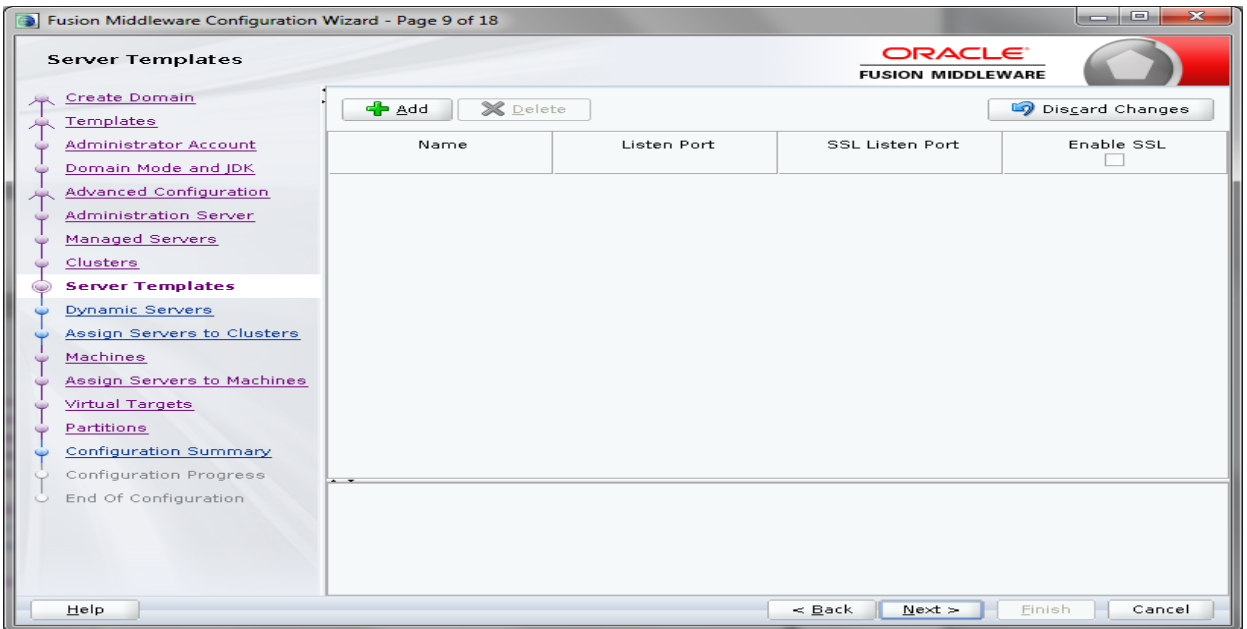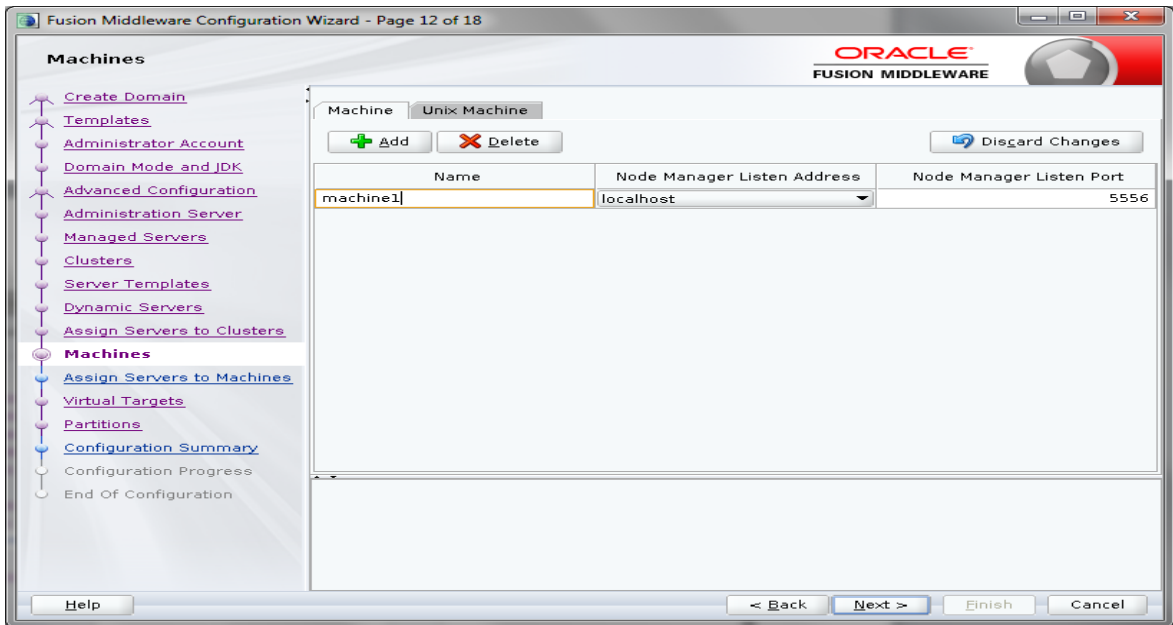

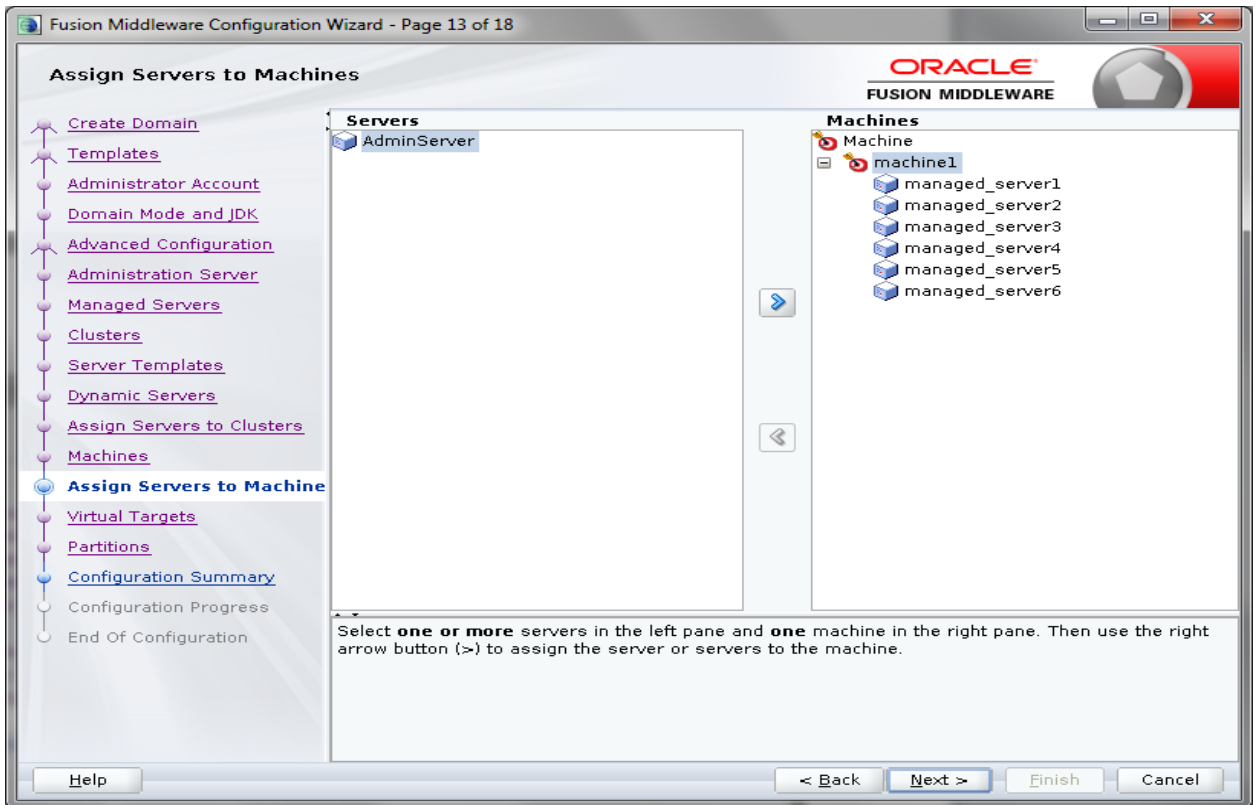10. Skip Server Templates and click Next.

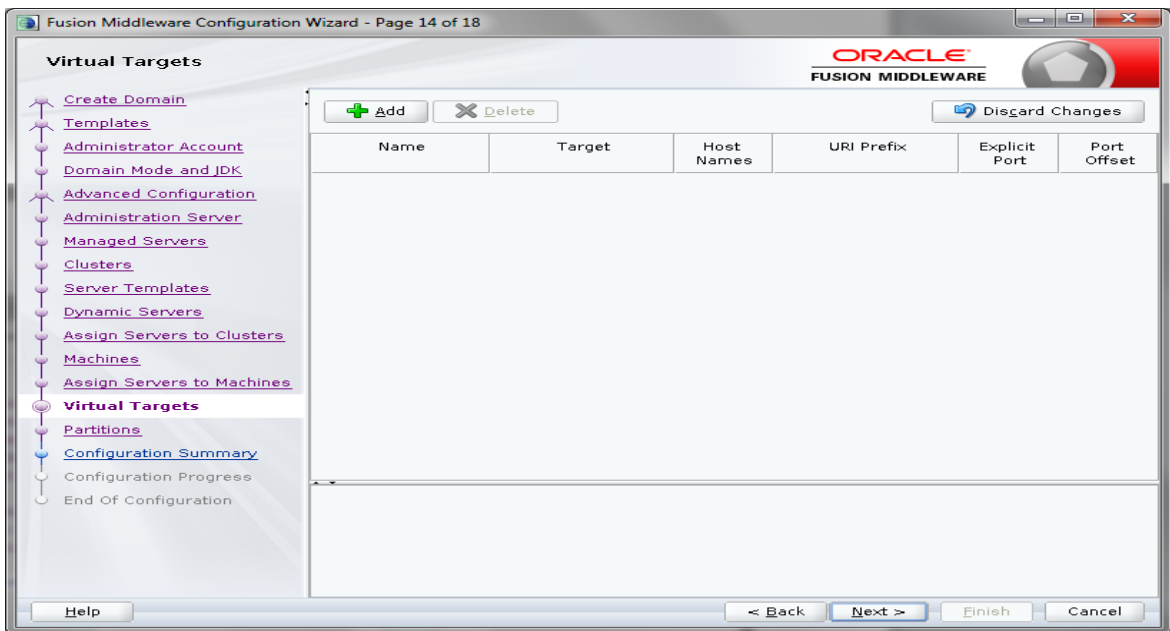11. Skip Dynamic Servers and click Next. (The cluster topology given in the screenshot is an example)

