Configuration and Deployment Guide Oracle Banking Supply Chain Finance

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1. Configuration and Deployment

1.1 Introduction

This guide is a supporting document for the installation of Oracle Banking Microservices Architecture applications. You can find the reference in the respective installation guides.

1.2 Placeholder Update for Oracle Banking Microservices Architecture Services

The Placeholder update can be performed in the following methods:

- Method 1 Via setUserOverrides.sh file
- Method 2 Via passing the -D params in the Server start argument
- Method 3 Using env files and setUserOverrides.sh file
- Method 4 Via Workflow creation in Plato O

1.2.1 Method 1 – Via setUserOverrides.sh file

Perform the following steps:

- 1. Create a file called **setUserOverrides.sh** inside the Weblogic bin location.
- 2. The following formats of the **setUserOverrides.sh** file and the list of parameters that need to be passed in order to run Oracle Banking Microservices Architecture services properly.

NOTE: Below are the list of **-D params** (ENV Variables) which needs to be set for all the individual services. Set a single **-Dparam** as follows:

```
JAVA_OPTIONS="${JAVA_OPTIONS} -DParam =<ParamValue>" export JAVA_OPTIONS
```

//Common Properties

- -Dplato.services.config.port= <CONFIG SERVICE PORT>
- -Dplato.services.config.uri=

http://<CONFIG SERVICE HOSTNAME>:<CONFIG SERVICE PORT>

-Deureka.client.serviceUrl.defaultZone=

http://<DISCOVERY_SERVICE_HOST>:<DISCOVERY_SERVICE_PORT>/plato-discovery-service/eureka

- -Dplato.services.entityservices.port= <PLATO_ORCH_SERVICE_PORT>
- -Dplato.service.logging.path= <LOGGING PATH>
- -Dspring.cloud.loadbalancer.ribbon.enabled=false
- -Dspring.main.allow-circular-references=true

//Flyway Common Placeholders

- -Dflyway.domain.placeHolders.eureka.host= <DISCOVERY_SERVICE_HOST>
- -Dflyway.domain.placeHolders.eureka.port= <DISCOVERY SERVICE PORT>
- -Dflyway.domain.placeHolders.plato-api-gateway.server.port= <API GATEWAY PORT>
- -Dflyway.domain.placeHolders.zipkin.host= <ZIPKIN HOSTNAME>



-Dflyway.domain.placeHolders.zipkin.port= <ZIPKIN PORT>

//SMS - Needed for other services also

- -Dflyway.domain.placeHolders.sms.username= <SMS_SCHEMA_USERNAME>
- -Dflyway.domain.placeHolders.sms.password= <SMS SCHEMA PASSWORD>
- -Dflyway.domain.placeHolders.sms.jdbcUrl= <SMS_SCHEMA URL>
- -Dflyway.domain.placeHolders.sms.schemas= <SMS SCHEMA NAME>

//Plato Config Service - Needed for other services also

- -Dflyway.domain.placeHolders.plato-config.username= <PLATO_DB_USERNAME>
- -Dflyway.domain.placeHolders.plato-config.password= <PLATO_DB_PASSWORD>"
- -Dflyway.domain.placeHolders.plato-config.jdbcUrl= <PLATO_DB_URL>
- -Dflyway.domain.placeHolders.driver.className= oracle.jdbc.driver.OracleDriver
- -Dflyway.domain.placeHolders.plato-config.schemas= <PLATO DB SCHEMANAME>

//Plato Api Gateway - Needed for other services also

- -Dflyway.domain.placeHolders.api-gateway.username=
- <SECURITY DB USERNAME>
- -Dflyway.domain.placeHolders.api-gateway.password=
- <SECURITY_DB_PASSWORD>
- -Dflyway.domain.placeHolders.api-gateway.jdbcUrl= <SECURITY_DB_URL>
- -Dflyway.domain.placeHolders.api-gateway.schemas= <SECURITY SCHEMANAME>
- -Dflyway.domain.placeHolders.apigateway.host=
- <APIGATEWAY_ROUTER_HOSTNAME>
- -Dflyway.domain.placeHolders.apigateway.port= <APIGATEWAY_ ROUTER _PORT>
- -Dflyway.domain.placeHolders.USER.STORE= <USER.STORE>
- -Dflyway.domain.placeHolders.LDAP.CORS.allowed.origin= <LDAP_CORS>
- -Dflyway. domain. place Holders. LDAP. credential. SALT =
- <LDAP CREDENTIALS SALT>
- -Dflyway.domain.placeHolders.JWT.EXPIRY.seconds= <JWT_EXPIRY_SECONDS>
- -Dflyway.domain.placeHolders.LDAP.url = <LDAP SERVER URL >
- -Dflyway.domain.placeHolders.LDAP.userId = <LDAP SERVER USER>
- -Dflyway.domain.placeHolders.LDAP.server.base = <LDAP_SERVER_BASE>
- -Dflyway.domain.placeHolders.LDAP.server.credential = <LDAP CREDENTIALS>
- -Dflyway.domain.placeHolders.LDAP.usersearch.base = <LDAP USER BASE>
- -Dflyway.domain.placeHolders LDAP.user.prefix = <LDAP_USER_PREFIX>
- -Dflyway.domain.placeHolders.LDAP.provider = <LDAP PROVIDER>
- -Dflyway.domain.placeHolders.TOKEN.autoregenerate =
- <TOKEN_AUTOREGENERATION>
- -Dflyway.domain.placeHolders.SSO.enabled = <SSO ENABLED>
- -Dflyway.domain.placeHolders.TOKEN.regeneration.enabled =
- <TOKEN_ALWAYSNEW_GENERATION >
- -Dplato-api-gateway.enableAudit=true



//Plato Discovery Service

-Dflyway.domain.placeHolders.plato-discoveryservice.server.port=<DISCOVERY_SERVICE_PORT>

//Plato UI-Config Services

- -Dflyway.domain.placeHolders.plato-ui-configservices.server.port=<UICONFIG_SERVICE_PORT>
- -Dflyway.domain.placeHolders.plato-uiconfig.username=<UICONFIG SCHEMA USERNAME>
- -Dflyway.domain.placeHolders.plato-ui-config.password=<UICONFIG_SCHEMA_PASSWORD>
- -Dflyway.domain.placeHolders.plato-ui-config.jdbcUrl=<UICONFIG_SCHEMA_URL>
- -Dflyway.domain.placeHolders.plato-uiconfig.schemas=<UICONFIG SCHEMA NAME>

//Plato Apigateway Router Service

- -Dflyway.domain.placeHolders.plato-apigateway-router.server.port= <APIGATEWAY ROUTER PORT>
- -Dflyway.domain.placeHolders.plato-apigateway router.router.protocol=<ROUTER PROTOCOL>
- -Dflyway.domain.placeHolders.plato-apigateway-router.router.meadmin.port=<ROUTER_PORT>

//Plato Feed Services

- -Dflyway.domain.placeHolders.plato-feedservices.feed.upload.directory=<FEED_SERVICE_UPLOAD_PATH>
- -Dflyway.domain.placeHolders.plato-feedservices.server.port=<FEED_SERVICE_PORT>
- -Dflyway.domain.placeHolders.plato-feedservices.username=<FEED_DB_USERNAME>
- -Dflyway.domain.placeHolders.plato-feedservices.password=<FEED DB PASSWORD>
- -Dflyway.domain.placeHolders.plato-feed-services.jdbcUrl=<FEED DB URL>
- -Dflyway.domain.placeHolders.plato-feedservices.schemas=<FEED_SCHEMA_NAME>

//Plato Batch Server

- -Dflyway.domain.placeHolders.plato-batchserver.server.port=<BATCH_SERVER_PORT>
- -Dflyway.domain.placeHolders.plato-batchserver.plato.eventhub.kafka.brokers=<EVETNHUB KAFKA BROKERS>
- -Dflyway.domain.placeHolders.plato-batchserver.plato.eventhub.zk.nodes=<ZK_NODES>
- -Dflyway.domain.placeHolders.plato-batchserver.username=<BATCH_SCHEMA_USERNAME>
- -Dflyway.domain.placeHolders.plato-batchserver.password=<BATCH_SCHEMA_PASSWORD>



- -Dflyway.domain.placeHolders.plato-batch-server.jdbcUrl=<BATCH SCHEMA URL>
- -Dflyway.domain.placeHolders.plato-batchserver.schemas=<BATCH_SCHEMA_NAME>

// Plato-Alerts-Management-Services

- -Dflyway.domain.placeHolders.plato-alerts-management-services.server.port=<ALERTS-MANAGEMENT-SERVER-PORT>
- -Dflyway.domain.placeHolders.plato-alerts-managementservices.plato.eventhub.kafka.brokers=<EVETNHUB KAFKA BROKERS>
- -Dflyway.domain.placeHolders.plato-alerts-managementservices.plato.eventhub.zk.nodes=<ZK_NODES>
- -Dflyway.domain.placeHolders.plato-alerts-management-services.username=<ALERTS SCHEMA USERNAME>
- -Dflyway.domain.placeHolders.plato-alerts-management-services.password=<ALERTS SCHEMA PASSWORD>
- -Dflyway.domain.placeHolders.plato-alerts-management-services.jdbcUrl=<ALERTS SCHEMA URL>
- -Dflyway.domain.placeHolders.plato-alerts-managementservices.schemas=<ALERTS_SCHEMA_NAME>

//Plato Orch Service

- -Dflyway.domain.placeHolders.plato-orchservice.server.port=<ORCH_SERVICE_PORT>
- -Dflyway.domain.placeHolders. plato-orchestrator.hostname=<CONDUCTOR-EUREKA-HOSTNAME >

//Conductor

-Dconductor.properties=<CONDUCTOR_CONFIG_FILE_PATH>

//Plato Regional Configurator Service

- -Dflyway.domain.placeHolders.plato-regional-configuratorservices.server.port=<REGIONAL CONFIGURATOR SERVICE PORT>
- -Dflyway.domain.placeHolders.plato-regional-configurator-services.locations =
 - "db/migration/domain/obrc" (By default)
 - "db/migration/domain/obrc, db/migration/domain<YOUR DOMAINS>"
- -Dflyway.domain.placeHolders.plato-regional-configurator-services.schemas = "OBRC"
- -Dflyway.domain.placeHolders.plato-regional-configurator-services.db.jndi = "jdbc/OBRC"
- -Dflyway.domain.placeHolders. plato-regional-configuratorservices.username=<OBRC SCHEMA USERNAME>
- -Dflyway.domain.placeHolders. plato-regional-configurator-services.password=<OBRC_SCHEMA_PASSWORD>

