Oracle® Retail Bulk Data Integration

Installation Guide

Release 19.0.1

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Oracle® Retail Bulk Data Integration Installation Guide, Release 19.0.1

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Contents

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Oracle® Retail Bulk Data Integration Installation Guide, Release 19.0.1.

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- Are the implementation steps correct and complete?
- Did you understand the context of the procedures?
- Did you find any errors in the information?
- Does the structure of the information help you with your tasks?
- Do you need different information or graphics? If so, where, and in what format?
- Are the examples correct? Do you need more examples?

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Preface

The Oracle® Retail Bulk Data Integration Installation Guide contains the requirements and procedures that are necessary for the retailer to install the Oracle Retail Bulk Data Integration product.

Audience

The Installation Guide is written for the following audiences:

- Database administrators (DBA)
- System analysts and designers
- Integrators and implementation staff

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When contacting Customer Support, please provide the following:

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- Functional and technical description of the problem (include business impact)
- Detailed step-by-step instructions to re-create
- Exact error message received
- Screen shots of each step you take

Review Patch Documentation

When you install the application for the first time, you install either a base release (for example, 19.0) or a later patch release (for example, 19.0.1). If you are installing the base release and additional patch releases, read the documentation for all releases that have occurred since the base release before you begin installation. Documentation for patch releases can contain critical information related to the base release, as well as information about code changes since the base release.

Improved Process for Oracle Retail Documentation Corrections

To more quickly address critical corrections to Oracle Retail documentation content, Oracle Retail documentation may be republished whenever a critical correction is needed. For critical corrections, the republication of an Oracle Retail document may at times not be attached to a numbered software release; instead, the Oracle Retail document will simply be replaced on the Oracle Technology Network Web site, or, in the case of Data Models, to the applicable My Oracle Support Documentation container where they reside.

This process will prevent delays in making critical corrections available to customers. For the customer, it means that before you begin installation, you must verify that you have the most recent version of the Oracle Retail documentation set. Oracle Retail documentation is available on the Oracle Technology Network at the following URL:

http://www.oracle.com/technetwork/documentation/oracle-retail-100266.html

An updated version of the applicable Oracle Retail document is indicated by an Oracle part number, as well as print date (month and year). An updated version uses the same part number, with a higher-numbered suffix. For example, part number E123456-02 is an updated version of a document with part number E123456-01.

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Oracle Retail Documentation on the Oracle Technology Network

Oracle Retail product documentation is available on the following web site:

http://www.oracle.com/technetwork/documentation/oracle-retail-100266.html

(Data Model documents are not available through the Oracle Technology Network. You can obtain these documents through My Oracle Support.)

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.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.

Convention	Meaning
`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 Retail Bulk Data Integration (BDI) provides the ability to transfer bulk data between Oracle Retail applications. BDI contains the following components:

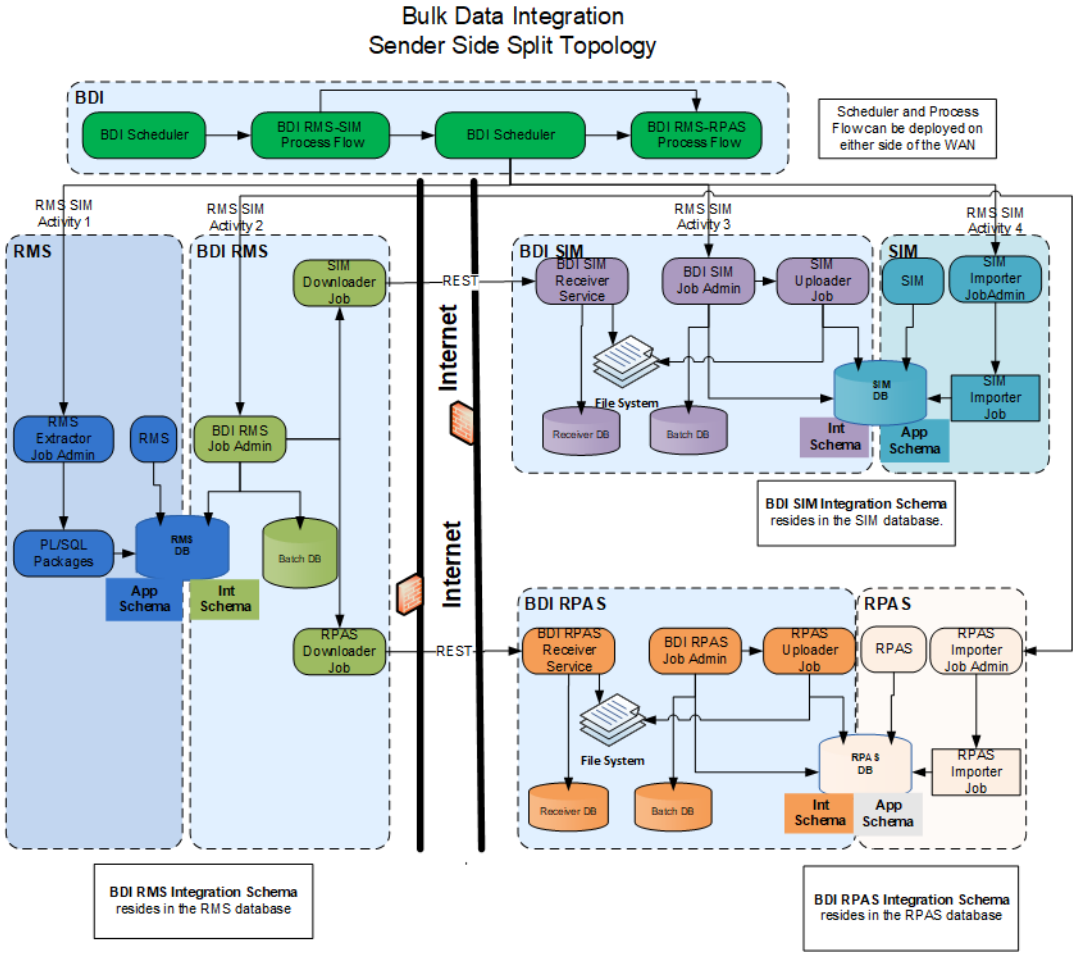
- BDI Batch Job Admin – Helps management of batch jobs
- BDI Process Flow - Provides a mechanism to run multiple dependent batch jobs
- BDI Scheduler - Schedules execution of an action, like invoking process flows or services

A BDI installation contains the following components:

- An installation of BDI RMS Batch Job Admin
- An installation of BDI SIM Batch Job Admin
- An installation of BDI Process Flow
- An installation of BDI Scheduler

BDI Topology

The diagram below shows the default topology for BDI. Please refer to the *Oracle Retail Bulk Data Integration Implementation Guide* for other supported topologies.


Bulk Data Integration
Sender Side Split Topology
BDI
BDI Scheduler
BDI RMS-SIM Process Flow
BDI Scheduler
BDI RMS-RPAS Process Flow
Scheduler and Process Flow can be deployed on either side of the WAN
RMS SIM Activity 1
RMS SIM Activity 2
RMS SIM Activity 3
RMS SIM Activity 4
RMS
BDI RMS
BDI SIM
SIM
SIM Downloader Job
REST
BDI SIM Receiver Service
BDI SIM Job Admin
SIM Uploader Job
SIM
SIM Importer JobAdmin
Internet
RMS Extractor Job Admin
RMS
BDI RMS Job Admin
File System
SIM DB
SIM Importer Job
Receiver DB
Batch DB
Int Schema
App Schema
BDI SIM Integration Schema resides in the SIM database.
PL/SQL Packages
RMS DB
Batch DB
App Schema
Int Schema
Internet
BDI RPAS
RPAS
RPAS Downloader Job
REST
BDI RPAS Receiver Service
BDI RPAS Job Admin
RPAS Uploader Job
RPAS
RPAS Importer Job Admin
File System
RPAS DB
RPAS Importer Job
Receiver DB
Batch DB
Int Schema
App Schema
BDI RMS Integration Schema resides in the RMS database
BDI RPAS Integration Schema resides in the RPAS database

2

Technical Specifications

The BDI components have several dependencies on Oracle Retail Application installations, as well as on the Oracle WebLogic Servers. This section covers these requirements.

Requesting Infrastructure Software

If you are unable to find the necessary version of the required Oracle infrastructure software (database server, application server, WebLogic, etc.) on the Oracle Software Delivery Cloud, you should file a non-technical 'Contact Us' Service Request (SR) and request access to the media. For instructions on filing a non-technical SR, see My Oracle Support Note 1071023.1 - *Requesting Physical Shipment or Download URL for Software Media*.

Server Requirements

Supported On	Versions Supported
Database Server OS	OS certified with Oracle Database 19c (19.3.0.0.0) Enterprise Edition. Options are: ■ Oracle Linux 6 or 7 for x86-64 (Actual hardware or Oracle virtual machine). ■ Red Hat Enterprise Linux 6 or 7 for x86-64 (actual hardware or Oracle virtual machine) ■ IBM AIX 7.1 (actual hardware or LPARs) ■ Solaris 11.2 Sparc (actual hardware or logical domains)
Database Server 19c	Oracle Database Enterprise Edition 19c (19.3.0.0.0) with the following specifications: **Components:** ■ Enterprise Edition ■ Examples CD (formerly the companion CD) **Other Components:** ■ Perl interpreter 5.0 or later ■ X-Windows interface ■ JDK 1.8 with latest security updates 64 bit

Application Server OS	OS certified with Oracle Fusion Middleware 12c. Options are: ■ Oracle Linux 6 or 7 for x86-64 (Actual hardware or Oracle virtual machine). ■ Red Hat Enterprise Linux 6 or 7 for x86-64 (actual hardware or Oracle virtual machine) ■ IBM AIX 7.1 (actual hardware or LPARs) ■ Solaris 11 Sparc (actual hardware or logical domains)
Application Server	Oracle Fusion Middleware 12c (12.2.1.4) **Components:** ■ Oracle WebLogic Server 12c (12.2.1.4) ■ Java: JDK 1.8+ latest security updates 64 bit
Minimum required JAVA version for all operating systems	JDK 1.8+ latest security updates 64 bit

Installation Notes

When redeploying BDI applications, please note the following.

- If any existing datasource connection detail is changed (in *env-info.json deployment config file), such as the JDBC URL, username or, password of the database connection, the datasource needs to be first deleted from the WebLogic server before installation. This is a manual step.
  - Log in to the WebLogic Server Admin console. Go to Services -> Data Sources page. Select the datasource, delete and activate the changes.
  - Proceed with the installation.
- The JobAdminDataSource and ReceiverServiceDataSource should also be cleaned if we are using the same schema, delete all the tables for RMS, SIM and external.

Note: The above steps are not required if no datasource connection detail is changed during redeployment.