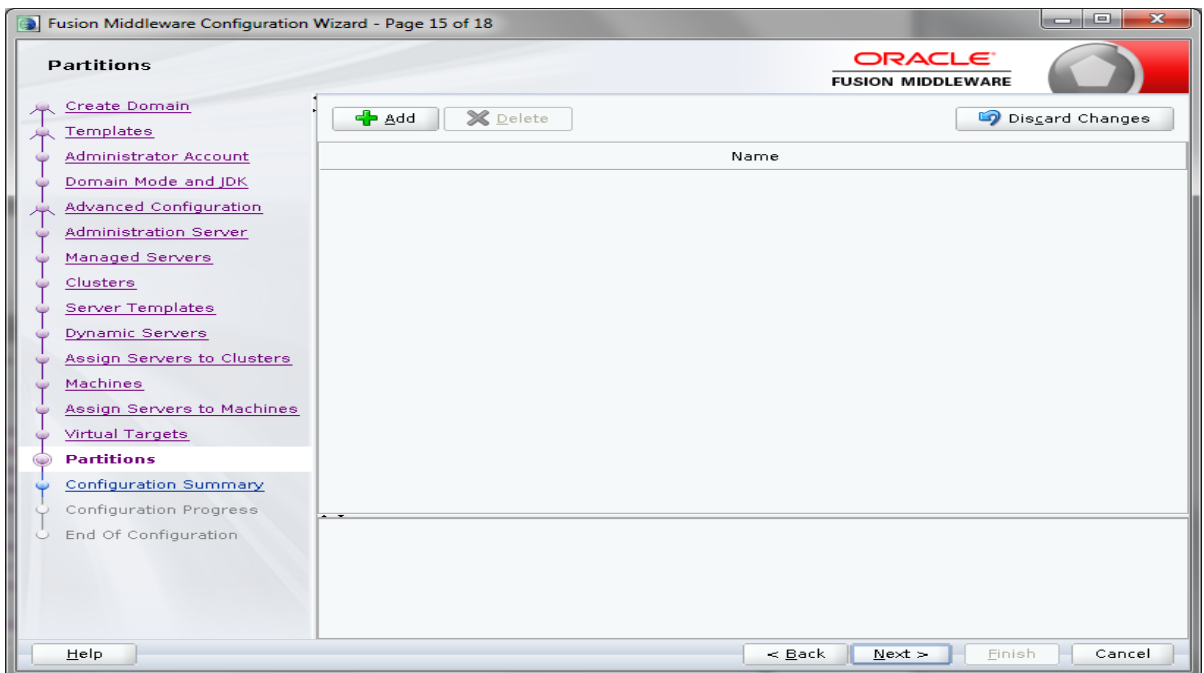12. Assign **clusters with servers.**

13. Add **Machine/Unix Machine** based on operating system and configure name, listen address and node manager port as required.