//Common core NLP services

-Dflyway.domain.placeholders.cmc-nlp-annotator-

services.server.port=<CMC_NLP_ANNOTATOR_SERVICES_PORT>



- -Dflyway.domain.placeholders.cmc-nlp-dashboard-widget-
- services.server.port=<CMC_NLP_DASHBOARD_SERVICES_PORT>
- -Dflyway.domain.placeholders.cmc-nlp-model-mngmnt-
- services.server.port=<CMC_NLP_MODEL_MANGEMENT_PORT>
- -Dflyway.domain.placeholders.cmc-nlp-online-processing-
- services.server.port=<CMC_NLP_ONLINE_PROCESSING_PORT>
- -Dflyway.domain.placeholders.cmc-nlp-tag-maint-
- services.server.port=<CMC_NLP_TAG_MAINTENANCE_PORT>
- -Dflyway.domain.placeholders.cmc-nlp-text-extraction-
- services.server.port=<CMC_NLP_TEXT_EXTRACTION_PORT>
- -Dflyway.domain.placeholders.cmc-nlp-txn-log-
- services.server.port=<CMC NLP TXN LOG SERVICES PORT>
- -Dflyway.domain.placeholders.cmc-nlp-util-
- services.server.port=<CMC_NLP_UTIL_SERVICES_PORT>

// Common core NLP Poller service

- -Dflyway.domain.placeholders.cmc-fc-ai-ml-services.server.port=<Server_Port>
- -Dflyway.domain.placeholders.cmc-fc-ai-ml-
- services.server.postingPath=<Posting_Path>
- -Dflyway.domain.placeholders.cmc-fc-ai-ml-services.server.pollingPath=<Polling Path>
- -Dflyway.domain.placeholders.cmc-fc-ai-ml-
- services.server.pollingEmail=<Polling Email>
- -Dflyway.domain.placeholders.cmc-fc-ai-ml-
- services.server.emailServerHost=<Email Server Host>
- -Dflyway.domain.placeholders.cmc-fc-ai-ml-
- services.server.emailServerPort=<Email_Server_PORT>
- -Dflyway.domain.placeholders.cmc-fc-ai-ml-
- services.server.pollingFrequency=<Polling Frequency>
- -Dflyway.domain.placeholders.cmc-fc-ai-ml-



services.server.pollerInitialDelay=<Poller_Initial_Delay>

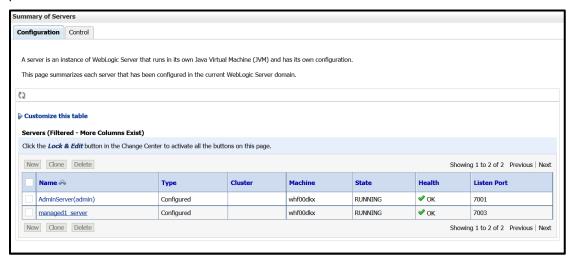
-Dflyway.domain.placeholders.cmc-fc-ai-ml-

services.server.emailPassword=<Poller_Email_Password>

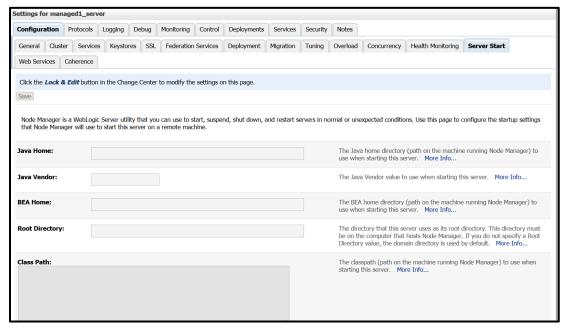
1.2.2 <u>Method 2 – Via passing the -D params in the Server start argument</u>

All the above mentioned -D parameters can be passed through the Server start argument in respective managed server. Perform the following steps:

1. Navigate to the Server **Configuration** tab and click managed server to which you want to pass the values.

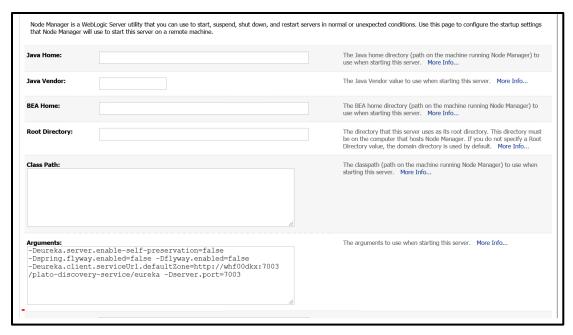


2. Select Server Start tab in the next screen.



3. Edit the **Arguments** field and pass all the environment parameters required for the service to run.





4. Save the configuration and restart the managed server. After you restart, the service can be started or deployed properly.



1.2.3 Method 3 – Using env files and setUserOverrides.sh file

Perform the following steps:

1. Copy the setUserOverrides.sh file to each of the <domain>/bin folder. The example of the file is given below: #!/bin/bash # shellcheck disable=SC1090 # Common functions set -e -x config file="" PLATO CONFIG MANAGED SERVER NAME="" # This file is used only for PLATO-CONFIG service plato_config_file="\${DOMAIN_HOME}/bin/plato-config-deploy.env" # This file is used for rest of the services domain_config_file="\${DOMAIN_HOME}/bin/domain-config-deploy.env" if [-f "\$plato_config_file"]; then PLATO CONFIG MANAGED SERVER NAME='cat \${DOMAIN HOME}/bin/platoconfig-deploy.env | grep "PLATO_CONFIG_MANAGED_SERVER_NAME" | cut -d'=' -f2` fi if["\${SERVER NAME}" = "\${PLATO CONFIG MANAGED SERVER NAME}"]; then # This will get executed only for Plato-config service entries config_file="\${plato_config_file}" else # This will get executed for all other services config_file="\${domain_config_file}" fi if [-f "\$config_file"] then while read -r prop || [-n "\$prop"] do case "\$prop" in \#*) continue ;; esac if [-z "\${prop}"]; then continue else PLACEHOLDERS=\${PLACEHOLDERS}" "\$(echo -D\$prop) PLACEHOLDERS="\${PLACEHOLDERS}"



fi

```
done < "$config_file"
else
    echo "$config_file not found. please provide the property file to set -D parameter"
    exit 1
fi

PLACEHOLDERS="${PLACEHOLDERS}"

JAVA_OPTIONS="${JAVA_OPTIONS}${PLACEHOLDERS}"

export JAVA_OPTIONS
echo "${JAVA_OPTIONS}"</pre>
```

Place the env files containing all the key value pairs of the -D params in the respective <domain>/env folder.

NOTE: The plato-config-deploy.env file contains all the key value pairs specific only to the plato-config-service and need to be placed in the bin folder of the plato-domain. The domain-config-deploy.env file contains the key-value pairs for the rest of the services and should be placed in each <domain>/bin folder.

The sample for each of the files are given below:

plato-config-deploy.env

```
### Managed server name of plato-config service ###
PLATO_CONFIG_MANAGED_SERVER_NAME=
### plato config flyway connection entries ###
flywayTask=migrate
flyway.enabled=true
spring.flyway.enabled=false
plato-config.flyway.domain.db.username=
plato-config.flyway.domain.db.password=
plato-config.flyway.domain.db.jdbcUrl=
plato-config.flyway.domain.schemas=
plato-
config.flyway.domain.locations=db/migration/domain/plato,db/migration/domain/sms,db/migra
tion/domain/cmc,db/migration/domain/obvam
#### Kafka properties for all services ####
flyway.domain.placeholders.plato.eventhub.broker.hosts=
flyway.domain.placeholders.plato.eventhub.zookeper.hosts=
#### Kafka Security for all services ####
flyway.domain.placeholders.plato.eventhub.broker.hosts=
```



flyway.domain.placeholders.plato.eventhub.zookeper.hosts= flyway.domain.placeholders.kafka.ssl.truststore.location= flyway.domain.placeholders.kafka.ssl.truststore.password= flyway.domain.placeholders.kafka.broker.username= flyway.domain.placeholders.kafka.broker.password=

common entries for all services

flyway.domain.placeholders.driver.className=oracle.jdbc.driver.OracleDriver spring.cloud.loadbalancer.ribbon.enabled=false spring.main.allow-circular-references=true

eureka entries for all services
flyway.domain.placeholders.eureka.host=
flyway.domain.placeholders.eureka.port=

zipkin entries for all services
flyway.domain.placeholders.zipkin.host=
flyway.domain.placeholders.zipkin.port=

plato config flyway placeholder entries
flyway.domain.placeholders.plato-config.username=
flyway.domain.placeholders.plato-config.password=
flyway.domain.placeholders.plato-config.jdbcUrl=
flyway.domain.placeholders.plato-config.schemas=
flyway.domain.placeholders.plato-config.sessionIdleTimeout=
flyway.domain.placeholders.plato-config.sessionIdleWarningTime=
flyway.domain.placeholders.plato-config.environment=

plato api-gateway flyway placeholder entries
flyway.domain.placeholders.api-gateway.host=
flyway.domain.placeholders.api-gateway.username=
flyway.domain.placeholders.api-gateway.password=
flyway.domain.placeholders.api-gateway.jdbcUrl=
flyway.domain.placeholders.api-gateway.schemas=
flyway.domain.placeholders.plato-api-gateway.server.port=

plato api-gateway LDAP flyway placeholder entries ### flyway.domain.placeholders.USER.STORE= flyway.domain.placeholders.LDAP.CORS.allowed.origin= flyway.domain.placeholders.LDAP.credential.SALT= flyway.domain.placeholders.JWT.EXPIRY.seconds= flyway.domain.placeholders.LDAP.url= flyway.domain.placeholders.LDAP.userld= flyway.domain.placeholders.LDAP.server.base=



flyway.domain.placeholders.LDAP.server.credential=

flyway.domain.placeholders.LDAP.usersearch.base=

flyway.domain.placeholders.LDAP.user.prefix=

Allowed values for LDAP provider are: EMBEDDED_WEBLOGIC, PLATO

If LDAP is running in weblogic then value should be EMBEDDED_WEBLOGIC

If spring based LDAP(which is run through a jar provided) is used, then the value should be PLATO