If there are no datasource detail changes, note the following before redeployment of the BDI applications on an existing schema:

- Make sure the LOADSEEDDATA flag is set to TRUE.
- For BDI Batch JOB Admin, make sure the LOADJOBDEF flag is set to TRUE, if there are any changes to existing job definitions or new jobs are added.
- For BDI Process Flow, make sure the LOADPROCESSDEF flag is set to TRUE, if there are any changes to existing process flow definitions or new process defs are added.

3

BDI Batch Job Admin

This chapter describes the procedure you must use to install the JRF domain and deploy the BDI Batch Job Admin application. For more information about domain creation and other server related information, see the WebLogic application server documents.

Installation and Setup Instructions

This section describes the installation and setup instructions including the installation prerequisites, preparing the WebLogic server, creating a WebLogic domain, and deploying the WAR file.

Prerequisites

The BDI Batch Job Admin application requires Oracle WebLogic server 12c (12.2.1.4), built with Java 8 (JDK 1.8 64 bit with the latest security updates).

The recommended Java VM memory setting for the Job Admin application domain is:

-Xms1024m -Xmx2048m

Installing WebLogic

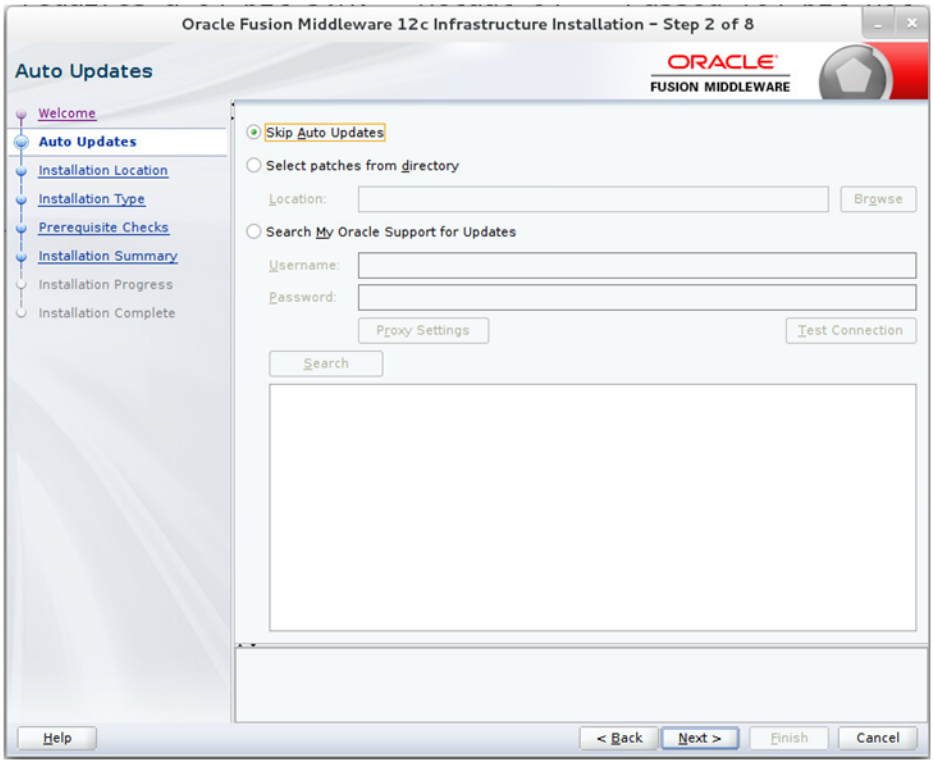
To obtain WebLogic 12c (12.2.1.4), go to the Oracle Technology Network and take the following steps.

1. Find fmw_12.2.1.4.0_infrastructure_Disk1_1of1.zip and download this file to your system.
2. Extract the contents of this zip file to your system. You will use the fmw_ 12.2.1.4.0_infrastructure.jar file to run the installer.
3. Run the installer by executing the jar file:

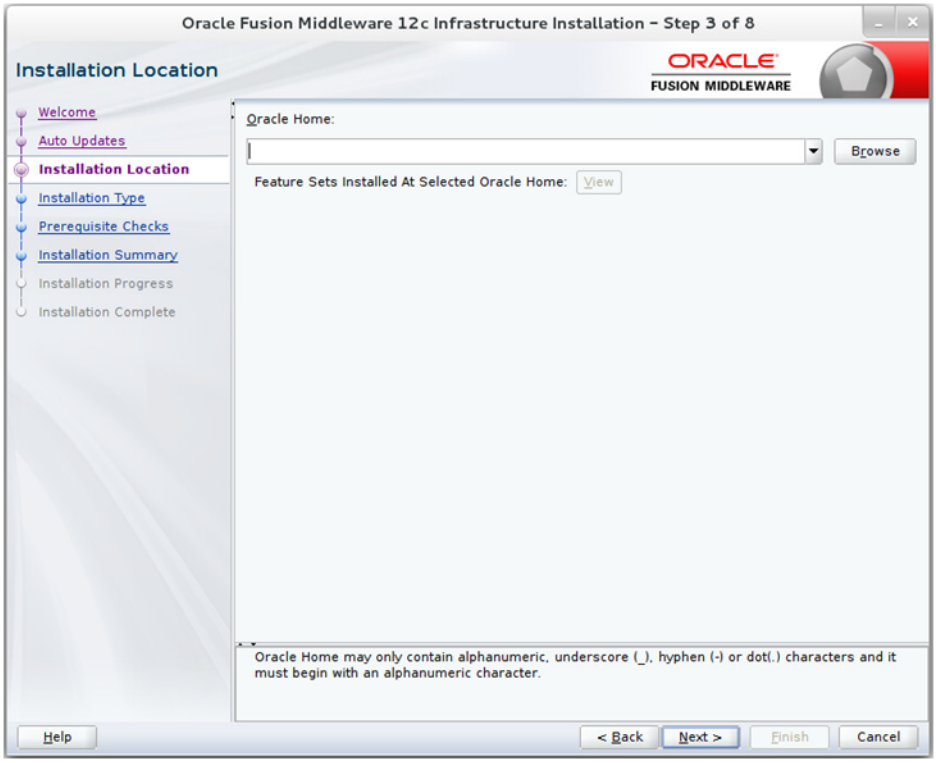
   java -jar fmw_12.2.1.4.0_infrastructure.jar

   The Welcome window appears.

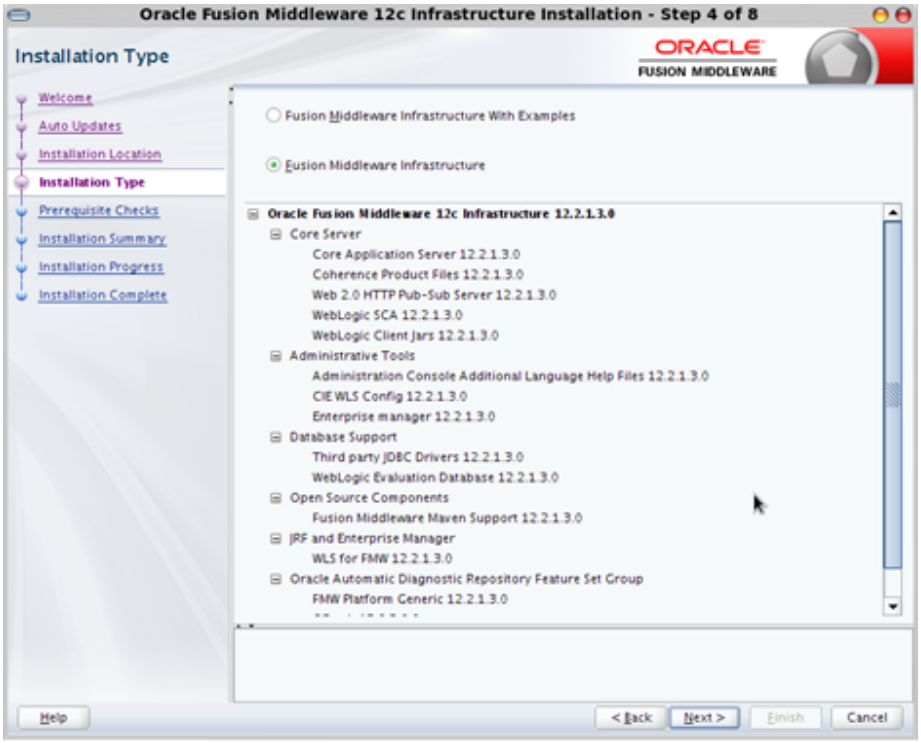
4. Click Next. The Auto Updates window appears.



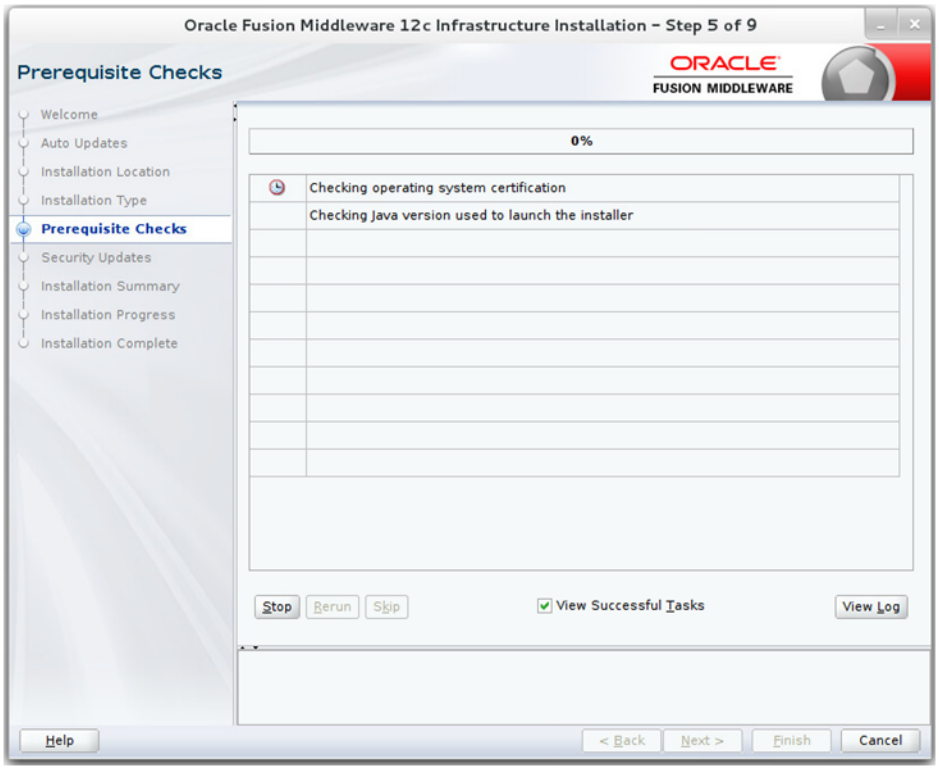
5. Select the appropriate radio button and click Next. The Installation Location window appears.