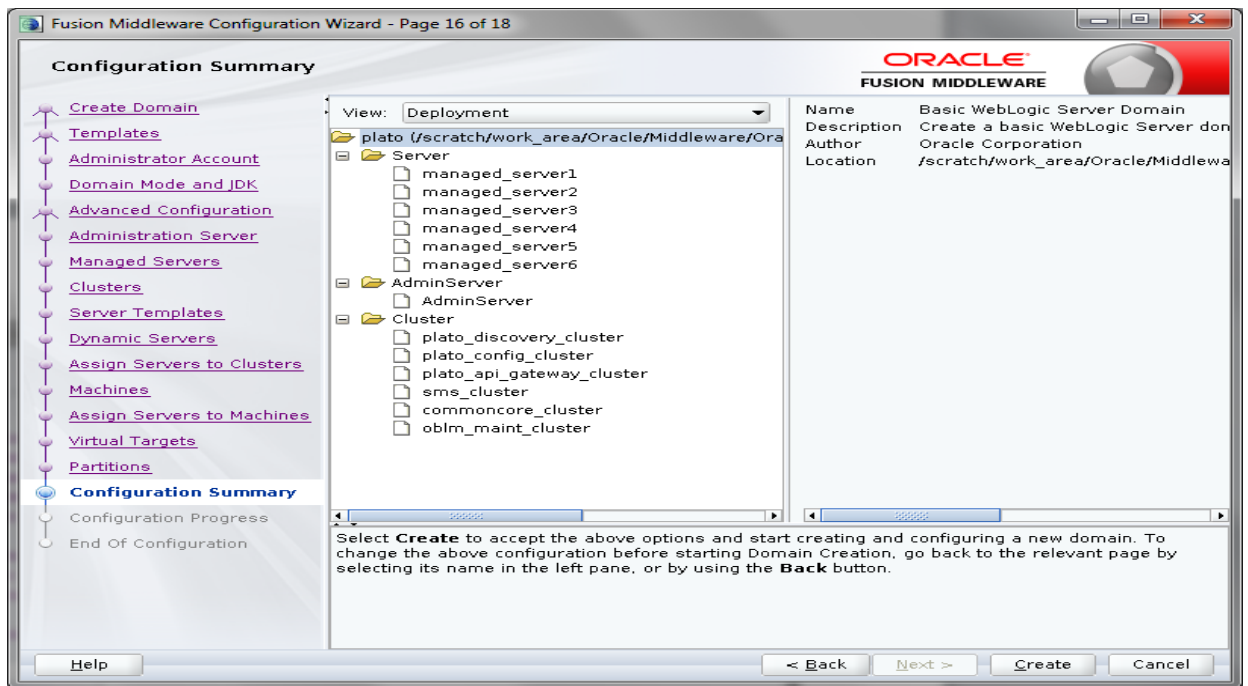
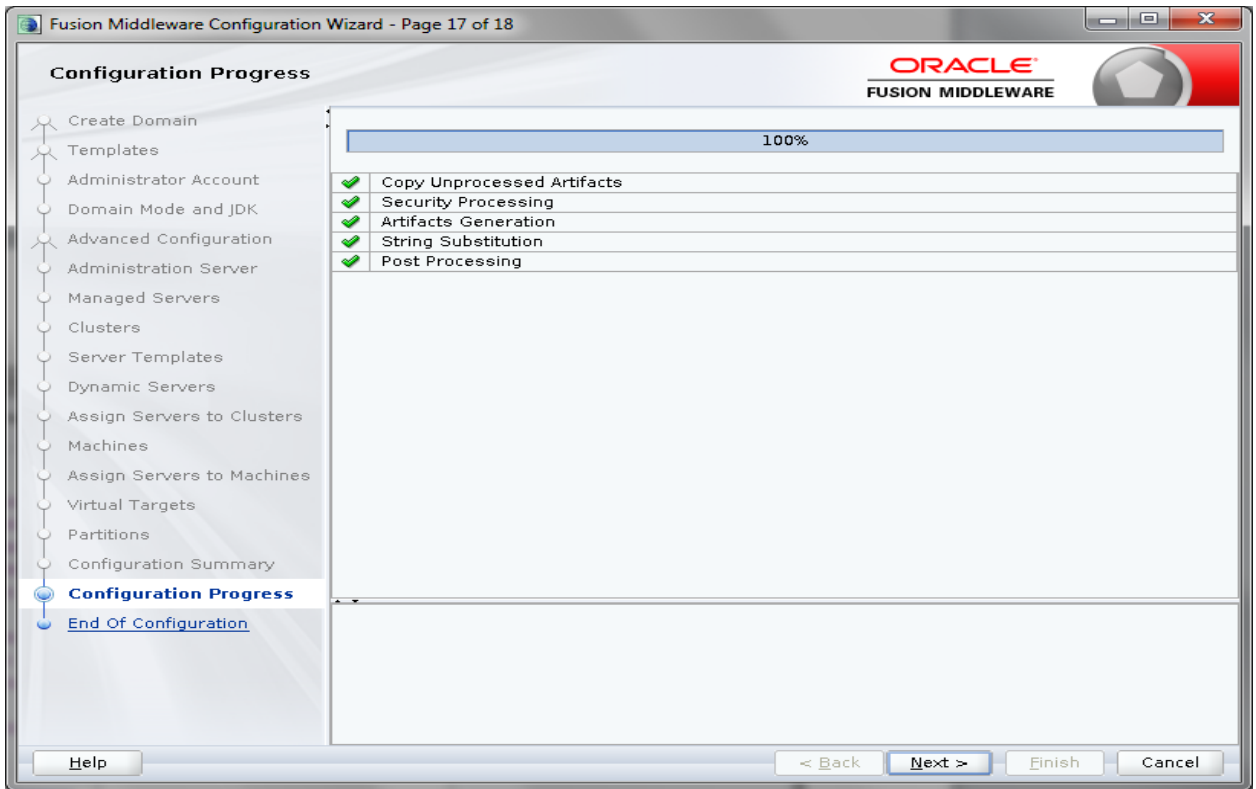14. **Map all managed servers** under the machine created.
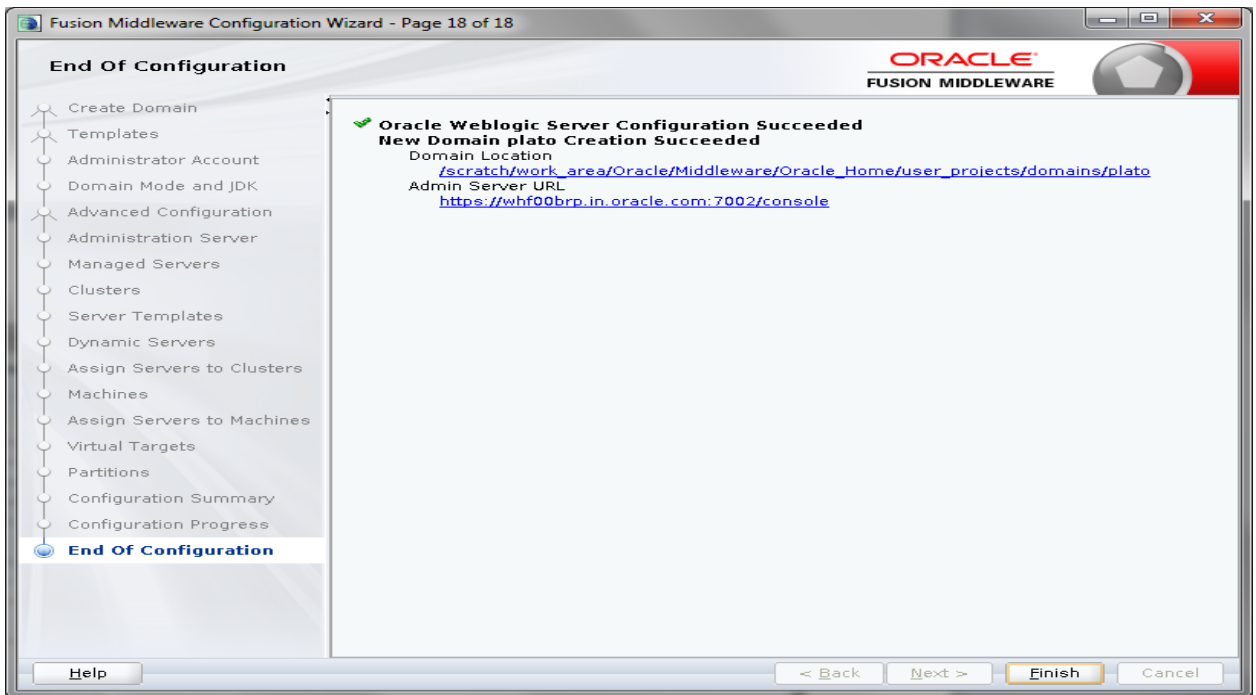