flyway.domain.placeholders.LDAP.provider=

flyway.domain.placeholders.TOKEN.autoregenerate=

flyway.domain.placeholders.SSO.enabled=

flyway.domain.placeholders.TOKEN.regeneration.enabled=

plato-ui-config flyway placeholder entries

flyway.domain.placeholders.plato-ui-config.username=

flyway.domain.placeholders.plato-ui-config.password=

flyway.domain.placeholders.plato-ui-config.jdbcUrl=

flyway.domain.placeholders.plato-ui-config.schemas=

flyway.domain.placeholders.plato-ui-config-services.server.port=

flyway.domain.placeholders.apigateway.host=

flyway.domain.placeholders.apigateway.port=

plato-discovery flyway placeholder entries

flyway.domain.placeholders.plato-discovery-service.server.port=

plato-apigateway-router flyway placeholder entries

flyway.domain.placeHolders.plato-apigateway-router.server.port=

flyway.domain.placeHolders.plato-apigateway-router.router.protocol=

flyway.domain.placeHolders.plato-apigateway-router.router.meadmin.port=

plato-orch flyway placeholder entries

flyway.domain.placeholders.plato-orch-service.server.port=

flyway.domain.placeholders.plato-orchestrator.hostname=

plato-feed flyway placeholder entries

flyway.domain.placeholders.plato-feed-services.username=

flyway.domain.placeholders.plato-feed-services.password=

flyway.domain.placeholders.plato-feed-services.jdbcUrl=

flyway.domain.placeholders.plato-feed-services.jndi=jdbc/PLATOFEED

flyway.domain.placeholders.plato-feed-services.schemas=

flyway.domain.placeholders.plato-feed-services.feed.upload.directory=

flyway.domain.placeholders.plato-feed-services.server.port=

plato-batch flyway placeholder entries



flyway.domain.placeholders.plato-batch-server.username=

flyway.domain.placeholders.plato-batch-server.password=

flyway.domain.placeholders.plato-batch-server.jdbcUrl=

flyway.domain.placeholders.plato-batch-server.schemas=

flyway.domain.placeholders.plato-batch-server.server.port=

flyway.domain.placeholders.plato-batch-server.plato.eventhub.kafka.brokers=

flyway.domain.placeholders.plato-batch-server.plato.eventhub.zk.nodes=

flyway.domain.placeholders.plato-batch-server.jndi=jdbc/PLATOBATCH

plato-alerts-management flyway placeholder entries

flyway.domain.placeholders.plato-alerts-management-services.username=

flyway.domain.placeholders.plato-alerts-management-services.password=

flyway.domain.placeholders.plato-alerts-management-services.jdbcUrl=

flyway.domain.placeholders.plato-alerts-management-services.schemas=

flyway.domain.placeholders.plato-alerts-management-services.server.port=

sms flyway placeholder entries

flyway.domain.placeholders.sms-core-services.server.port=

flyway.domain.placeholders.sms.username=

flyway.domain.placeholders.sms.password=

flyway.domain.placeholders.sms.jdbcUrl=

flyway.domain.placeholders.sms.schemas=

cmncore flyway placeholder entries

flyway.domain.placeholders.cmncore.username=

flyway.domain.placeholders.cmncore.password=

flyway.domain.placeholders.cmncore.jdbcUrl=

flyway.domain.placeholders.cmncore.schemas=

flyway.domain.placeholders.cmc-corebanking-adapter-service.server.port=

flyway.domain.placeholders.cmc-currency-services.server.port=

flyway.domain.placeholders.cmc-account-services.server.port=

flyway.domain.placeholders.cmc-base-services.server.port=

flyway.domain.placeholders.cmc-external-virtual-account-services.server.port=

flyway.domain.placeholders.cmc-branch-services.server.port=

flyway.domain.placeholders.cmc-customer-services.server.port=

flyway.domain.placeholders.cmc-external-chart-account-services.server.port=

flyway.domain.placeholders.cmc-external-system-services.server.port=

flyway.domain.placeholders.cmc-advice-services.server.port=

flyway.domain.placeholders.cmc-facilities-services.server.port=

flyway.domain.placeholders.cmc-txn-code-services.server.port=



flyway.domain.placeholders.cmc-settlement-services.server.port= flyway.domain.placeholders.cmc-businessoverrides-services.server.port= flyway.domain.placeholders.cmc-resource-segment-orchestrator-service.server.port= flyway.domain.placeholders.cmc-screenclass-services.server.port= flyway.domain.placeholders.cmc-datasegment-services.server.port= flyway.domain.placeholders.cmc-settlements-services.server.port= flyway.domain.placeholders.cmc-transactioncontroller-services.server.port= flyway.domain.placeholders.cmc-report-services.server.port= flyway.domain.placeholders.cmc-nlp-annotator-services.server.port= flyway.domain.placeholders.cmc-nlp-dashboard-widget-services.server.port= flyway.domain.placeholders.cmc-nlp-model-mngmnt-services.server.port= flyway.domain.placeholders.cmc-nlp-online-processing-services.server.port= flyway.domain.placeholders.cmc-nlp-tag-maint-services.server.port= flyway.domain.placeholders.cmc-nlp-text-extraction-services.server.port= flyway.domain.placeholders.cmc-nlp-txn-log-services.server.port= flyway.domain.placeholders.cmc-nlp-util-services.server.port= flyway.domain.placeholders.cmc-batch-services.server.port= flyway.domain.placeholders.cmc-fc-ai-ml-services.server.port= flyway.domain.placeholders.cmc-fc-ai-ml-services.postingPath= flyway.domain.placeholders.cmc-fc-ai-ml-services.pollingEmail= flyway.domain.placeholders.cmc-fc-ai-ml-services.emailServerPort= flyway.domain.placeholders.cmc-fc-ai-ml-services.emailServerHost= flyway.domain.placeholders.cmc-fc-ai-ml-services.pollingFrequency= flyway.domain.placeholders.cmc-fc-ai-ml-services.pollerInitialDelay= flyway.domain.placeholders.cmc-fc-ai-ml-services.emailPassword= flyway.domain.placeholders.cmc-fc-ai-ml-services.pollingPath=

biPublisher related cmc-report-service entries
flyway.domain.placeholders.weblogic.userid=
flyway.domain.placeholders.weblogic.password=
flyway.domain.placeholders.biPublisher.host=
flyway.domain.placeholders.biPublisher.port=
flyway.domain.placeholders.runReportTemplate=
flyway.domain.placeholders.emailTemplate=
flyway.domain.placeholders.dms.host=
flyway.domain.placeholders.dms.port=

flyway jndi connection details for shared services placeholder entries ### flyway.domain.placeholders.plato.jndi=jdbc/PLATO flyway.domain.placeholders.plato-config.jndi=jdbc/PLATO



flyway.domain.placeholders.plato-sec.jndi=jdbc/PLATO_SECURITY flyway.domain.placeholders.plato-ui-config.jndi=jdbc/PLATO_UI_CONFIG flyway.domain.placeholders.sms.jndi=jdbc/sms flyway.domain.placeholders.cmncore.jndi=jdbc/CMNCORE

flyway jndi connection details for obvam services placeholder entries
flyway.domain.placeholders.eie.jndi=jdbc/EIE
flyway.domain.placeholders.eie.server.port=
flyway.domain.placeholders.eie.schemas=

flyway.domain.placeholders.elm.jndi=jdbc/ELM flyway.domain.placeholders.elm.server.port= flyway.domain.placeholders.elm.schemas=

flyway.domain.placeholders.vam.jndi=jdbc/VAM flyway.domain.placeholders.vam.server.port= flyway.domain.placeholders.vam.schemas=

flyway.domain.placeholders.vac.jndi=jdbc/VAC flyway.domain.placeholders.vac.server.port= flyway.domain.placeholders.vac.schemas=

flyway.domain.placeholders.vab.jndi=jdbc/VAB flyway.domain.placeholders.vab.server.port= flyway.domain.placeholders.vab.schemas=

flyway.domain.placeholders.vae.jndi=jdbc/VAE flyway.domain.placeholders.vae.server.port= flyway.domain.placeholders.vae.schemas=

flyway.domain.placeholders.eda.jndi=jdbc/EDA flyway.domain.placeholders.eda.server.port= flyway.domain.placeholders.eda.schemas=

flyway.domain.placeholders.vai.jndi=jdbc/VAI flyway.domain.placeholders.vai.server.port= flyway.domain.placeholders.vai.schemas=

flyway.domain.placeholders.van.jndi=jdbc/VAN flyway.domain.placeholders.van.server.port= flyway.domain.placeholders.van.schemas=

flyway.domain.placeholders.vap.jndi=jdbc/VAP flyway.domain.placeholders.vap.server.port= flyway.domain.placeholders.vap.schemas=



flyway.domain.placeholders.vas.jndi=jdbc/VAS

flyway.domain.placeholders.vas.server.port=

flyway.domain.placeholders.vas.schemas=

flyway.domain.placeholders.vat.jndi=jdbc/VAT

flyway.domain.placeholders.vat.server.port=

flyway.domain.placeholders.vat.schemas=

flyway.domain.placeholders.vaj.server.port=

flyway.domain.placeholders.platoorch.domain.jndi=jdbc/PLATO-O

flyway.domain.placeholders.platoorch.domain.schemas=

flyway.domain.placeholders.plato.alerts.email.userId=

flyway.domain.placeholders.plato.alerts.email.password=

flyway.domain.placeholders.plato.alerts.cmc.userId=

flyway.domain.placeholders.plato.alerts.cmc.branchCode=

flyway.domain.placeholders.plato.alerts.cmc.appld=

flyway.domain.placeholders.plato-rule.hostname=

flyway.domain.placeholders.plato-rule-service.server.port=

flyway.domain.placeholders.platorule.domain.jndi=

flyway.domain.placeholders.platorule.domain.schemas=

flyway.domain.placeholders.obrh.import.data.disable-modify=

flyway.domain.placeholders.cmc-obrh-services.kafka.server.path=

flyway.domain.placeholders.cmc-obrh-services.zookeeper.server.path=

flyway.domain.placeholders.cmc.schemas=

flyway.domain.placeholders.cmc-nlp-opennlp-services.server.port=

flyway.domain.placeholders.cmc-nlp-maintenance-services.server.port=

flyway.domain.placeholders.cmc-nlp-pipeline-services.server.port=

flyway.domain.placeholders.cmc-nlp-docview-services.server.port=

flyway.domain.placeholders.cmc-ml-indb-services.server.port=

flyway.domain.placeholders.cmc-obrh-services.kafka.enabled=

flyway.domain.placeholders.cmc-sla-services.server.port=

flyway.domain.placeholders.cmc-obcbs-services.schemas=



```
flyway.domain.placeholders.obcbs.server.port=
flyway.domain.placeholders.orch.cmc.brn=
flyway.domain.placeholders.orch.cmc.user=
flyway.domain.placeholders.orch.enableDynamicAllocation=
flyway.domain.placeholders.orch.enableSLA=
flyway.domain.placeholders.report-service.server.port=
flyway.domain.placeholders.report-service.hostname=
flyway.domain.placeholders.report-service.domain.jndi=jdbc/PLATOREPORT
flyway.domain.placeholders.report-service.template-metadata-directory=
flyway.domain.placeholders.report-service.output-directory=
flyway.domain.placeholders.report-service.fop-config-file=
### generic entries for all services ###
spring.cloud.config.uri=
apigateway.url=
service.logging.environment=
service.logging.path=
domain-config-deploy.env
### domain config flyway connection entries ###
flywayTask=migrate
flyway.enabled=true
spring.flyway.enabled=false
### generic entries for all services ###
spring.cloud.config.uri=
apigateway.url=
service.logging.environment=
service.logging.path=
```