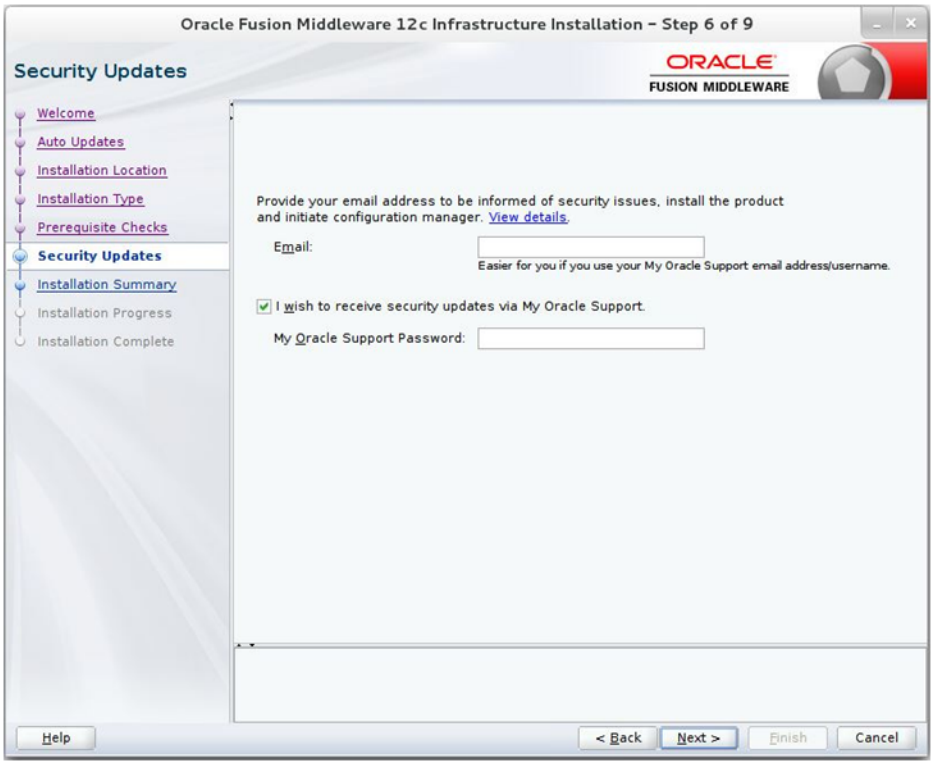
6. Click Browse to select the Oracle Home location where the Weblogic Server is to be installed.
7. Click Next. The Installation Type window appears.



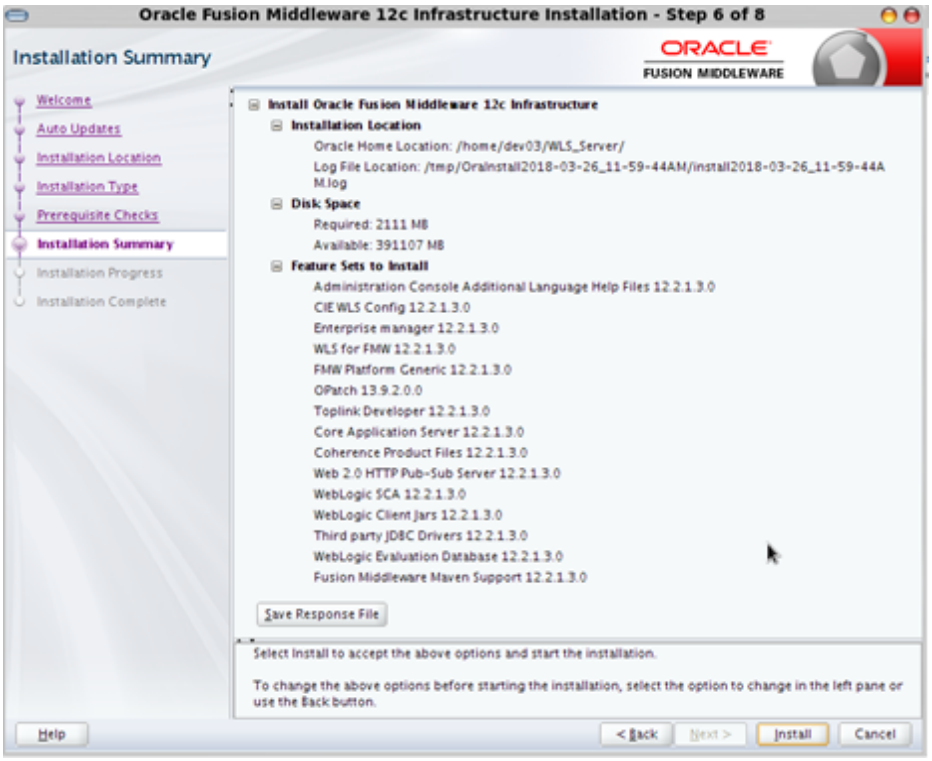
8. Select Fusion Middleware Infrastructure (JRF and Enterprise Manager) and click Next. The installer performs the pre-requisite checks and ensures all required conditions are satisfied.



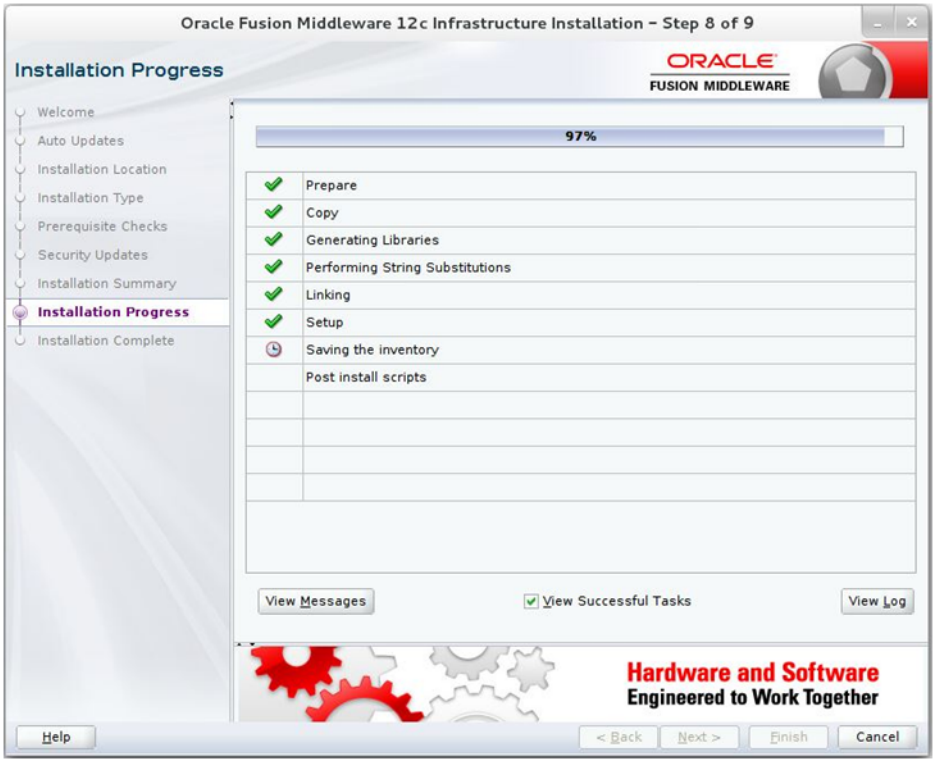
9. When the prerequisite check completes successfully, click Next. The Security Updates window appears.



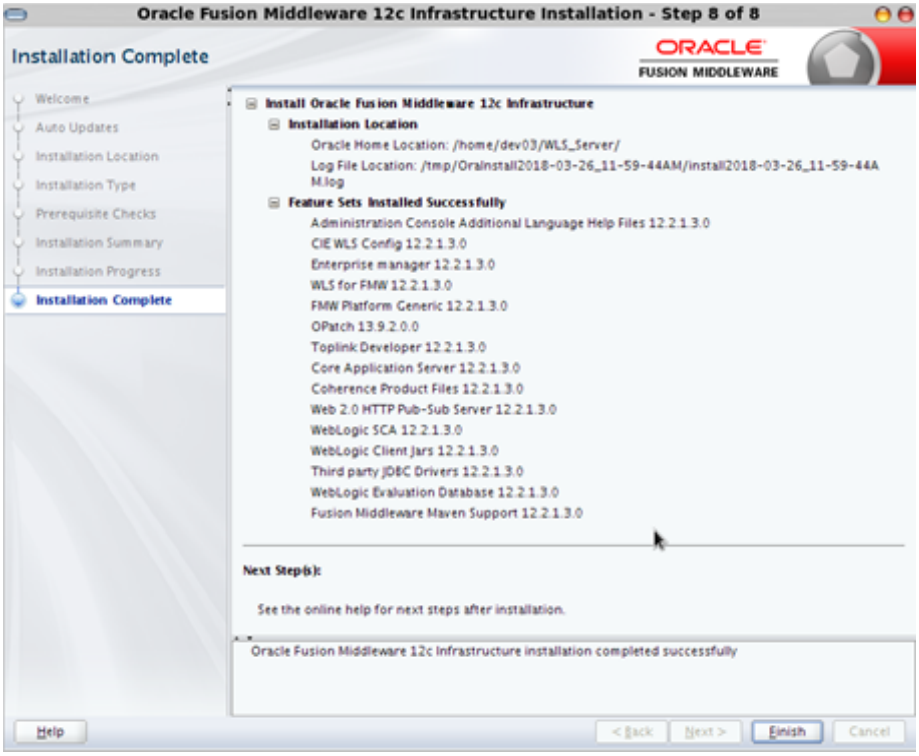
10. Provide information and click Next.