15. Skip Virtual Targets and click Next.

16. Skip Partitions and click Next.

Configuration Summary

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Create Domain
Templates
Administrator Account
Domain Mode and JDK
Advanced Configuration
Administration Server
Managed Servers
Clusters
Server Templates
Dynamic Servers
Assign Servers to Clusters
Machines
Assign Servers to Machines
Virtual Targets
Partitions
Configuration Summary
Configuration Progress
End Of Configuration

View: Deployment

plato (/scratch/work_area/Oracle/Middleware/Ora
Server
    managed_server1
    managed_server2
    managed_server3
    managed_server4
    managed_server5
    managed_server6
AdminServer
    AdminServer
Cluster
    plato_discovery_cluster
    plato_config_cluster
    plato_api_gateway_cluster
    sms_cluster
    commoncore_cluster
    oblm_maint_cluster

Name   Basic WebLogic Server Domain
Description   Create a basic WebLogic Server don
Author   Oracle Corporation
Location   /scratch/work_area/Oracle/Middlewa

Select **Create** to accept the above options and start creating and configuring a new domain. To change the above configuration before starting Domain Creation, go back to the relevant page by selecting its name in the left pane, or by using the **Back** button.

Help   < Back   Next >   Create   Cancel

17. Check the configuration summary and confirm creating domain.

Configuration Progress

ORACLE
FUSION MIDDLEWARE

- Create Domain
- Templates
- Administrator Account
- Domain Mode and JDK
- Advanced Configuration
- Administration Server
- Managed Servers
- Clusters
- Server Templates
- Dynamic Servers
- Assign Servers to Clusters
- Machines
- Assign Servers to Machines
- Virtual Targets
- Partitions
- Configuration Summary
- **Configuration Progress**
- End Of Configuration

100%

✔	Copy Unprocessed Artifacts
✔	Security Processing
✔	Artifacts Generation
✔	String Substitution
✔	Post Processing

Help   < Back   Next >   Finish   Cancel

18. Click Next.

End Of Configuration

ORACLE
FUSION MIDDLEWARE

- Create Domain
- Templates
- Administrator Account
- Domain Mode and JDK
- Advanced Configuration
- Administration Server
- Managed Servers
- Clusters
- Server Templates
- Dynamic Servers
- Assign Servers to Clusters
- Machines
- Assign Servers to Machines
- Virtual Targets
- Partitions
- Configuration Summary
- Configuration Progress
- **End Of Configuration**

✔ **Oracle Weblogic Server Configuration Succeeded**
   New Domain plato Creation Succeeded
      Domain Location
         /scratch/work_area/Oracle/Middleware/Oracle_Home/user_projects/domains/plato
      Admin Server URL
         https://whf00brp.in.oracle.com:7002/console

Help   < Back   Next >   Finish   Cancel

19. Once done click Finish.

1.2.1 Post Domain Creation Configurations

Once finished, refer oracle fusion middleware documents for more details on how to start admin server, node manager and managed servers.

1. Go to /user_projects/domain/plato/bin.
2. Edit setDomainEnv.sh (.cmd if operating system is windows) and, set these java options.
   a. **If SSL is not configured in the application** give the below JAVA_OPTIONS,

   ```
   For the domains other than UI, give the below JAVA_OPTIONS in
   setDomainEnv.sh

       JAVA_OPTIONS="${JAVA_OPTIONS} -
       Dplato.service.logging.path=/scratch/oblm/logs -
       Dplato.service.env=DEV -Dplato.services.config.port=7004 -
       Dplato.services.config.uri=http://whf00ckj.in.oracle.com:7004 -
       Dplato.services.entityservices.port=7007"

       export JAVA_OPTIONS

   For UI where App-shell deployed,

       JAVA_OPTIONS="${JAVA_OPTIONS} -
       Dapigateway.url=http://whf00ckj.in.oracle.com:7005"

       export JAVA_OPTIONS

   In the above JAVA_OPTIONS:

       7004 is the http port of plato-config-service managed server.
       7007 is the http port of sms service managed server.
       7005 is the http port of api gateway managed server.
   ```

   b. If **SSL is configured at API Gateway Level** in the application, give the below JAVA_OPTIONS,