1.2.4 <u>Method 4 – Workflow Configuration</u>

Follow the below steps to create a workflow:



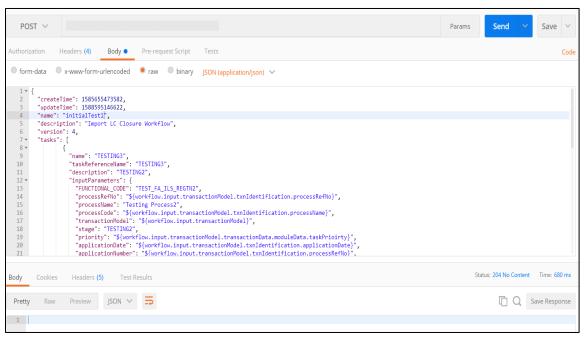
```
"version": 4,
   "tasks": [
           "name": "TEST",
           "taskReferenceName": "TESTING3",
           "description": "TESTING2",
           "inputParameters": {
           "FUNCTIONAL_CODE": "TEST_FA_ILS_REGTN2",
           "processRefNo":
       "${workflow.input.transactionModel.txnIdentification.processRefNo}",
           "processName": "Testing Process2",
           "processCode":
       "${workflow.input.transactionModel.txnIdentification.processName}",
           "transactionModel": "${workflow.input.transactionModel}",
           "stage": "TESTING2",
           "priority":
       "${workflow.input.transactionModel.transactionData.moduleData.taskPrioirty}",
           "applicationDate":
   "${workflow.input.transactionModel.txnIdentification.applicationDate}",
           "applicationNumber":
   "${workflow.input.transactionModel.txnIdentification.processRefNo}",
           "processRefNumber":
"${workflow.input.transactionModel.txnIdentification.processRefNo}",
           "branch": "${workflow.input.transactionModel.txnIdentification.branchCode}",
           "user": "${workflow.input.transactionModel.txnIdentification.currentUser}",
           "customerNumber":
   "${workflow.input.transactionModel.transactionData.moduleData.customerId}",
           "amount":
       "${workflow.input.transactionModel.transactionData.moduleData.amount}",
           "currencyCode":
   "${workflow.input.transactionModel.transactionData.moduleData.currency}",
           "TASK OUTCOMES": [
           "PROCEED"
           1,
           "moduleCode": "OBTFPM",
           "customFilter": [
           "key": "contractRefNo",
           "label": "Back Office Reference"
           },
           {
```



```
"label": "External Reference"
            }
       ]
        },
        "type": "WAIT",
        "startDelay": 0,
        "optional": false,
        "asyncComplete": false
   }
   ],
    "outputParameters": {
    "stage": "CLMO_FA_SNPOAR_APPEN",
    "taskOutcome": "PROCEED_WITH_PARTICIPANT"
   },
    "schemaVersion": 2,
    "restartable": true,
    "workflowStatusListenerEnabled": false
}
```

"key": "otherRefNo",

Call the API (/api/metadata/workflow) and pass the DSL in body. The following screen depicts the sample workflow:



2. Workflow Creation

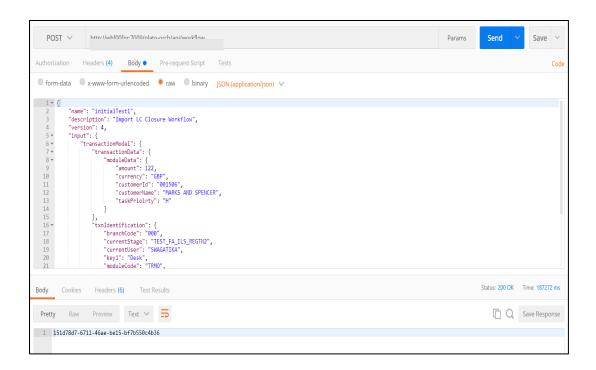
Call the API (/api/workflow) to create the workflow. This API provides the information to the workflow metadata which we have created using previous call.

Body:



```
{
        "name": "initialTest",
        "description": "initialTest",
        "version": 4,
        "input": {
                "transactionModel": {
                "transactionData": {
                "moduleData": {
                "amount": 122,
                "currency": "GBP",
                "customerId": "001506",
                "customerName": "MARKS AND SPENCER",
                "taskPrioirty": "H"
        }
        },
                "txnldentification": {
                "branchCode": "000",
                "currentStage": "TEST_FA_ILS_REGTN2",
                "currentUser": "SWAGATIKA",
                "key1": "Desk",
                "moduleCode": "TRMO",
                "processName": "Testing Process2",
                "processRefNo": "300ILCI012260",
                "applicationDate": 1588582461960,
                "taskOutcome": "PROCEED",
                "taskPrioirty": "H"
        }
    }
  }
}
The following screen depicts the sample workflow:
```

ORACLE





1.3 How to Create Domain and Cluster Configuration

This section contains the following sub-sections:

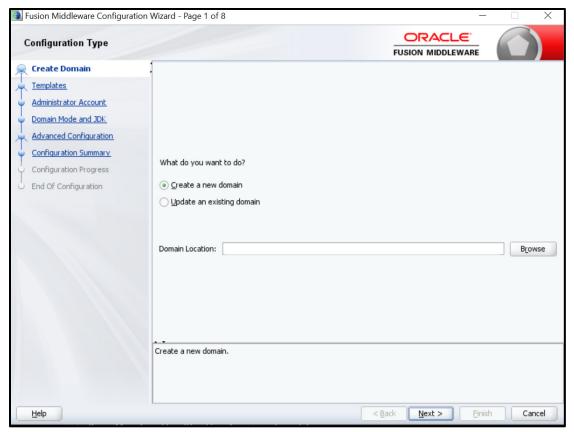
- Domain Creation Configuration
- Post Domain Creation Configurations

1.3.1 <u>Domain Creation Configuration</u>

Perform the following steps for domain and cluster configuration:

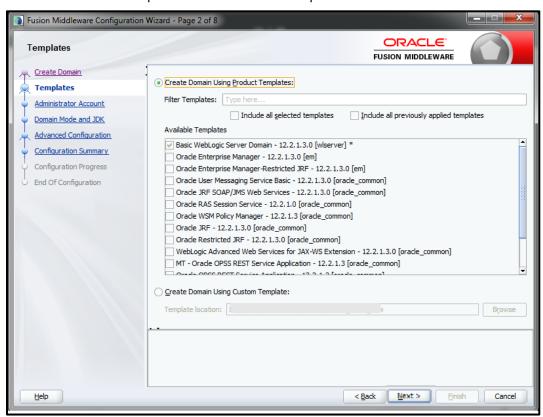
NOTE: Name need not to be same as provided in Screenshot.

- Open /oracle_common/common/bin and run config.cmd (or .sh if operating system is linux). Create domain with required cluster and server configurations. Refer to the screenshots below.
- 2. Select Create a new domain and provide domain name. For example, platoinfra_domain.