11. Click Install. The Installation Progress window appears.



12. Click Next when the installation completes. The Installation Complete window appears.

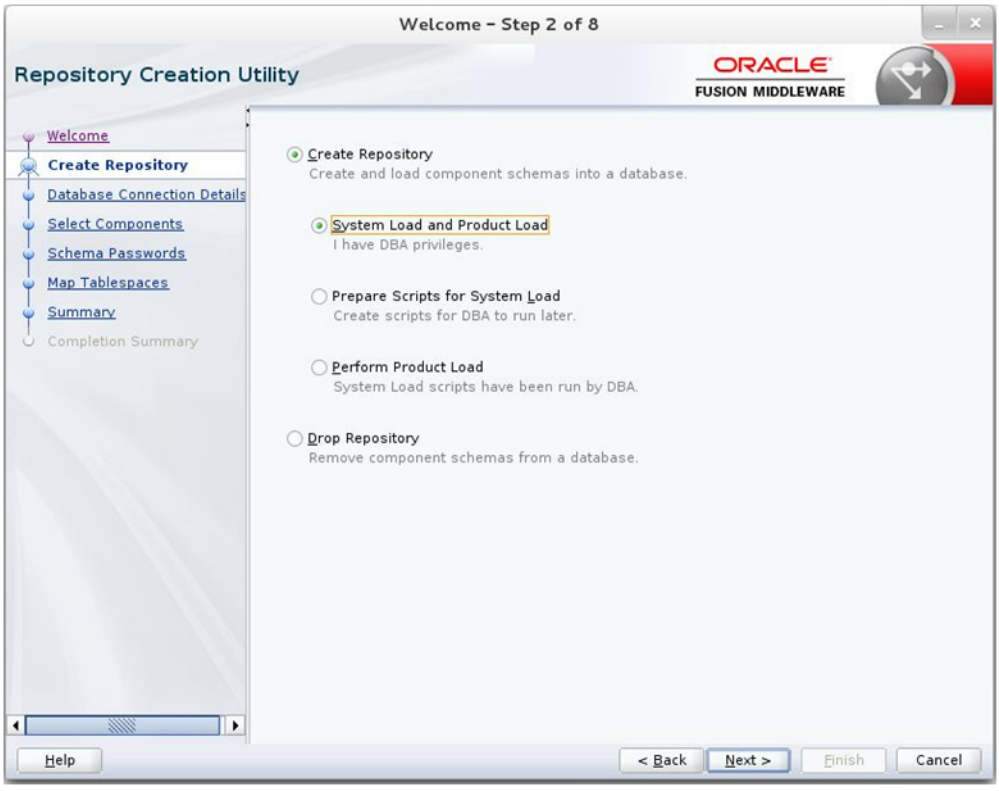


Creating the Required Schema Using the Repository Creation Utility

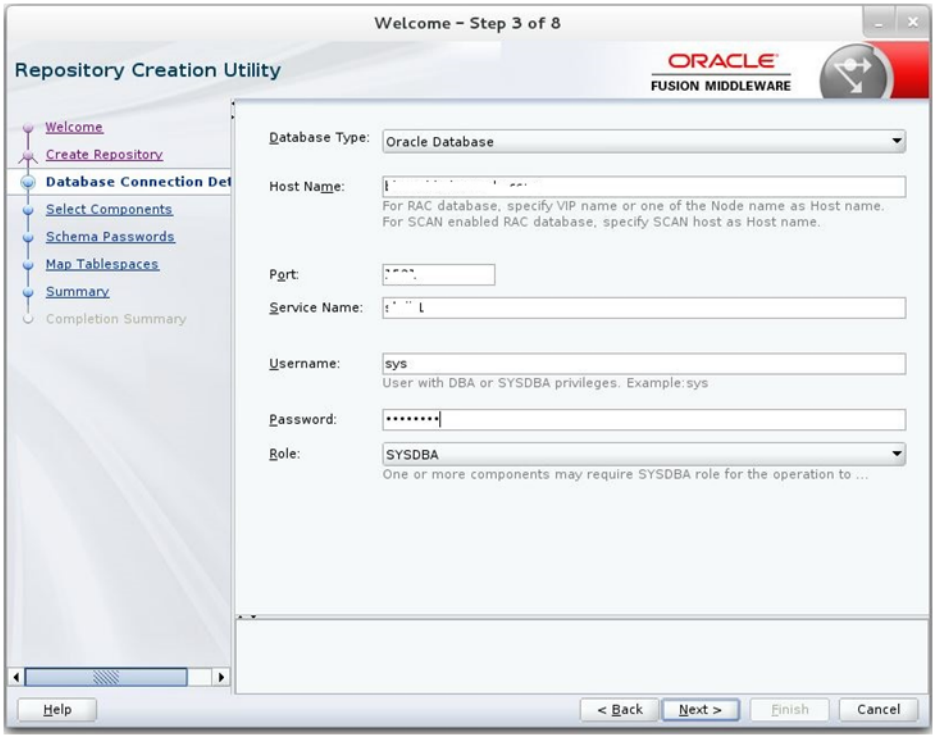
Perform the following procedure to create a schema user for the domain:

1. Run the RCU from the <MW_HOME>/oracle_common/bin folder. The Welcome window appears.

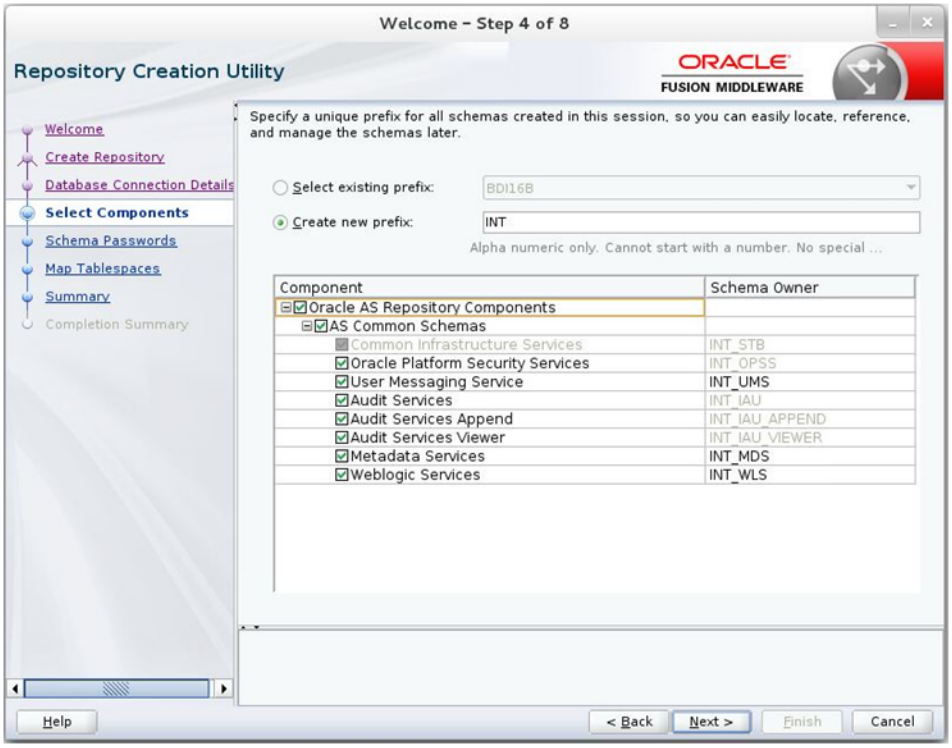
2. Click Next and select the Create Repository option.



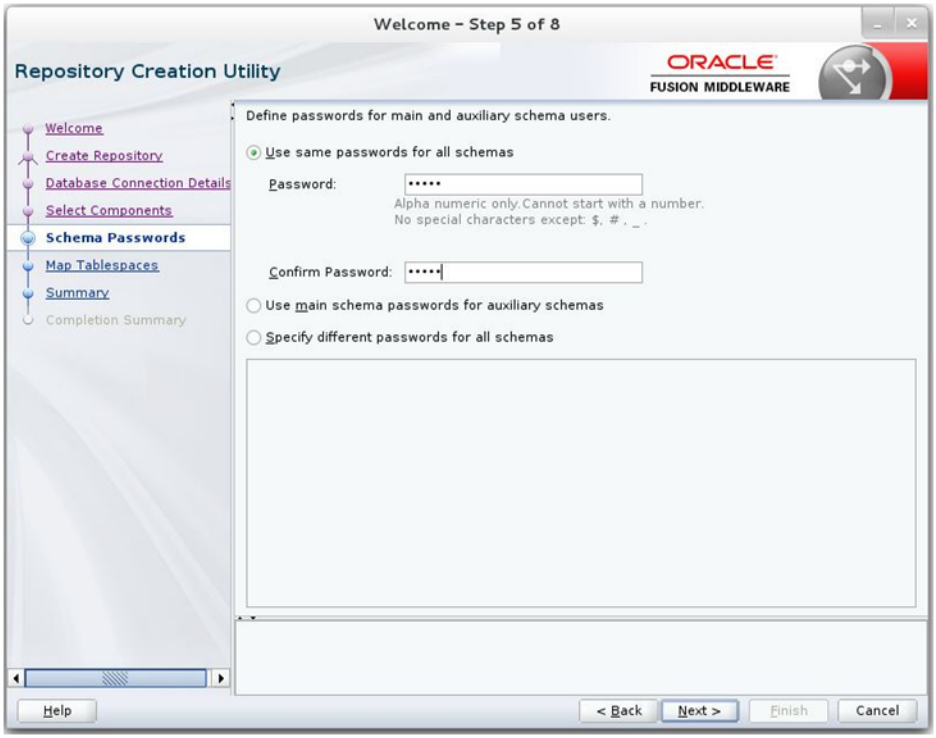
3. Click Next. Enter the database credentials where the schema user has to be created.



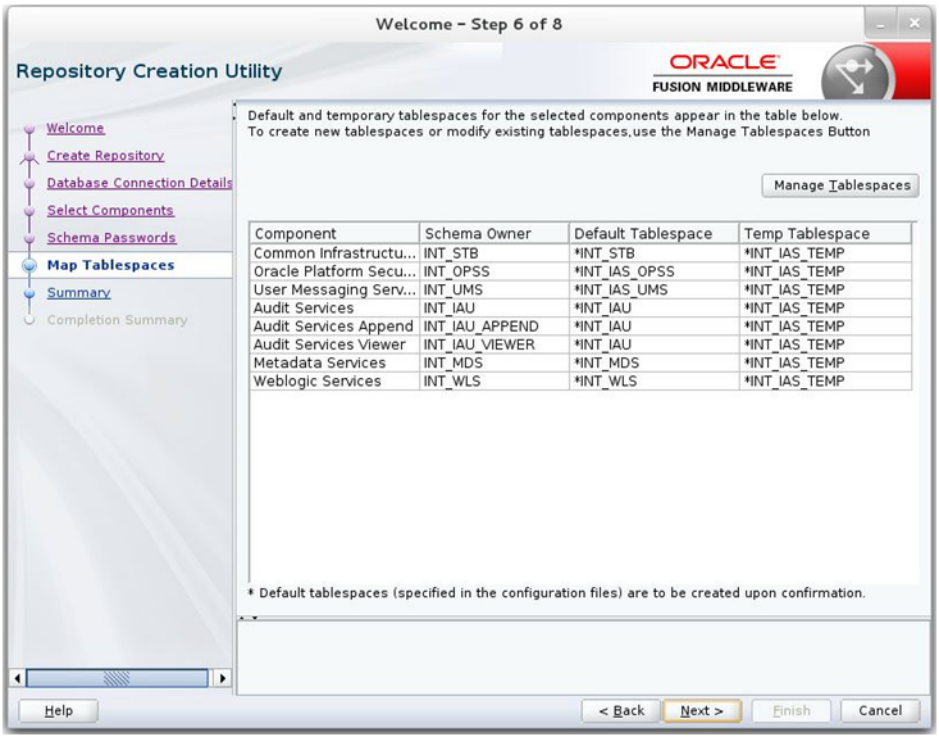
4. Click Next. Specify the prefix to be used for the schema user creation. For example, INT. Select Metadata Services, WebLogic Services, and Oracle Platform Security Services.