   ```
   For the domains other than UI, give the below JAVA_OPTIONS in
   setDomainEnv.sh

       JAVA_OPTIONS="${JAVA_OPTIONS} -
       Dplato.service.logging.path=/scratch/oblm/logs -Dplato.service.env=DEV
       -Dplato.services.config.port=7504 -
       Dplato.services.config.uri=https://whf00ckj.in.oracle.com:7504 -
       Dplato.services.entityservices.port=7007"

       export JAVA_OPTIONS

   For UI where App-shell deployed,

       JAVA_OPTIONS="${JAVA_OPTIONS} -
       Dapigateway.url=https://whf00ckj.in.oracle.com:7505"


       export JAVA_OPTIONS

   In the above JAVA_OPTIONS:

       7504 is the https port of plato-config-service managed server.
       7007 is the http port of sms service managed server.
       7505 is the https port of api gateway managed server.
   ```

c. If **SSL is configured at Micro Service Level** in the application, give the below JAVA_OPTIONS,

For the domains other than UI, give the below JAVA_OPTIONS in setDomainEnv.sh

```
JAVA_OPTIONS="${JAVA_OPTIONS} -
Dplato.service.logging.path=/scratch/oblm/logs -
Dplato.service.env=DEV -Dplato.services.config.port=7504 -
Dplato.services.config.uri=https://whf00ckj.in.oracle.com:7504 -
Dplato.services.entityservices.port=7507 -
Djndi.resources.prefix=false -
Djavax.net.ssl.trustStore=/scratch/work_area/Oracle/Middleware/Oracl
e_Home/user_projects/key_stores/OBLMTRUSTKeyStore.jks -
Djavax.net.ssl.trustStorePassword=Password1 -
Djavax.net.ssl.keyStore=/scratch/work_area/Oracle/Middleware/Oracle_
Home/user_projects/key_stores/OBLMKeyStore.jks -
Djavax.net.ssl.keyStorePassword=Password1 -
Djavax.net.ssl.HostnameVerifier=false"

export JAVA_OPTIONS
```

For UI domain where App-shell deployed, give the below JAVA_OPTIONS in setDomainEnv.sh

```
JAVA_OPTIONS="${JAVA_OPTIONS} -
Dapigateway.url=https://whf00ckj.in.oracle.com:7505 -
Djavax.net.ssl.trustStore=/scratch/work_area/Oracle/Middleware/Oracl
e_Home/user_projects/key_stores/OBLMTRUSTKeyStore.jks -
Djavax.net.ssl.trustStorePassword=Password1 -
Djavax.net.ssl.keyStore=/scratch/work_area/Oracle/Middleware/Oracle_
Home/user_projects/key_stores/OBLMKeyStore.jks -
Djavax.net.ssl.keyStorePassword=Password1 -
Djavax.net.ssl.HostnameVerifier=false"

export JAVA_OPTIONS
```

```
In the above JAVA_OPTIONS:
    7504 is the https port of plato-config-service managed server.
    7507 is the https port of sms service managed server.
    7505 is the https port of api gateway managed server.
```

**Please change the port in above lines accordingly.

**Check and give valid <u>host address</u> and port numbers. Also create the log path.

d. For Zipkin configuration, Append the below system properties in **JAVA_OPTIONS** in setDomainEnv.sh (.cmd if operating system is windows)

-Dplato.services.logging.config=classpath:/plato-logback.xml

Note 1: This configuration needs to done only for PLATO & OBLM domains and not required for SMS, CMC & UI domains (where appshell is deployed).

-Dplato.services.sleuth.sampler.percentage=1.0

Note 2: It is recommended to set sampling to 0 or 0.1(default) in production environment based on the actual sampling requirement. This configuration should be added in all the domains except UI domain (where appshell is deployed).

e. In case of "plato" domain, add the below line after # SET THE CLASSPATH tag, edit the path before saving.

```
CLASSPATH="${CLASSPATH}${CLASSPATHSEP}/scratch/work_area/Oracle/Middlewar
e/Oracle_Home/oracle_common/modules/oracle.osdt/*"
export CLASSPATH
```

3. Create boot.properties file under /user_projects/domains/XXXXdomainNameXXX/servers/AdminServer/security.
4. Edit boot.properties and give username and password details.

5. Go to /user_projects/domains/plato/bin
6. Run startWeblogic.cmd (or .sh if operating system is linux).
7. Go to /user_projects/domains/plato/nodemanager.
8. Edit nodemanager.properties as required.

```
1   DomainsFile=/scratch/work_area/Oracle/Middleware/Oracle_Home/user_projects/domains/oplm/nodemanager/nodemanager.domains
2   LogLimit=0
3   PropertiesVersion=12.2.1.3.0
4   AuthenticationEnabled=true
5   NodeManagerHome=/scratch/work_area/Oracle/Middleware/Oracle_Home/user_projects/domains/oplm/nodemanager
6   JavaHome=/scratch/jdk1.8.0_181
7   LogLevel=INFO
8   CustomIdentityKeyStorePassPhrase={AES}56JCvFwOcIQ/djCcDfH8gdG4nfmW1813LOqGuKFwk6c=
9   CustomIdentityKeyStoreFileName=/scratch/work_area/Oracle/Middleware/Oracle_Home/user_projects/key_store/OBLMKeyStore.jks
10  DomainsFileEnabled=true
11  ListenAddress=whf00brp.in.oracle.com
12  KeyStores=CustomIdentityAndCustomTrust
13  NativeVersionEnabled=true
14  ListenPort=5556
15  LogToStderr=true
16  weblogic.StartScriptName=startWebLogic.sh
17  SecureListener=true
18  LogCount=1
19  QuitEnabled=false
20  LogAppend=true
21  weblogic.StopScriptEnabled=false
22  StateCheckInterval=500
23  CustomIdentityPrivateKeyPassPhrase={AES}GDKGWe3uoH+NeuR9HizRTZnIk1K5bTeMXtR56rAIAqs=
24  CustomIdentityAlias=selfcert
25  CrashRecoveryEnabled=false
26  CustomIdentityKeyStoreType=JKS
27  weblogic.StartScriptEnabled=true
28  CipherSuites=TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256,TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256
29  LogFile=/scratch/work_area/Oracle/Middleware/Oracle_Home/user_projects/domains/oplm/nodemanager/nodemanager.log
30  LogFormatter=weblogic.nodemanager.server.LogFormatter
31  ListenBacklog=50
32
```

9. Go to /user_projects/domains/plato/bin
10. Run startNodeManager.cmd (or .sh if operating system is linux).
11. Start all managed servers from weblogic console
    http://<hostname>:<adminserver_port_no>/console
12. Make SSL changes (**For SSL setup please refer to SSL_Setup_Guide**).