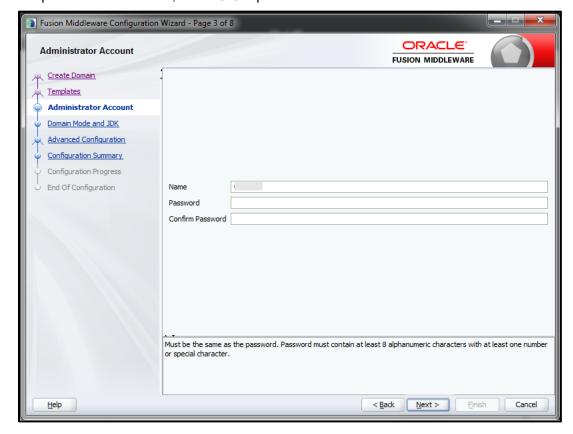




3. Click **Next** to create simple domain with default templates.

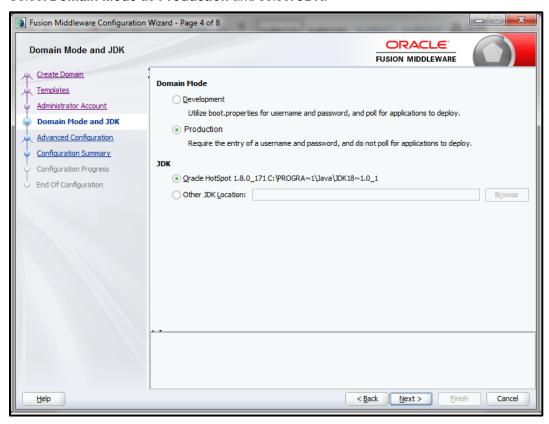


4. Set password and confirm, click Next to proceed.

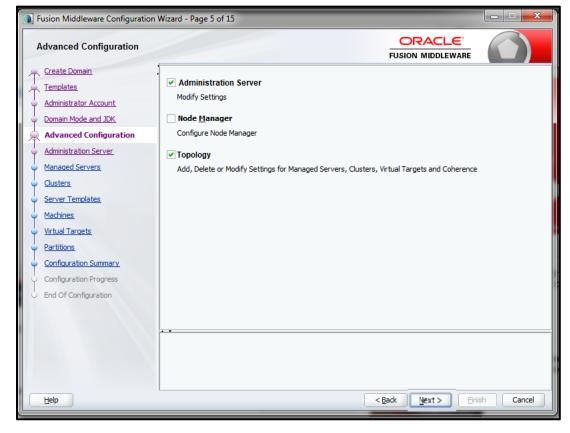




5. Select Domain Mode as Production and select JDK.

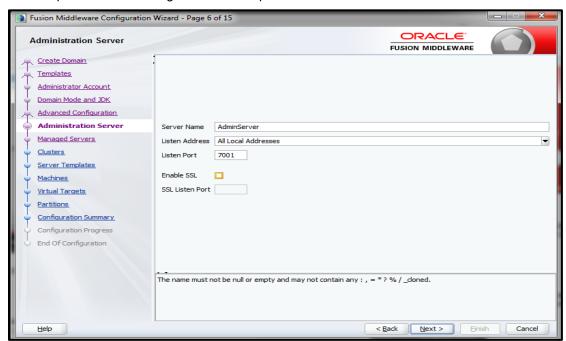


6. Select **Administration Server** and **Topology** in advanced configurations.

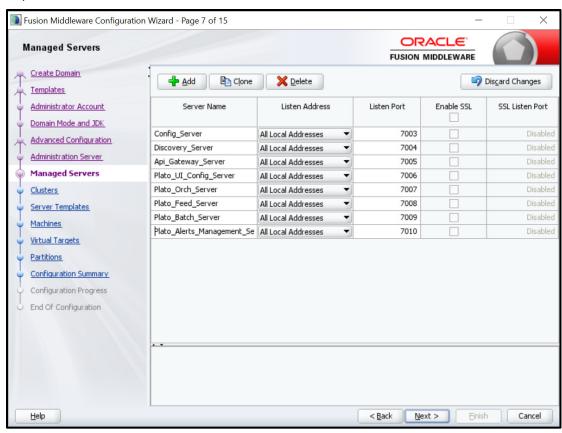




7. Edit the port and host configurations as required and click Next.

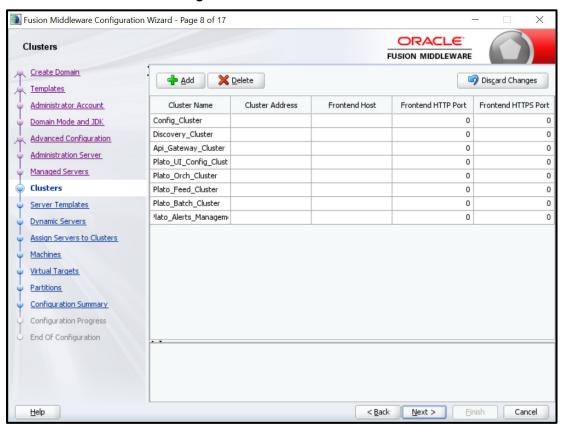


8. Add managed servers and provide meaningful **Server Name**, edit listen address and port as required.





9. Add clusters one for each managed servers.

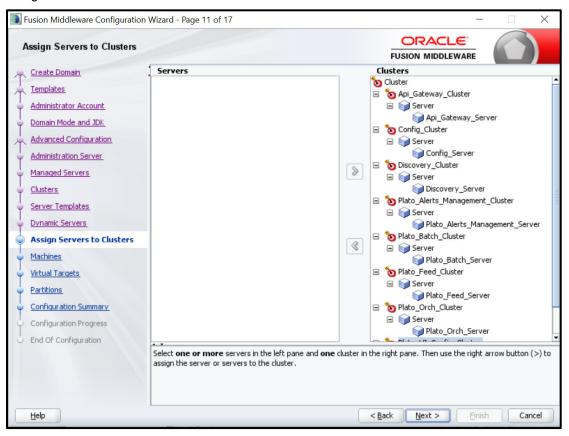


10. Skip Server Templates and Dynamic Servers.

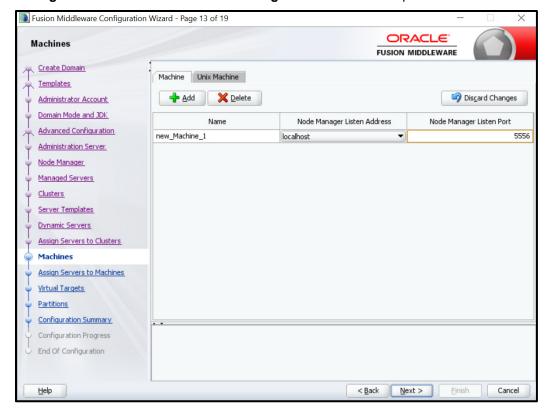




11. Assign clusters with servers.

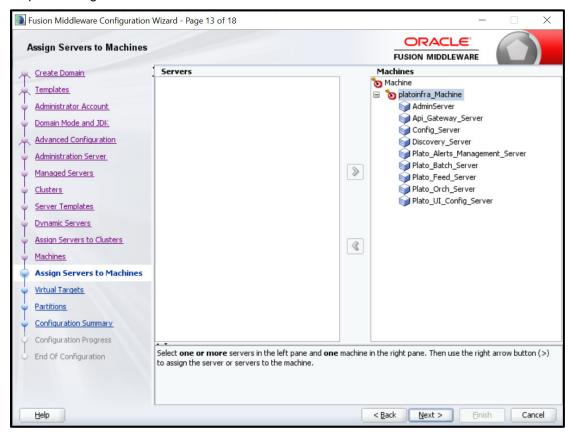


12. Add Machine/Unix Machine based on operating system and configure Name, Node Manager Listen Address and Node Manager Listen Port as required.

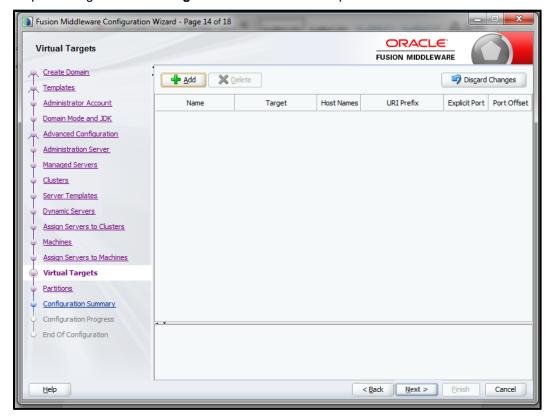




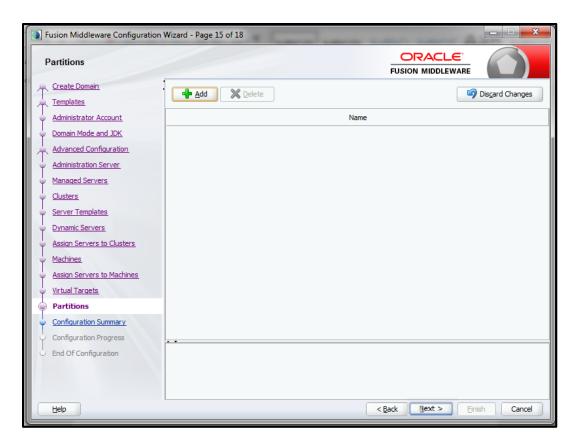
13. Map all managed servers under the machine created.



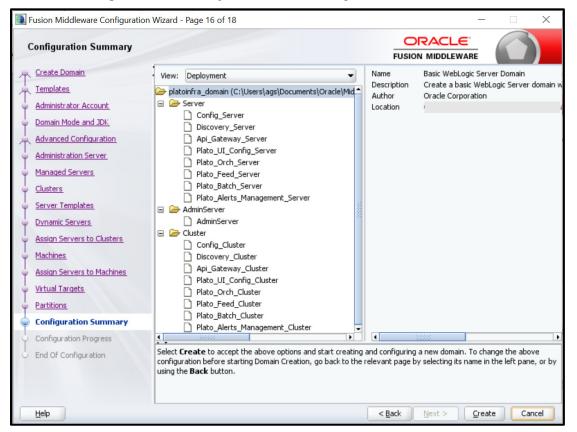
14. Skip or configure Virtual Targets and Partitions as required.



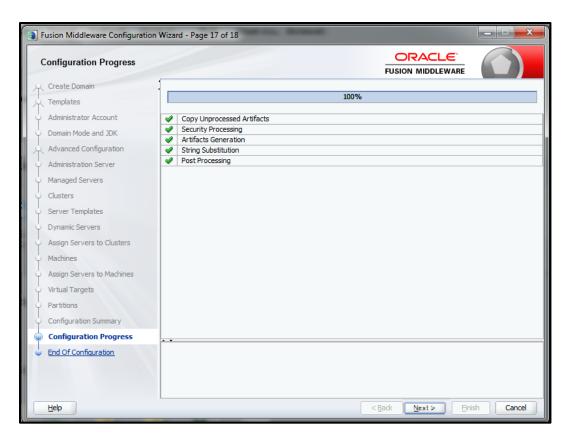




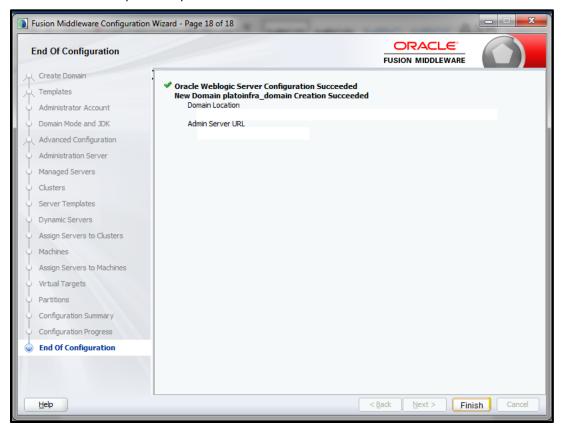
15. Check the Configuration Summary and confirm creating domain.







16. Click **Finish** to complete the procedure.





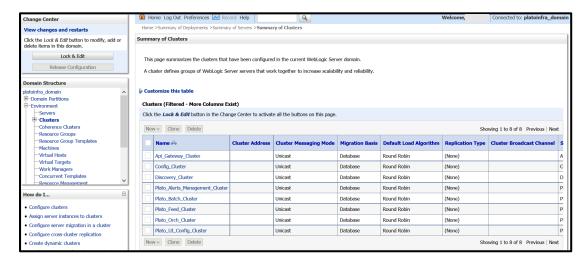
1.3.2 <u>Post Domain Creation Configurations</u>

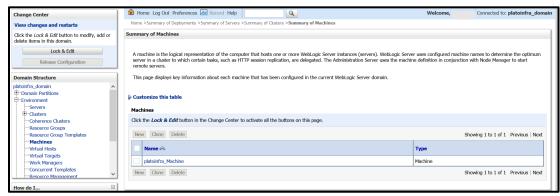
Once finished, refer oracle fusion middleware documents for more details on how to start admin server, node manager and managed servers.