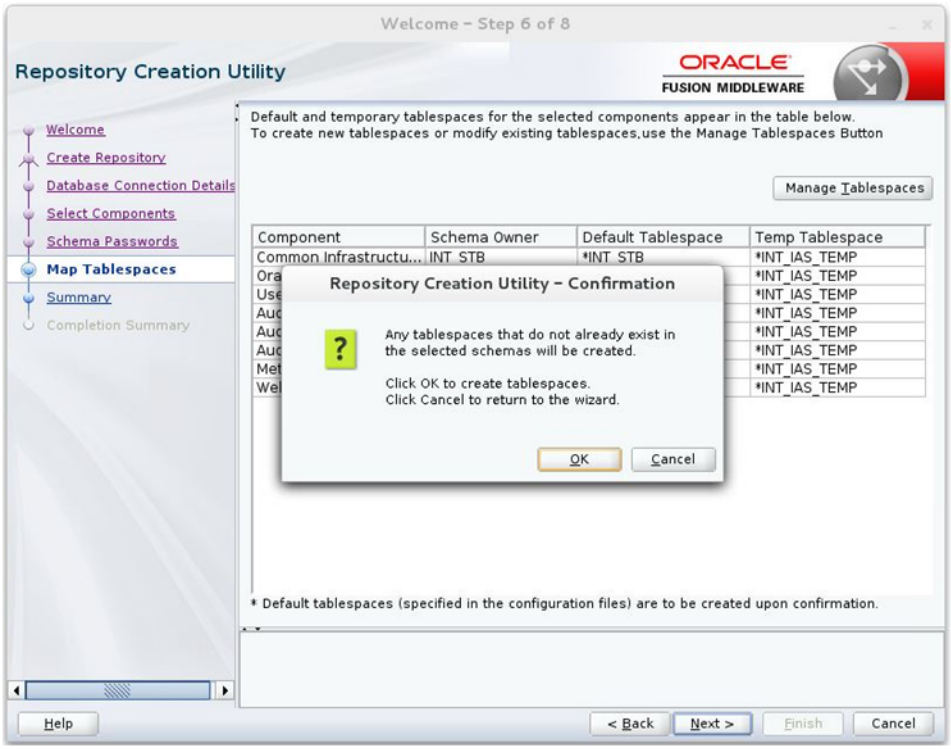
5. Click Next. Specify the password.



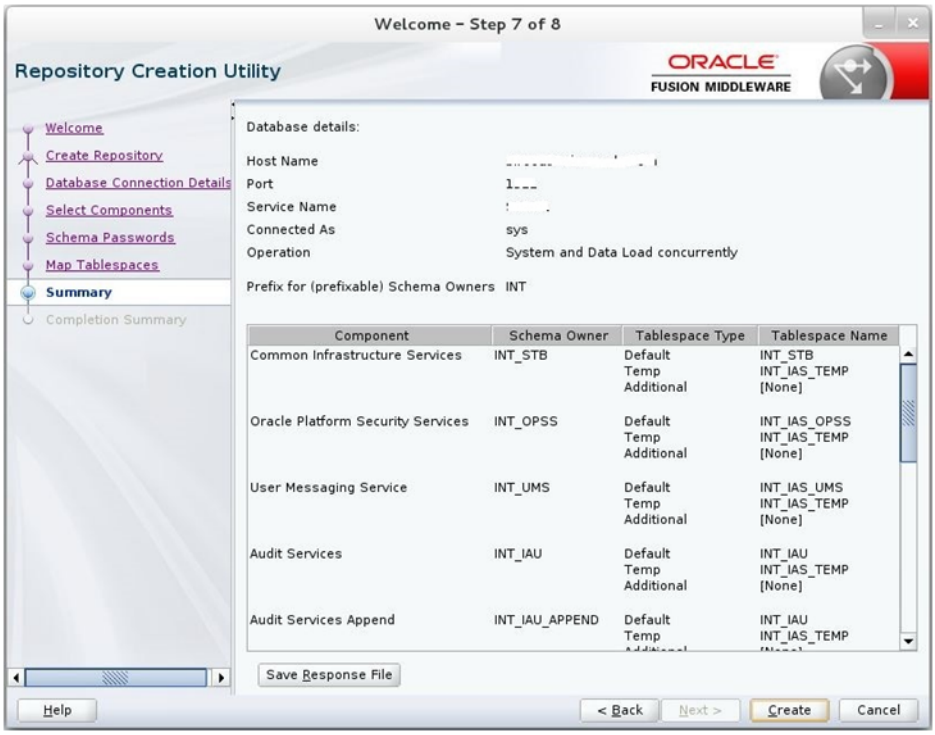
6. Click Next. The window provides the details of tablespaces created as part of schema creation.



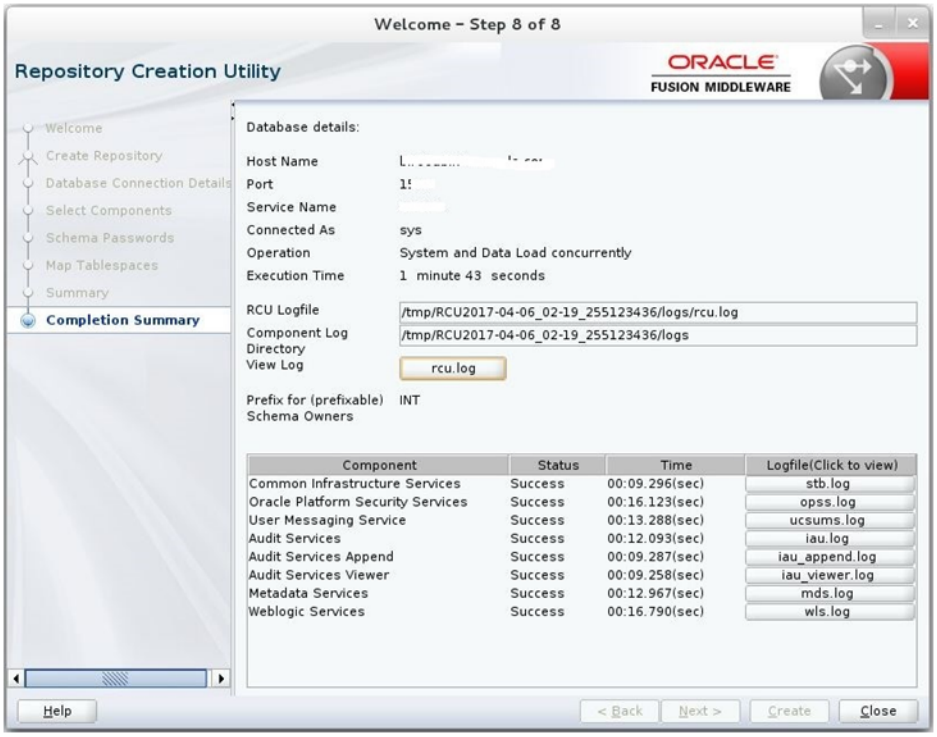
7. Click Next. The Confirmation window appears.



8. Click OK. The Summary window appears.



9. Click Create and proceed to create the schema. This could take a while to complete. The Completion Summary window appears.



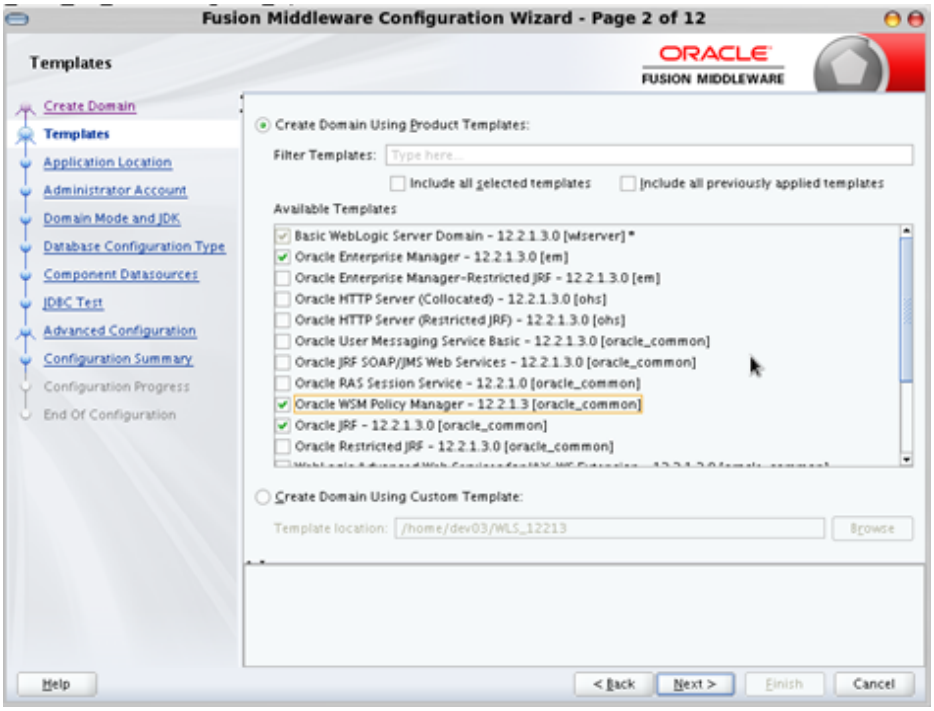
Creating a WebLogic Domain with JRF

Perform the following procedure to create a new WebLogic domain with JRF:

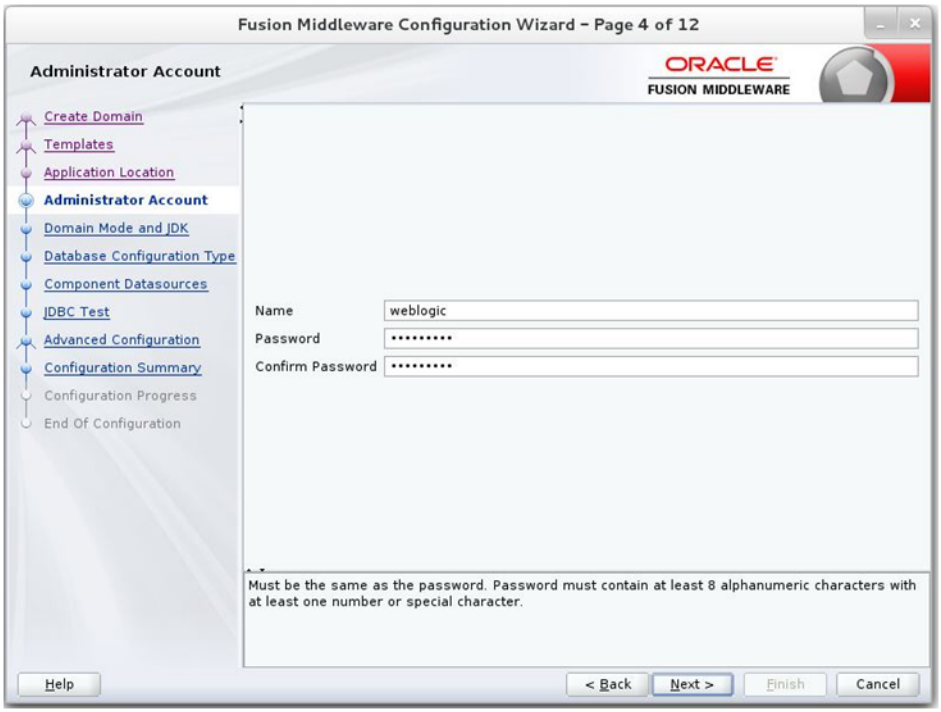
1. Run the config.sh from <ORACLE_HOME>/oracle_common/common/bin folder. The Configuration Type window appears.

2. Select Create a new domain, provide domain location, and click Next. The Templates window appears. By default, the Basic WebLogic Server Domain - 12.2.1.4 [wlserver] checkbox is selected.

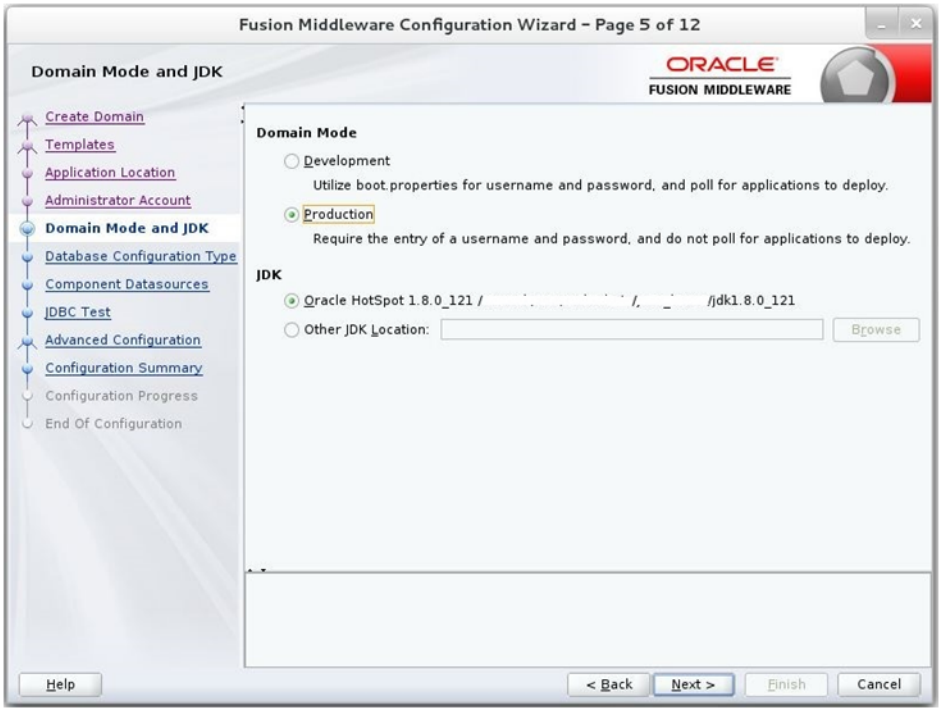
   Select the Oracle JRF - 12.2.1.4.0 [oracle_common], Oracle Enterprise Manager [em], and Oracle WSM Policy Manager - 12.2.1.4 [oracle_common] check boxes.



3. Click Next. The Administrator Account window appears. Enter the user credentials you want to use to log in to the WebLogic Administration Console.



4. Click Next. The Domain Mode and JDK window appears. Set the Domain Mode as Production and select the JDK version (JDK 1.8 with the latest security updates) you want to use.



5. Click Next. The Database Configuration Type window displays.
   a. Select the RCU Data radio button.

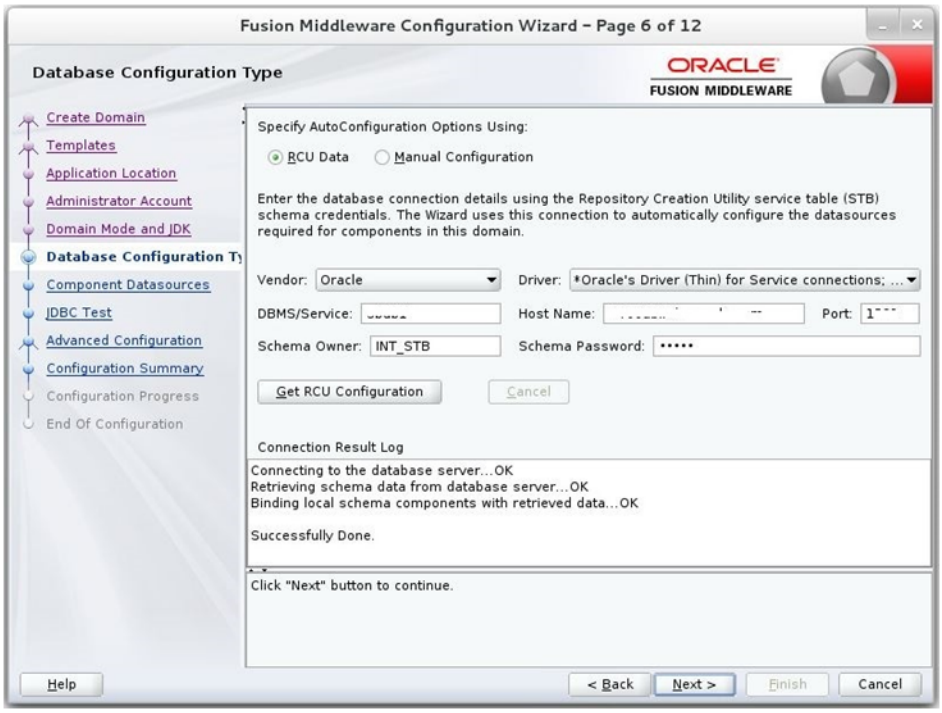
b. Select Oracle as the Vendor.

c. Select Oracle's Driver (Thin) for Service connections; Version 9.0.1 and later as the Driver.

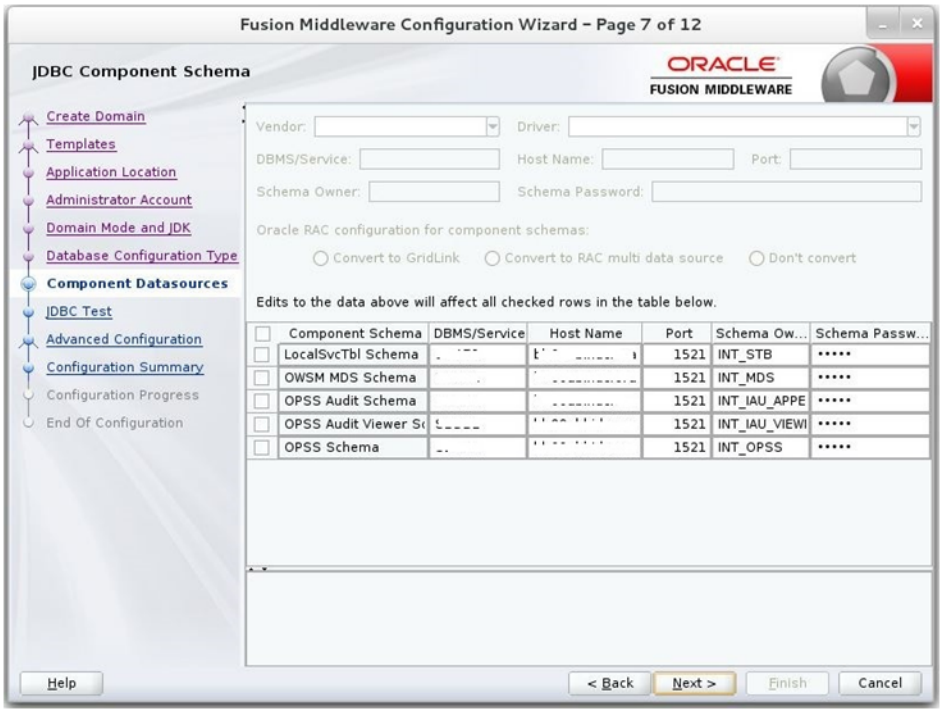
d. Enter the Service, Host Name, Port, Schema Owner, and Schema Password for the *_STB schema created using RCU.

e. Click Get RCU Configuration.

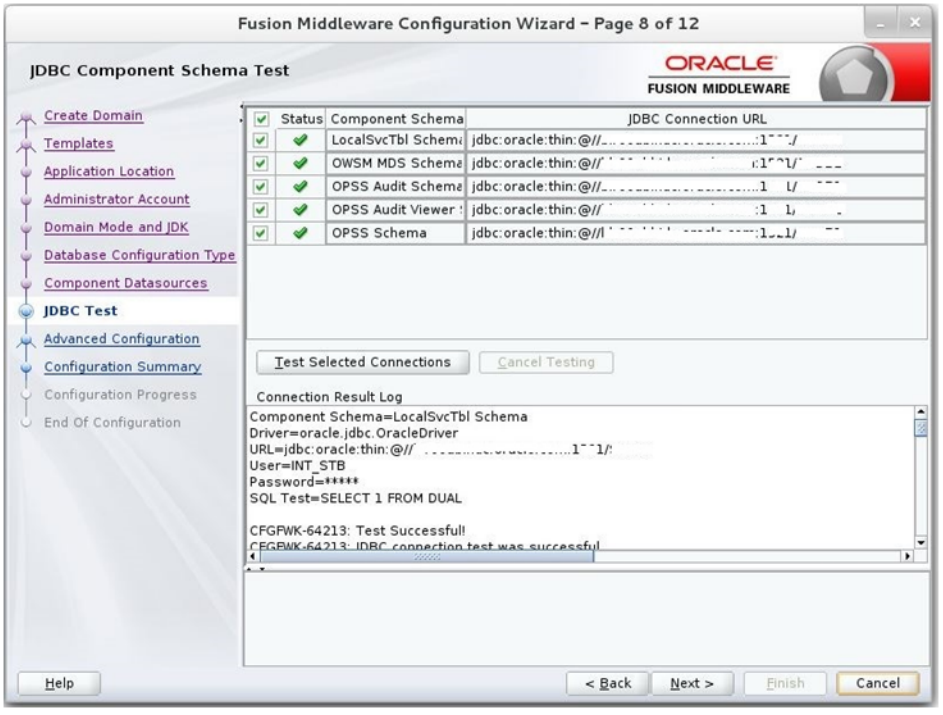
The Connection Result Log displays the connection status.