1.3   How to create Data Sources

1. Start **AdminServer**, **Node Manager** and make sure all the **managed servers** (targets) are in running mode.
2. Login into weblogic console (http://<hostname>:<adminserver_port_no>/console).
3. Go to **Services** > **Datasources** > **New > Generic Datasource.**

4. Click on Lock & Edit.

5. Click on New -> Generic Data Source.

6. Enter **datasource** name and **jndi** name and click **Next.**

7. Select **Thin for Service Connections (Instant)** and click **Next**.

8. Uncheck **support for Global Transactions.**

9. Give **database connection** details and click **Next** to test connection.

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 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 database?

Port:

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?

Password: ••••••••

Confirm Password: ••••••••

Additional Connection Properties:

oracle.jdbc.DRCPConnectionClass:

10. Click Next & test configuration.

Messages

✔ Connection test succeeded.

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: oracle.jdbc.OracleDriver

11. Select **targets** to deploy data source.

12. View created **datasources** and verify **jndi** name and targets.

13. Click **Activate changes** after confirming the details.

1.4 How to Deploy Application

Steps to deploy archives as application on weblogic are same for all except the targeted managed server and domain will differ.

1. Start **AdminServer**, **Node Manager** and make sure all the **managed servers** (targets) are in running mode.
2. Data sources are created.
3. Login into weblogic console (http://<hostname>:<adminserver_port_no>/console).

4. Click on Click **Deployments** > **Lock & Edit**.

5. Click **Install**.

6. Click **Upload your file(s)** to archive, select a file and click N**ext**.
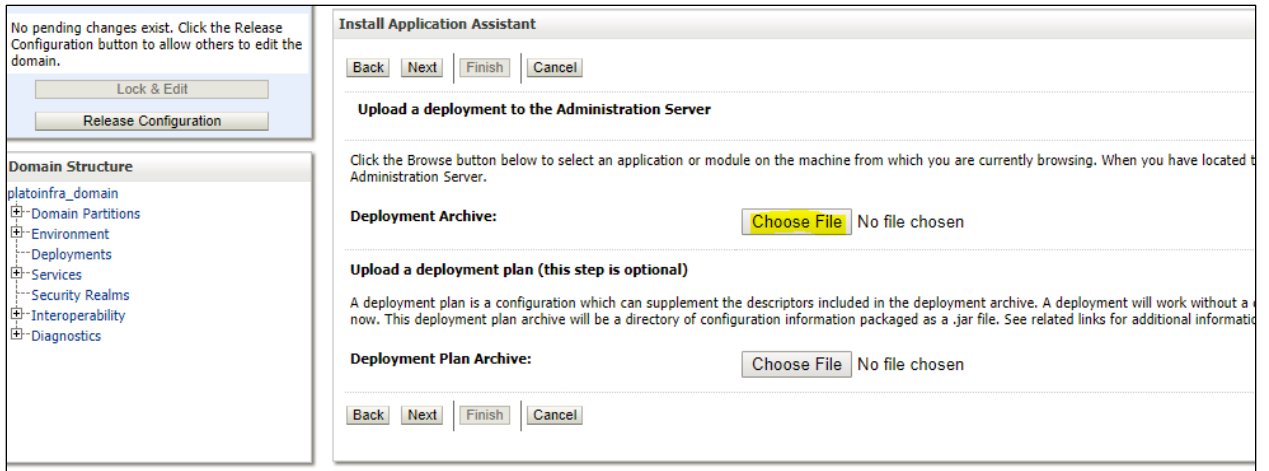
7. After archive is uploaded, click **Next**.
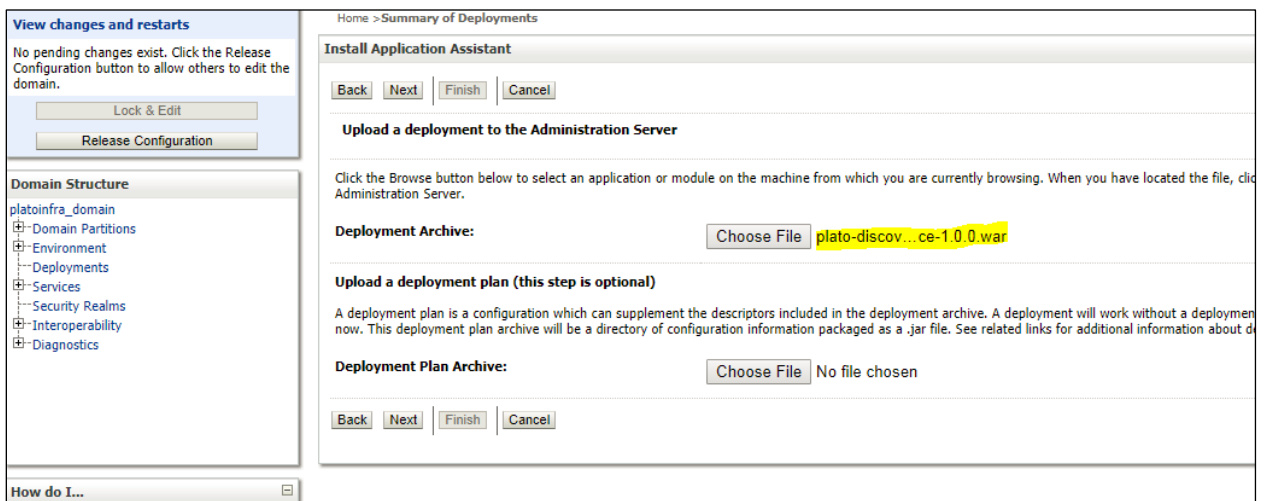
8. Select **Install this deploy as application** and click **Next**.
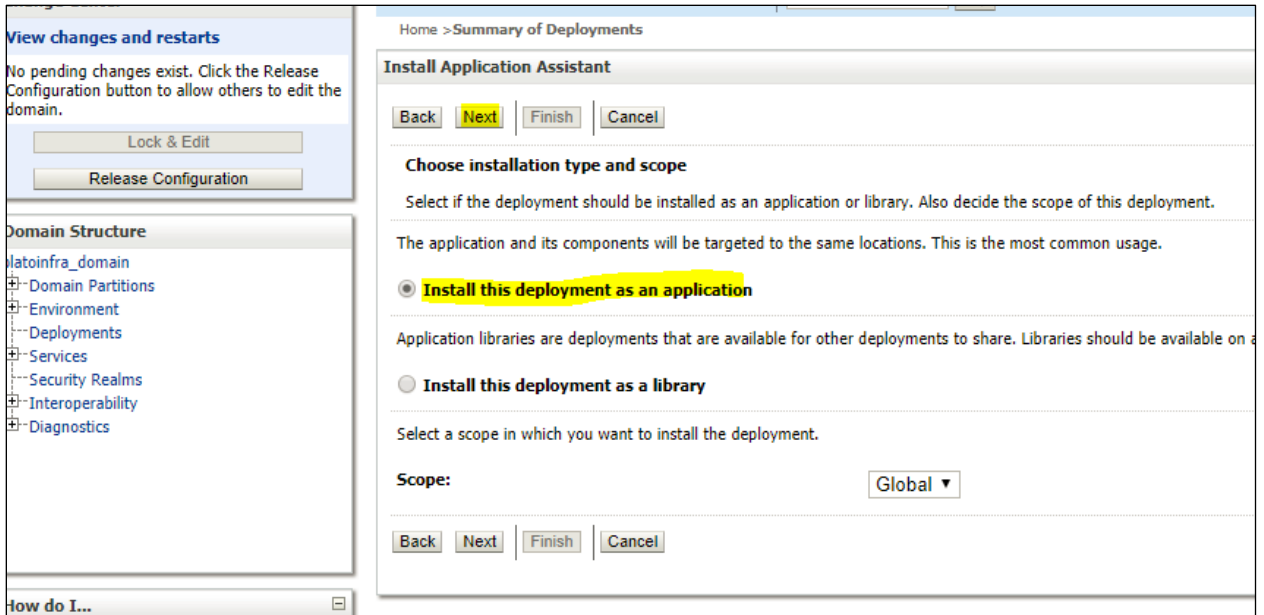
9. Select **target servers/clusters** on which application has to be deployed and the **Next**.