- 1. Open /user_projects/domain/platoinfra_domain/bin
- 2. Perform all the Environment Setup steps such as setting -D parameters, Embedded Weblogic Setup and changes required for OAuth.
- 3. Run startWeblogic.cmd (or .sh if operating system is linux).
- 4. Open /user_projects/domains/platoinfra_domain/bin.
- 5. Run **setNMJavaHome.cmd** (or **.sh** if operating system is linux).
- 6. Open /user_projects/domains/platoinfra_domain/nodemanager.
- 7. Edit **nodemanager.properties** as required (securelistner = false if ssl and keystore is not given).
- 8. In admin console, select the following options in sequential order:
 - a. Machines
 - b. platoinfra_Machine
 - c. Node Manager
 - d. Type
 - e. Plain
 - f. Save
- 9. Open /user_projects/domains/platoinfra_domain/bin.
- 10. Run **startNodeManager.cmd** (or **.sh** if operating system is linux)
- 11. Start all managed servers.
- 12. Login to console and verify servers and clusters. Refer to the screenshots below:











1.4 How to Create Datasource

Perform the following steps to create data source:

- Start AdminServer, Node Manager and make sure all the managed servers (targets) are in running mode.
- 2. Select the following options in sequential order:
 - a. Services
 - b. Datasources
 - c. New
 - d. Generic Datasource



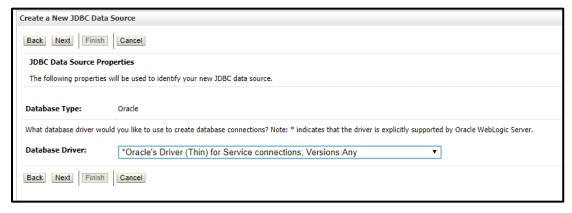




3. Give datasource Name and JNDI Name, and click Next.

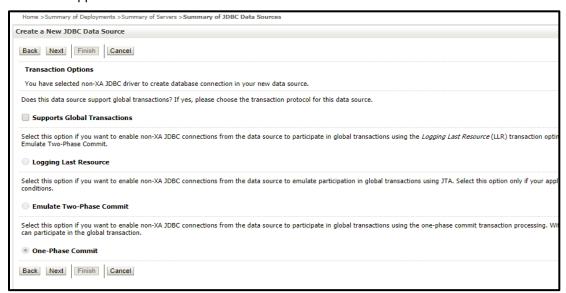


4. Select Thin for Service Connections (Instant) and click Next.

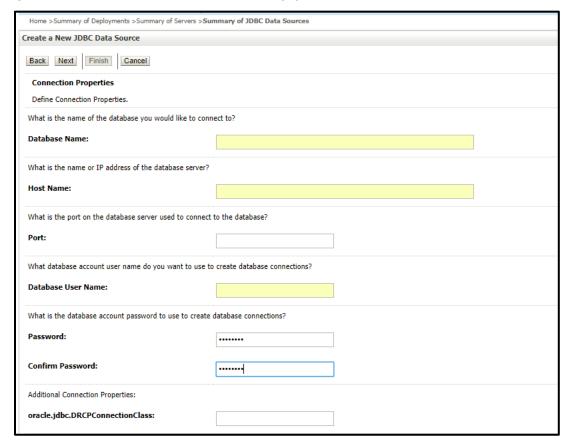




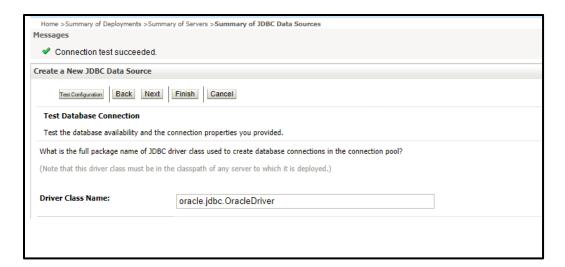
5. Uncheck support for Global Transactions.



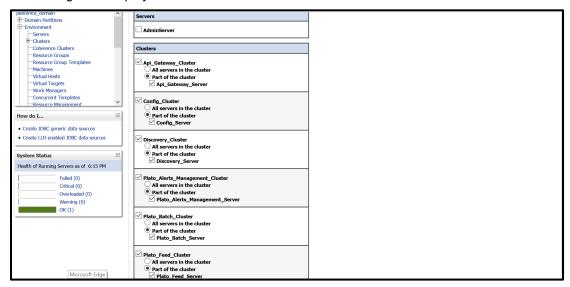
6. Give database connection details and click **Next** to test connection.



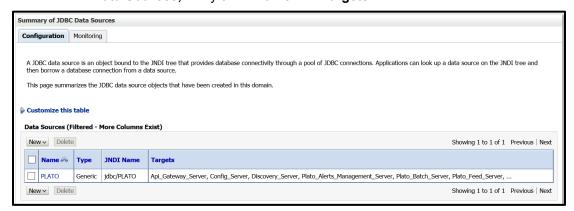




7. Select targets to deploy data source.

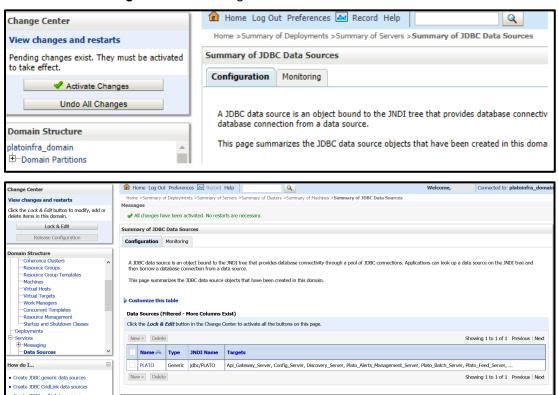


8. View created Data Sources, verify JNDI Name and Targets.

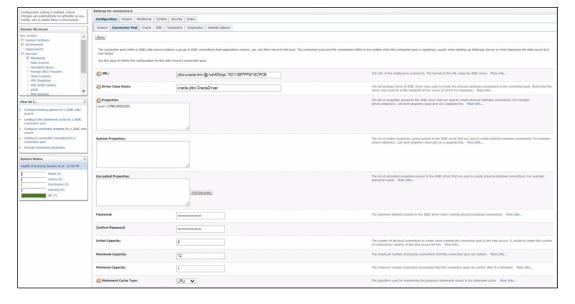




9. Click Activate Changes after confirming details.



- 10. Post creating Data Source, click Data source under Services menu.
- 11. Select the specific Data sources one by one.
- 12. Navigate to **Connection Pool** tab under **Configuration** section and update the initial capacity, Minimum capacity and Max capacity as explained in the below screenshot

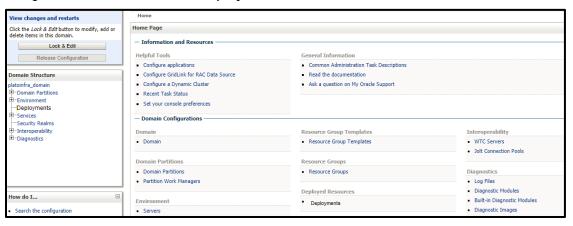




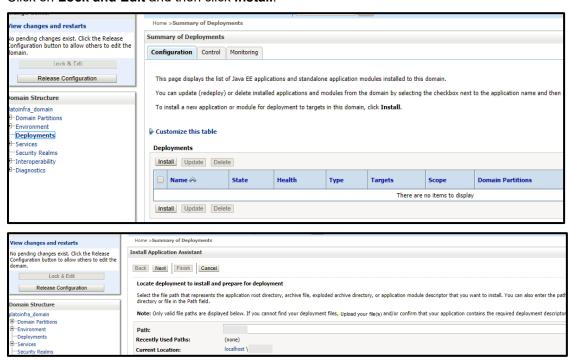
1.5 How to Deploy Application

Steps to Deploy archives as application on weblogic is same for all the above except for managed server and domain, where we deploy will differ. Perform the following steps to see how deployment of archive as application is done on weblogic:

1. Navigate to left menu and select **Deployments**.

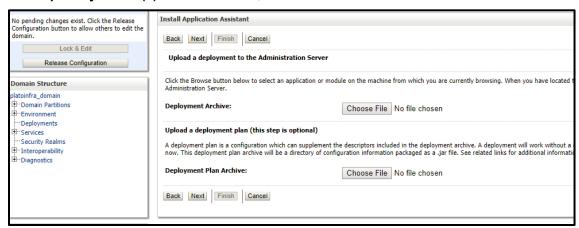


2. Click on Lock and Edit and then click Install.

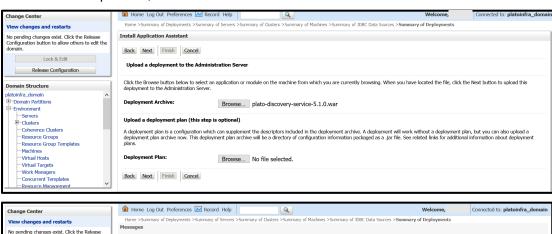


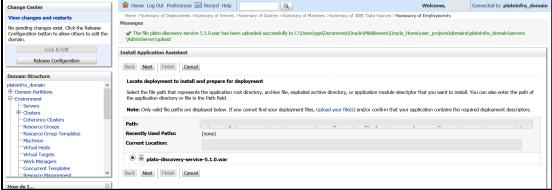


3. Click Upload your file(s) to select archive, Choose File and click Next.

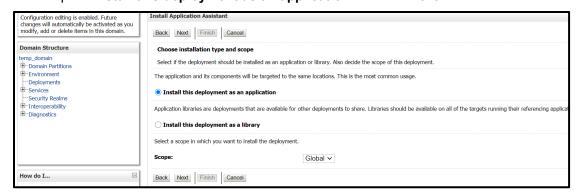


4. After archive is uploaded, click Next.



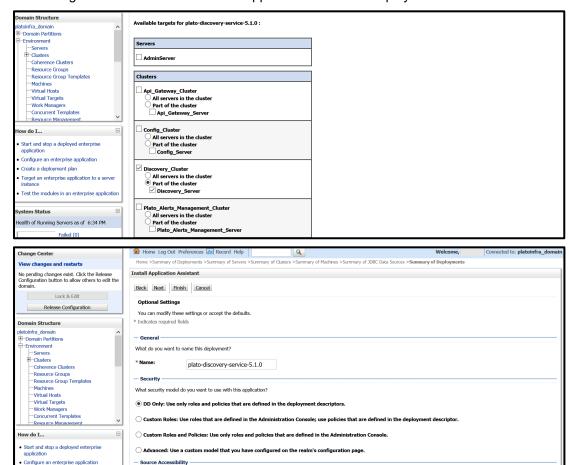


5. Select option Install this deployment as an application and click Next.





6. Select target servers/clusters on which application has to be deployed and the Next.



7. Click Finish and then click Save and Activate Changes.

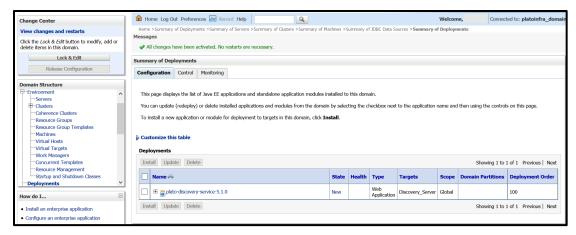
· Target an enterprise application to a server

How should the source files be made accessible?