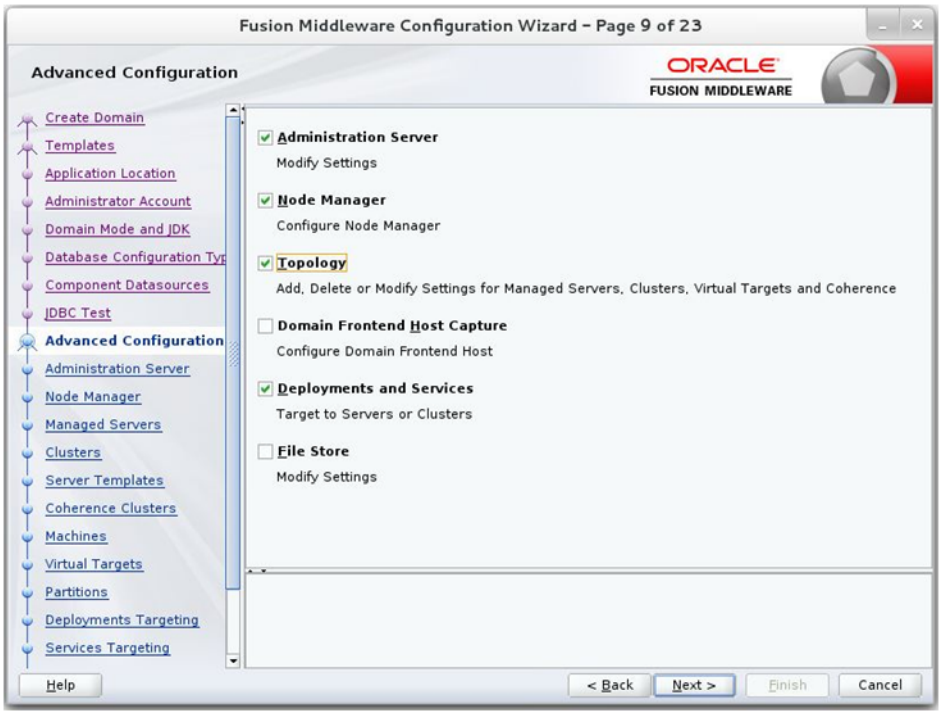
6. Click Next. The JDBC Component Schema window appears.



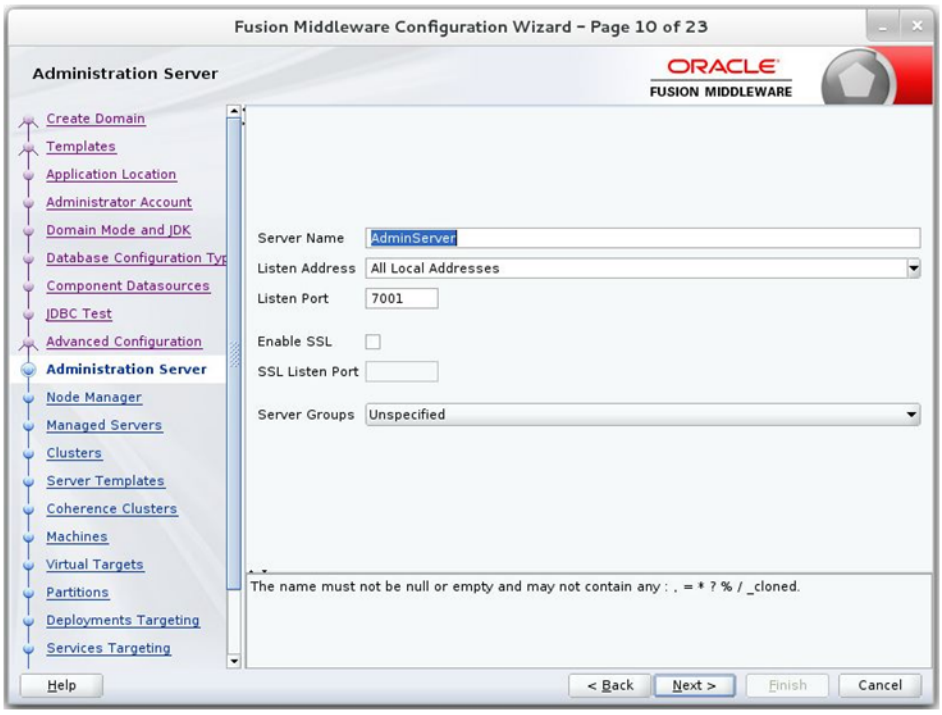
7. Click Next. The JDBC Component Schema Test window displays the status on whether the JDBC tests on the schemas were successful.



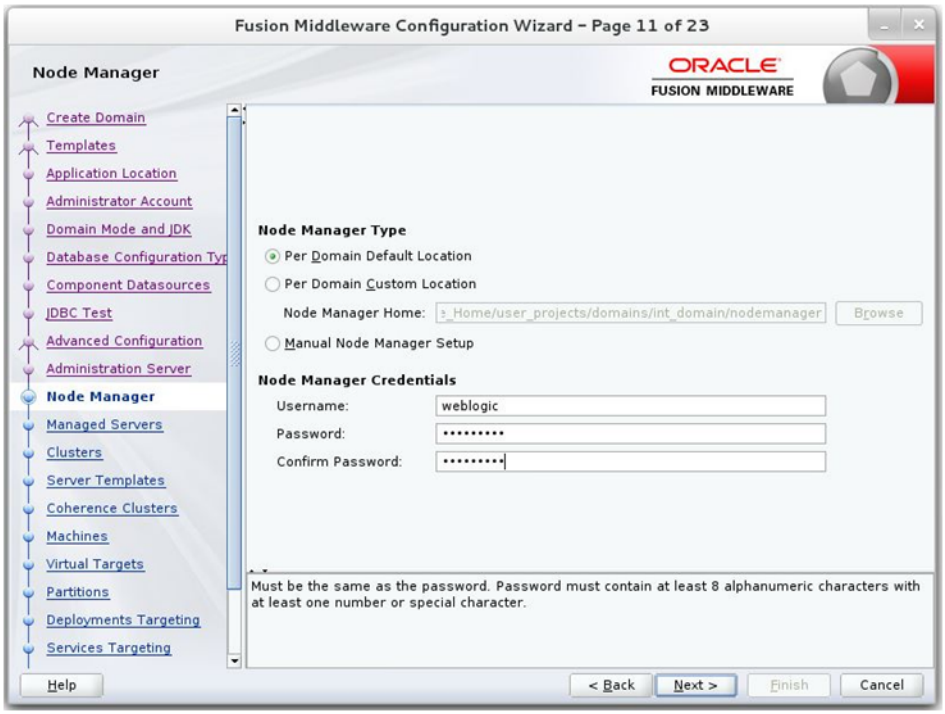
8. Click Next. The Advanced Configuration window displays. Select all the checkboxes, except Domain Frontend Host Capture and JMS File Store options, in this window.



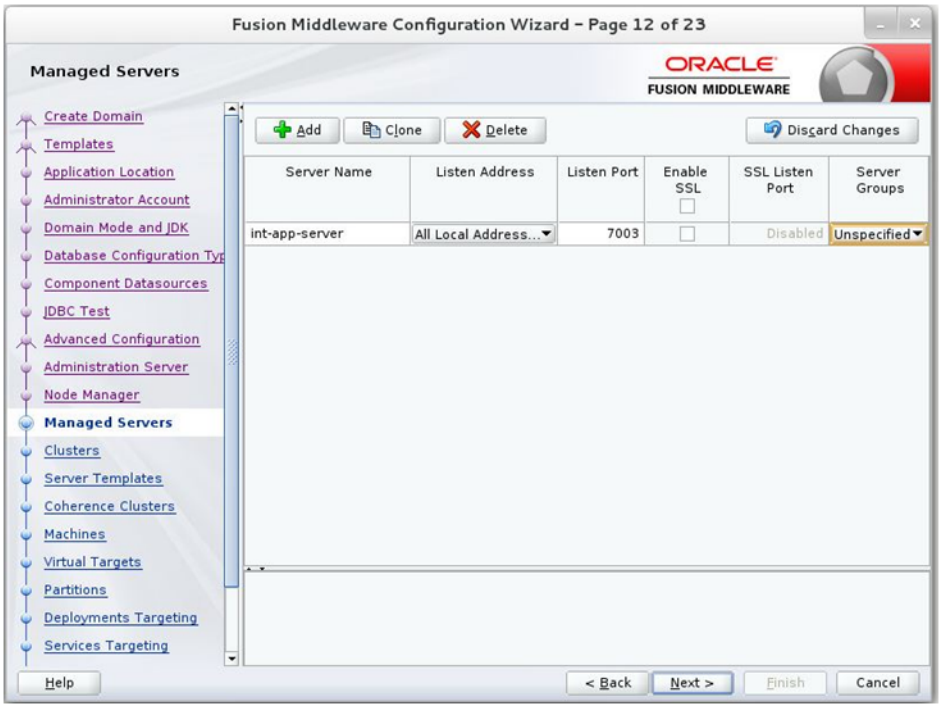
9. Click Next. The Administration Server window appears. Enter the Listen Address and the Listen Port details.