10. Click Next.

11. Click Finish.

12. Click **save and activate** changes.

13. Click **Deployments** > **Control** to changes the state of application from prepared to active status.

14. Under deployment click **Start dropdown** and **Click Start all requests**.

15. Click Yes.

16. You should see status as Active in the state column.

1.5 How to Restart Servers

1. Make sure admin server is running.

2. Login into weblogic console (http://<hostname>:<adminserver_port_no>/console).

3. Go to Environment > Servers.

4. Click **Control**.

5. Select servers to **shutdown.**

6. Click **Yes** to confirm shutdown.

7. A status must appear as illustrated (highlighted).

8. After the shutdown is completed, go to control and select the servers to **start** and click **yes** to **confirm** action.

9. When all requested servers are running, go to deployments and check if deployments are in active state.

1.6   How to compile DDL, SEQ and INC

[Note: These steps are valid, if you are using Oracle Database.]

1. Open Command Prompt.

2. Run the command **sqlplus USERNAME/PASSWORD@HostName:PortNo/ServiceName.**


```
C:\Users\          >sqlplus               @1              /

SQL*Plus: Release 12.2.0.1.0 Production on Mon Jun 11 17:48:59 2018

Copyright (c) 1982, 2016, Oracle.  All rights reserved.

Last Successful login time: Mon Jun 11 2018 17:10:22 +05:30
```

3. Type @ and navigate to your DDL,SEQ or INC folder. Provide a fully qualified address of DDL file.

Example:

@C:\OBLM_14.2.0.0.0\PLATO\plato-api-gateway\DB\DOMAIN\DDL\APP_USER.DDL

@C:\OBLM_14.2.0.0.0\PLATO\plato-ui-config-service\DB\DOMAIN\SEQ\PRODUCT_LEDGER_ID_SEQ.SEQ

@C:\OBLM_14.2.0.0.0\PLATO\plato-api-gateway\DB\DOMAIN\INC\SECURITY_CONFIG_001.INC

1.7   Checking Port Number

1. Login to WebLogic console using user ID and password.

2. Click **Environment** and **Server.**

Under Servers (Filtered - More Columns Exist) section you will be able to see all the server listed.
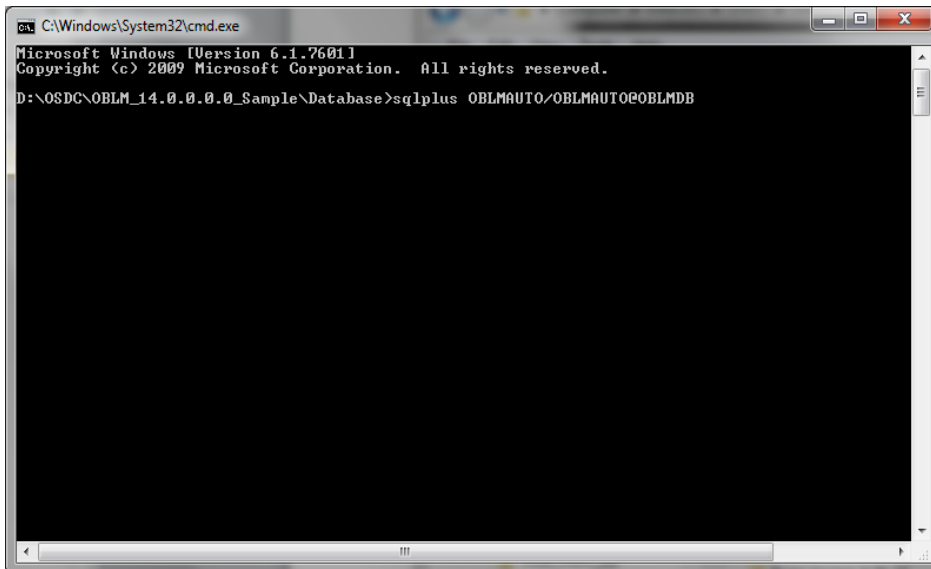
	Name ⌃	Type	Cluster	Machine	State	Health	Listen Port
☐	AdminServer(admin)	Configured			RUNNING	✔ OK	7020
☐	managed_server1	Configured		Machine1	RUNNING	✔ OK	7023