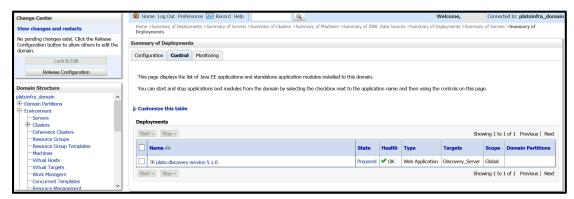
Use the defaults defined by the deployment's targets



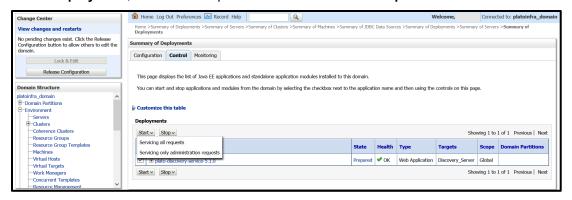




8. Click **Deployments** and then **Control** to changes the state of application from prepared to active status.



9. Under **Deployment**, click **Start** dropdown and select **Start all requests**.



10. Click Yes.





11. The status is displayed as Active in the state column.

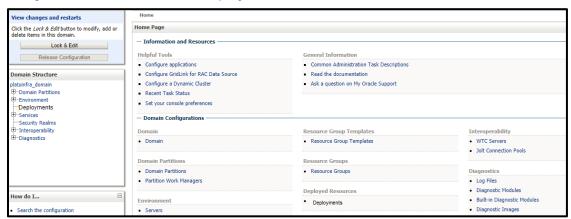




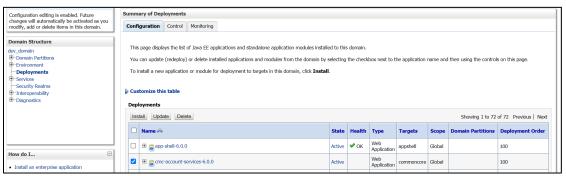
1.6 How to Undeploy Application

Login into weblogic server with the proper credentials.

1. Navigate to left menu and select **Deployments**.



Click Lock and Edit and then select the service that needs to be undeployed in Deployments.

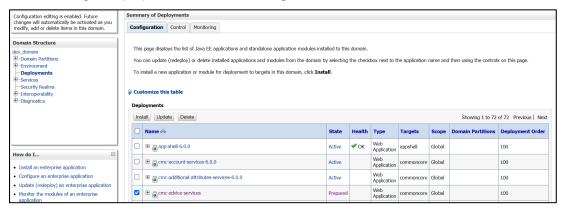


3. On Control tab, click Stop, and select Force stop now from the dropdown list.





4. Once it changes to prepared state, click **Configuration** tab.

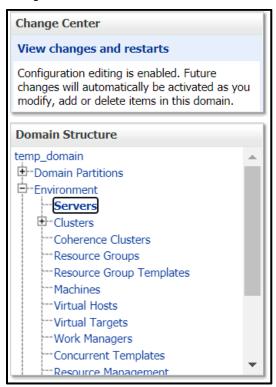


5. Select the service again and click on Delete to undeploy the service.

1.7 How to Restart Servers

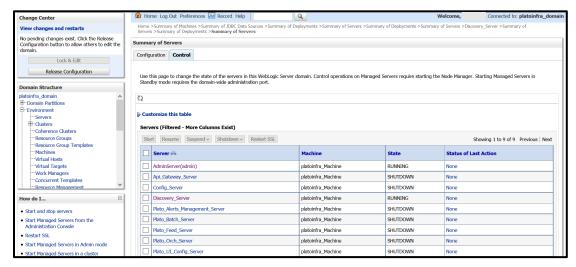
Perform the following steps to restart servers:

1. Navigate to left menu and select **Environment**, and then click **Servers**.

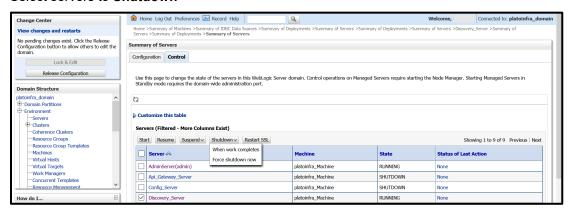




2. Click Control tab.



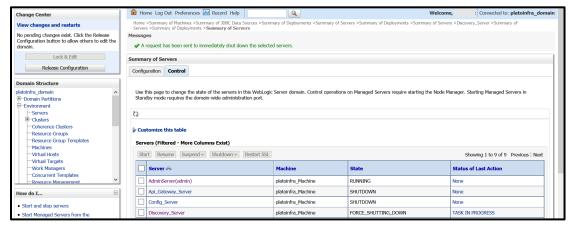
3. Select servers to Shutdown



4. Click Yes to confirm shutdown.

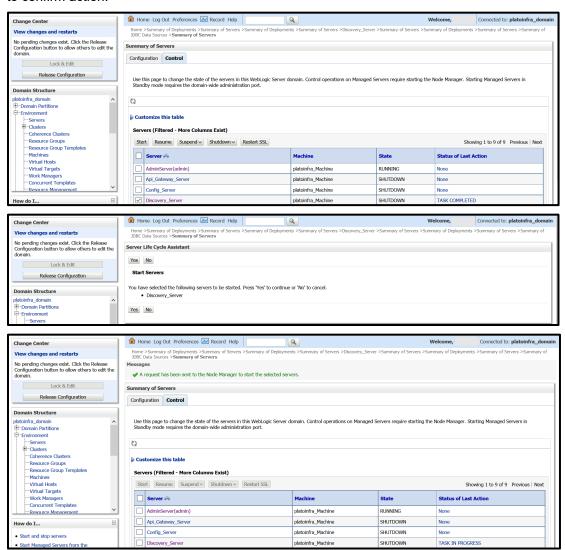


5. The status displayed as shown below:

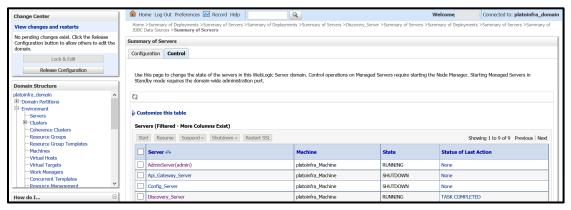




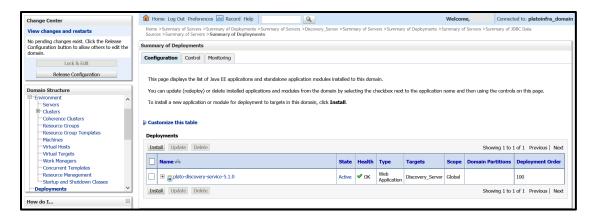
6. Once shutdown is completed, navigate to **Control**, select the servers to **Start**, and click **Yes** to confirm action.



7. When all requested servers are running, navigate to **Summary of Deployments,** and check if deployments are in active state.







1.8 How to Check Port Number

Perform the following steps to check port numbers:

- 1. Specify the User id and Password, and login to WebLogic console.
- 2. Click Environment and then click Server.



Under Servers (Filtered - More Columns Exist) section, you will be able to see all the server listed.





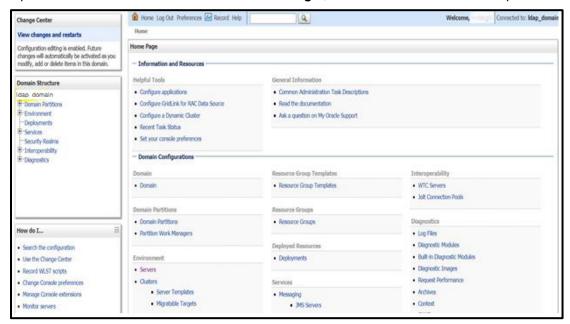
1.9 Weblogic Embedded LDAP Setup

The following changes are to be made for configuring the Weblogic-Embedded LDAP server for Oracle Banking Microservices Architecture:

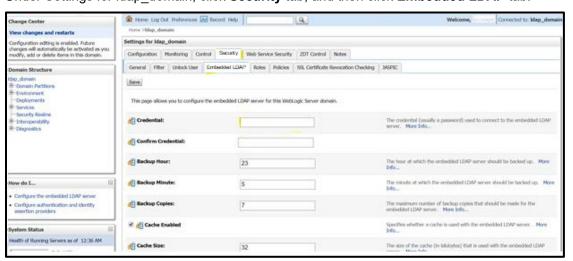
- Configuration of Weblogic LDAP
- · Creation of Users
- Plato Security Config Table Entries

1.9.1 Configuration of Weblogic LDAP

1. Open the Administration Console for the Weblogic, and click domain name in left panel.

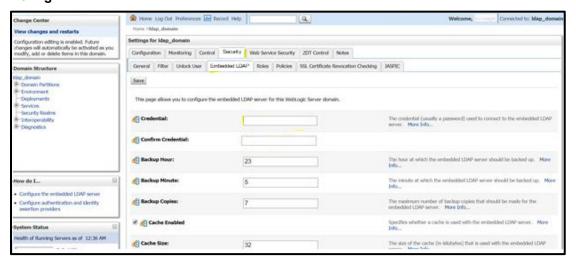


2. Under Settings for Idap_domain, click Security tab, and then click Embedded LDAP tab.





3. Set the **Credential** for Weblogic Embedded LDAP store. This is needed in the **Security Config** table.

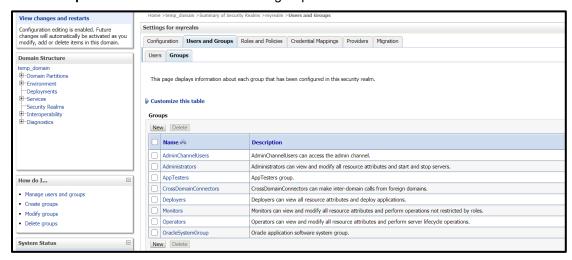


1.9.2 Creation of Users

- 1. Navigate to left menu, and click Security Realms.
- 2. In the Summary of Security Realms window, click myrealm.