1.8 <u>Executing PLB Files</u>

1. Go to OSDC package folder where the file to be run is present.
2. Open command prompt as administrator.
3. **Run the following command:**
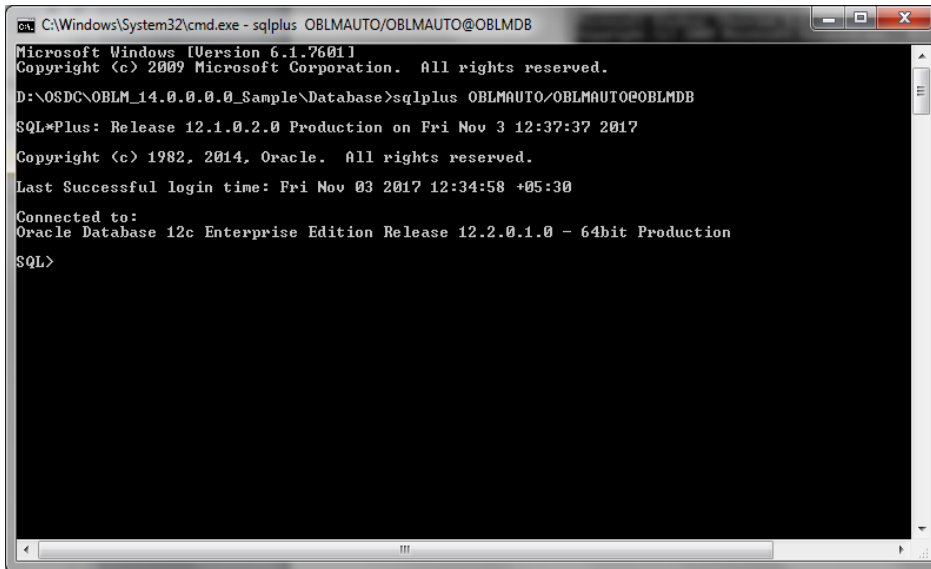
   1. sqlplus <username>/<password>@<schema_name>

(To run the *sqlplus* command you should have the Oracle Database Client installed in your machine)

4. Execute the file by running the following command,

   @<file_name>.plb

   For ex. @plato_db_setup.plb

1.9 How to create Database Schema

1. Create the database schemas using sys account of DB.

   Example:

   CREATE TABLESPACE OBLM142AUTPLATO DATAFILE '/scratch/oraofss/OracleDB12c/app/oradata/OBLMDB/OBLM142AUTPLATO.DBF' SIZE 50M AUTOEXTEND ON MAXSIZE UNLIMITED EXTENT MANAGEMENT LOCAL UNIFORM SIZE 1M;

   CREATE USER OBLM142AUTPLATO IDENTIFIED BY OBLM142AUTPLATO DEFAULT TABLESPACE OBLM142AUTPLATO TEMPORARY TABLESPACE TEMP QUOTA UNLIMITED ON OBLM142AUTPLATO;

2. Provide the following grants to the created schemas.

Schema	Grants
PLATO	GRANT CREATE SESSION TO <SCHEMA_NAME>;
PLATOSEC	GRANT CREATE TABLE TO <SCHEMA_NAME>;
SMS	GRANT CREATE VIEW TO <SCHEMA_NAME>; GRANT CREATE SYNONYM TO <SCHEMA_NAME>;
COMMONCORE	GRANT CREATE SEQUENCE TO <SCHEMA_NAME>;
OBLM-BATCH-SERVICES	GRANT CREATE PROCEDURE TO <SCHEMA_NAME>; GRANT CREATE TRIGGER TO <SCHEMA_NAME>;
OBLM-BCM-SERVICES	GRANT CREATE TYPE TO <SCHEMA_NAME>;
OBLM-CASH-CONCENTRATION-SERVICES	GRANT CREATE ANY SYNONYM TO <SCHEMA_NAME>; GRANT SELECT ANY TABLE TO <SCHEMA_NAME>;
OBLM-DASHBOARD-SERVICES	
OBLM-INTEGRATION-SERVICES	
OBLM-INTEREST-SERVICES	
OBLM-MAINTENANCE-SERVICES	
OBLM-POOL-SERVICES	
OBLM-REPORT-SERVICES	
OBLM-STRUCTURE-SERVICES	
OBLM-SWEEP-SERVICES	
OBLM-IC-SERVICES	GRANT EXECUTE ON DBMS_SQL TO <SCHEMA_NAME>;

	GRANT EXECUTE ON DBMS_LOCK TO <SCHEMA_NAME>; GRANT EXECUTE ON DBMS_JOB TO <SCHEMA_NAME>; GRANT EXECUTE ON DBMS_ALERT TO <SCHEMA_NAME>; GRANT EXECUTE ON DBMS_REFRESH TO <SCHEMA_NAME>; GRANT EXECUTE ON DBMS_PIPE TO <SCHEMA_NAME>; GRANT EXECUTE ON DBMS_SHARED_POOL TO <SCHEMA_NAME>; GRANT EXECUTE ON DBMS_APPLICATION_INFO TO <SCHEMA_NAME>; GRANT EXECUTE ON UTL_FILE TO <SCHEMA_NAME>; GRANT CREATE SESSION TO <SCHEMA_NAME>; GRANT CREATE SYNONYM TO <SCHEMA_NAME>; GRANT EXECUTE ON DBMS_SHARED_POOL TO <SCHEMA_NAME>; GRANT CREATE VIEW TO <SCHEMA_NAME>; GRANT CREATE SEQUENCE TO <SCHEMA_NAME>; GRANT CREATE TABLE TO <SCHEMA_NAME>; GRANT CREATE PROCEDURE TO <SCHEMA_NAME>; GRANT CREATE TRIGGER TO <SCHEMA_NAME>; GRANT CREATE TYPE TO <SCHEMA_NAME>; GRANT CREATE LIBRARY TO <SCHEMA_NAME>; GRANT CREATE DATABASE LINK TO <SCHEMA_NAME>; GRANT CREATE ANY SYNONYM TO <SCHEMA_NAME>; GRANT SELECT ANY TABLE TO <SCHEMA_NAME>; GRANT EXECUTE ON DBMS_SHARED_POOL TO <SCHEMA_NAME>; GRANT ALL ON DBMS_AQADM TO <SCHEMA_NAME>; GRANT ALL ON DBMS_AQ TO <SCHEMA_NAME>;

	GRANT AQ_ADMINISTRATOR_ROLE TO <SCHEMA_NAME>;
	GRANT AQ_USER_ROLE TO <SCHEMA_NAME>;
	GRANT IMP_FULL_DATABASE TO <SCHEMA_NAME>;
	GRANT EXECUTE ON DBMS_MONITOR TO <SCHEMA_NAME>;
	GRANT ALL ON REDACTION_POLICIES TO <SCHEMA_NAME>;
	GRANT ALL ON REDACTION_COLUMNS TO <SCHEMA_NAME>;
	GRANT ALL ON DBMS_REDACT TO <SCHEMA_NAME>;

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Annexure
Oracle Banking Liquidity Management
Version 14.2.0.0.0
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