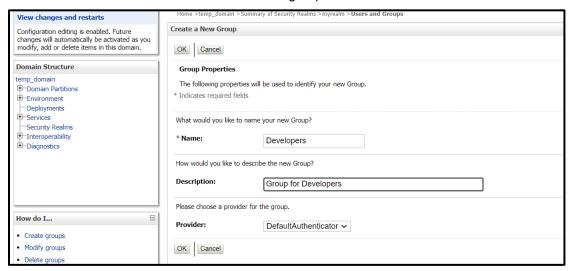


- 3. Under Settings for myrealm, click Users and Groups.
- 4. Click **Groups** tab. Click **New** to make a new group.

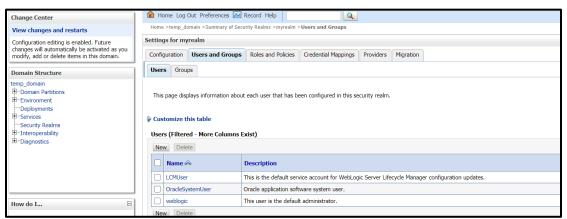




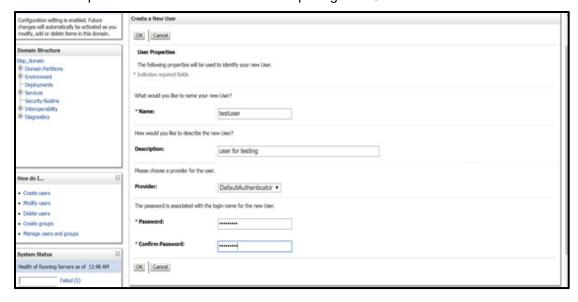
5. Add the relevant details and click **OK**. The new group will be created.



6. Click Users tab, and click New to create user.



7. Enter the required details for the user. After completing click **OK**. The user will be created.

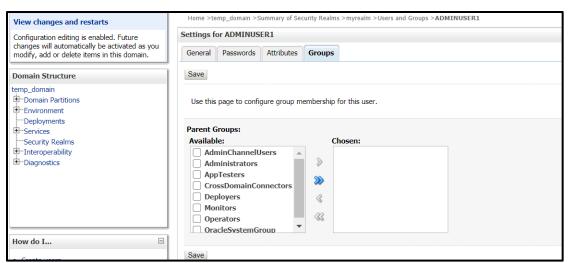




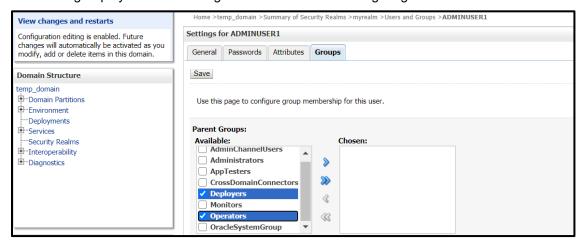
8. Click on the newly created user to assign the newly created user to some group.



 Under Setting for ADMINUSER1 (or whatever your user's name is) window, click Groups tab.

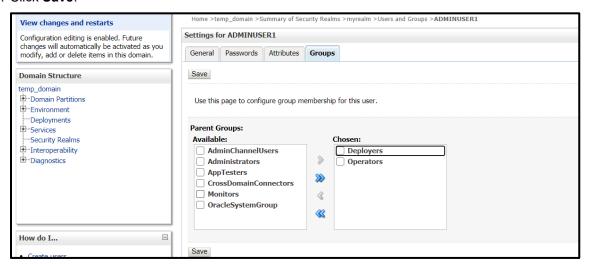


10. Select the groups you want to assign to the user and click single right button as shown below.





11. Click Save.



1.9.3 <u>Oracle Banking Microservices Architecture Security Config Table Entries</u>

Connection details for the embedded LDAP of weblogic (assuming the admin server is running on 10.99.99.10:7001) are given below:

Connection Details:

URL: Idap:// 10.99.99.10:7001

Server Base: dc={DOMAIN_NAME} (in our case it would be dc=ldap_domain)

User Search Base: ou=people,ou=myrealm

Server User: cn=admin

Server Credentials: As setup in step Point 3 under 1.8.1

Security Config Table Entries:

ID	VALUE	Description
LDAP_URL	ldap:// 10.99.99.10:7001	Valid LDAP Server address with port.
LDAP_SERVER_USER	cn=admin	LDAP server login username
LDAP_SERVER_BASE	dc=ldap_domain	LDAP Server Base
LDAP_SERVER_CREDENTIAL	ylksiMFfjVbfcpA7Qheh8Q==	LDAP server credentials in encrypted form(For Encryption steps, refer to Encrypted Utility section below)
LDAP_USER_SEARCH_BASE	ou=people,ou=myrealm	LDAP User Search Base
LDAP_PROVIDER	EMBEDDED_WEBLOGIC	Which LDAP Provider to be used. Also, if this row is not present in this table, then In-House Spring Plato LDAP will be used.



1.10 Oracle Analytic Server Setup

This section contains the following sub-sections:

- Prerequisite
- Start BI Server
- Upload BI Reports
- Test BI Reports

1.10.1 Prerequisite

Perform the following steps:

- Machine should have Java JDK1.8.0_271 has installed
- Oracle Analytics Server 5.5.0

1.10.2 Start BI Server

Perform the following steps to start BI server:

- 1. Start the weblogic server and analytics server.
- 2. Check the weblogic console whether analytics server is running.

1.10.3 Upload BI Reports

Perform the following steps to upload BI reports:

- 1. Login to the Analytics server console.
- 2. Open the OSDC and check for the report Catalog object \{unzip folder}\REP\{reportfilename\}.xdrz or any other Catalog objects listed below:

Catalog Object	Extensions Supported	
Data Model	.xdmz	
Folder	.xdrz	
Report	.xdoz	
Style Template	.XSSZ	
Subtemplate	.xsbz	

3. Upload the catalog object to Analytics Server.

1.10.4 Test BI Reports

Perform the following steps to generate BI reports:

- 1. Open the application, and go the **Reports** section of the application.
- 2. Choose the report generation criteria. For example, Start Date or End Date.
- 3. Choose the format of the report.
- 4. Generate the report.

NOTE: If the format of the report selected is PDF, a PDF report will be generated.



1.11 How to deploy Plato-Apigateway Router

1.11.1 Router deployment steps

Follow services must be deployment in below order to setup router service:

1. Deploy plato-config-service

a. Set placeholder -Dflyway.domain.placeholders.plato-apigateway-router.server.port=<new server port for plato-apigateway-router>

2. Deploy plato-ui-config-service

- set -Dflyway.domain.placeholders.apigateway.port=<new server port for platoapigateway-router>
- b. set -Dflyway.domain.placeholders.apigateway.host=<server host for platoapigateway-router>

3. Deploy plato-api-gateway

a. Migrate existing OAuth users:

API for migration - /api-gateway/migrateOauthUsers

Example: http://hostname:8080/api-gateway/migrateOauthUsers

Authorization - jwtToken

Headers:

appld,userld,entityld

Body (Json): ["client1", "client2"] - Migrate selected list of clients

or

Body (Json): ["ALL"] -Migrate all clients.

4. Deploy plato-apigateway-router

java -jar plato-apigateway-router.jar --plato.services.config.uri=http://hostname:8001 --plato.service.logging.path=/logfilePath

- --plato.services.config.uri Config server URI which is referred by all other services.
- --plato.service.logging.path Path where log file(plato-apigateway-router.log) must be created. Specify the same path as that of other services.

We can enable SSL for plato-apigateway-router by providing:

- --server.ssl.enabled=true
- --server.ssl.key-store=C:/Users/KEYS/keytool/keystore.jks
- --key-store-password=xxxx
- --server.ssl.trust-store=C:/Users/KEYS/keytool/truststore.jks



- --trust-store-password=xxxxx
- --salt=xxxxx

Note: Passwords and salt must be encrypted value generated using respective toolkits.

Provide ssl certs of plato-api-gateway required for validation call when plato-api-gateway is deployed in different server.:

- --apigateway.useServerSSLKeys=false
- --apigateway.ssl.key-store=C:/Users/KEYS/keytool/keystore.jks
- --apigateway.ssl.key-store-password=xxxx
- --apigateway.ssl.trust-store=C:/Users/KEYS/keytool/truststore.jks
- --apigateway.ssl.trust-store-password=xxxxx

Note: Above certificates can be different than that of plato-apigateway-route

we must also provide trust certificates as

--spring.cloud.gateway.httpclient.ssl.trusted-x509-certificates=C:/Users/KEYS/keytool/keystore1.pem, C:/Users/KEYS/keytool/keystore2.pem

Note: Run this service with nohup command to that process will run on background

App-shell must point to plato-apigateway-router service. Update 'apigateway.url' by correcting it to "http://hostname:8080" - here 8080 is the port is configured for plato-apigateway-router.

1.11.2 Generation pem file and encryption of secrets:

Use plato-security-toolkit to encrypt secrets ---key-store-password, --trust-store-password, --apigateway.ssl.key-store-password, --apigateway.ssl.trust-store-password and these encrypted values must be passed to router service.

Encryption of secrets:

To encrypt the passwords as per Oracle Standards, we recommend toolkit - plato-security-toolkit

Usage: java -jar plato-security-toolkit-9.1.0.jar

Enter pass phrase: Test123

Enter Salt: 0.9412345671234567

Encrypted Password: m4Q1rbtegkWse2s7D2jKfw==

Encryption of salt: to encrpt –salt value used while generating encrypted secret. This encrypt salt must be passed to router service.

To encrypt the salt as per Oracle Standards, we recommend toolkit - plato-security-saltencryption-toolkit

Usage: java -jar plato-security-salt-encryption-toolkit-9.1.0.jar



Enter Salt: 0.9412345671234567

Encrypted Password: VmtjMWQxTnJOVlpPV0VaWFZrVndUMWxYTVU1bFJsSlpZMFZLYTFaVVZrWldWbWgzVkRGS 1JsWnFVVDA9

PEM file from keystore

keytool -exportcert -alias localhost -keystore keystore.jks -rfc -file keystore.pem

1.11.3 <u>Timeout parameters</u>

These parameters are similar to earlier ribbon timeout params spring.cloud.gateway.httpclient.connect-timeout= 3000 //seconds spring.cloud.gateway.httpclient.response-timeout= 360s spring.cloud.gateway.httpclient.pool.acquire-timeout=6000 //milliseconds spring.cloud.gateway.httpclient.pool.max-connections=10000

#Properties used webclient call is made to plato-api-gateway for validation webclient.http.max.connections=1000 webclient.http.acquire.timeout.millisec=5000 webclient.http.connection.timeout.millisec=20000 webclient.http.read.timeout.seconds=20000 webclient.http.write.timeout.seconds=20000





Configuration and Deployment Guide

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