10. Click Next. The Node Manager window appears. Select the Node Manager Type and enter the Node Manager Credentials.

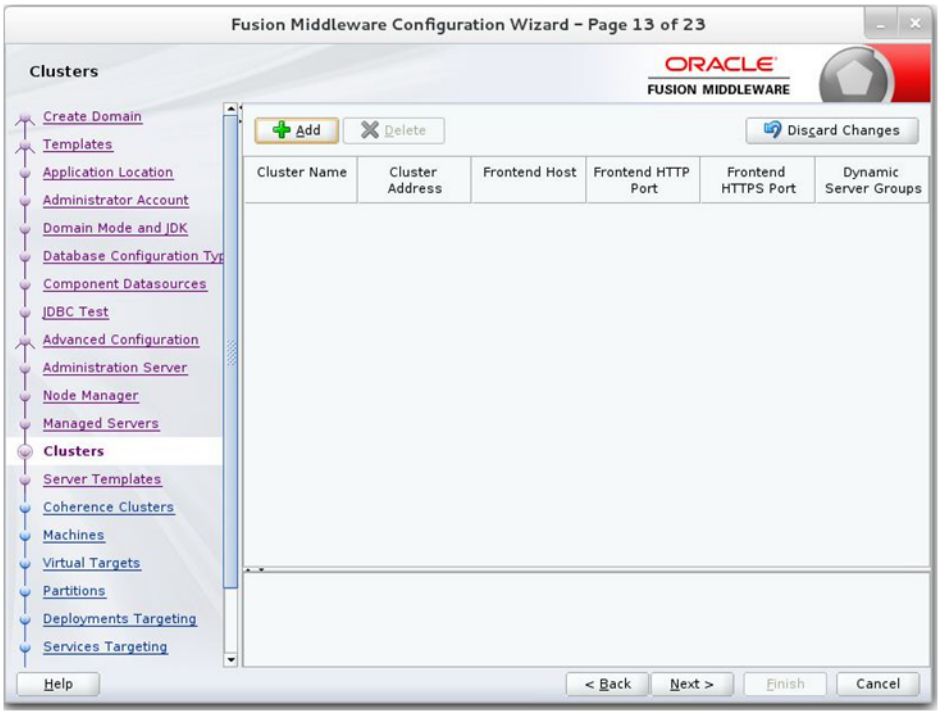


11. Click Next. The Managed Servers window appears.
    a. Click Add to add a managed server on which you will deploy the application.
    b. Enter the Server Name, Listen Address, and Listen Port for the managed server.
    c. Set the Server Groups to JRF-MAN-SVR.



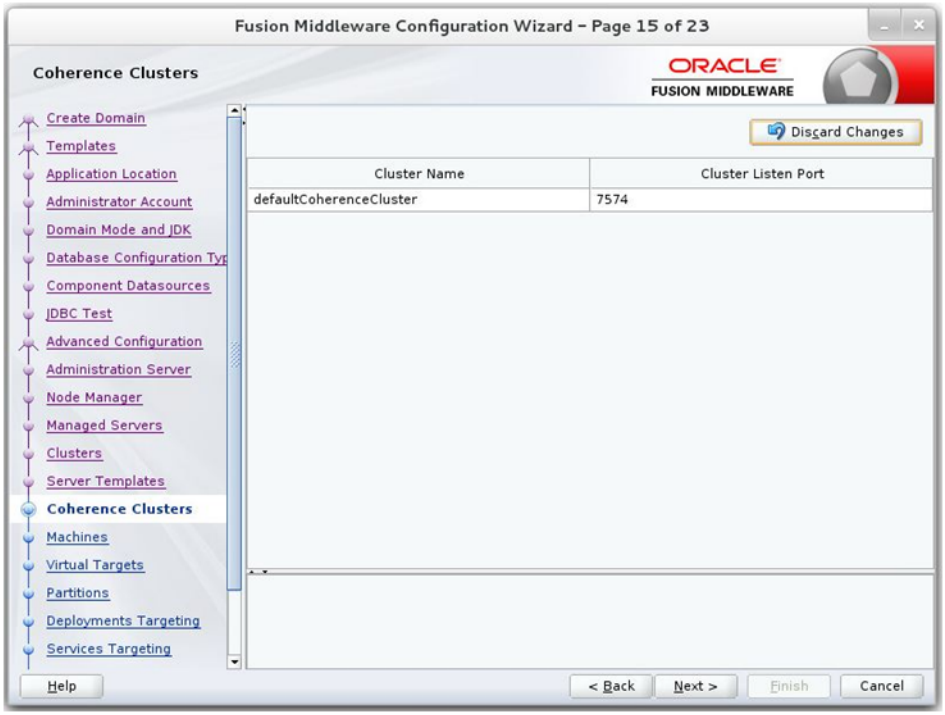
12. Click Next. The Clusters window appears.

a. Click Add to add a cluster. This is an optional step in the procedure.



13. Click Next. The Coherence Clusters window appears.

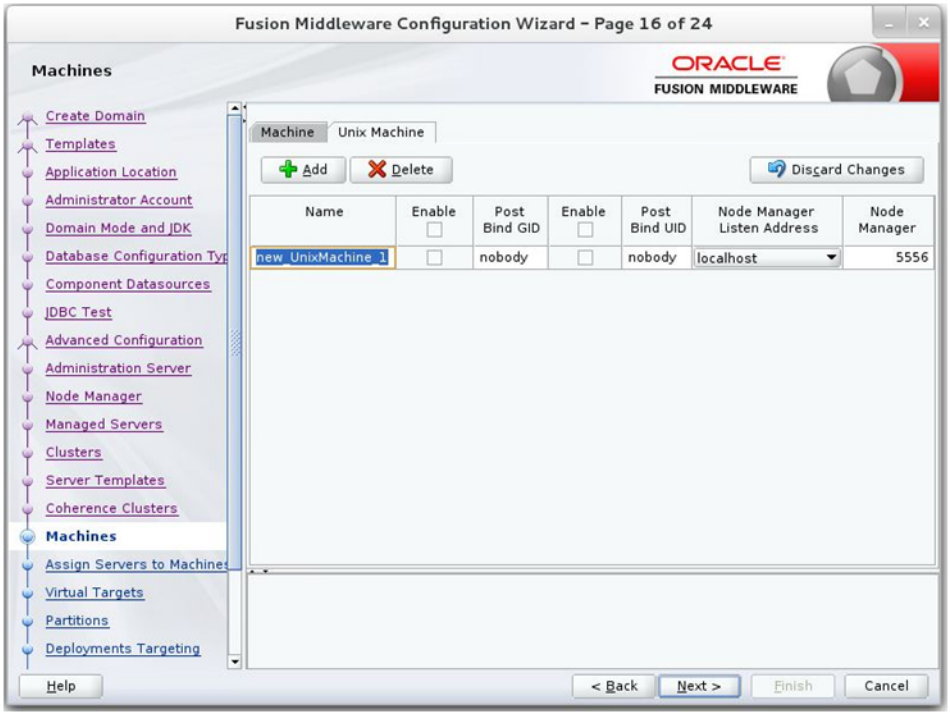
a. Add a coherence cluster. This is an optional step in the procedure.



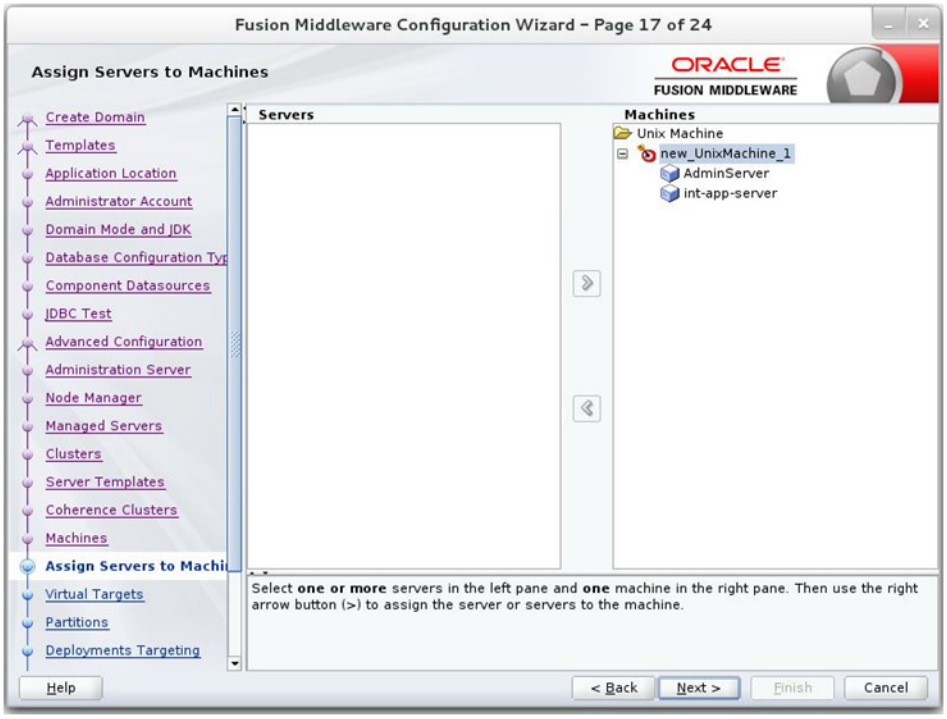
14. Click Next. The Machine window appears.

a. Click Add.

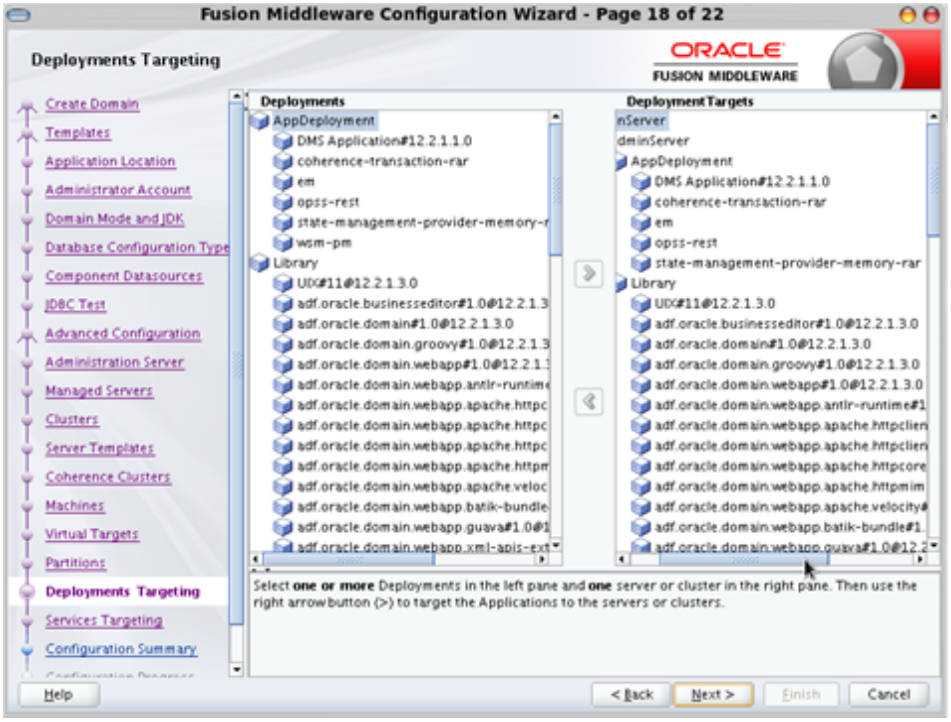
b. Enter the Name and the Node Manager Listen Address for the managed server.



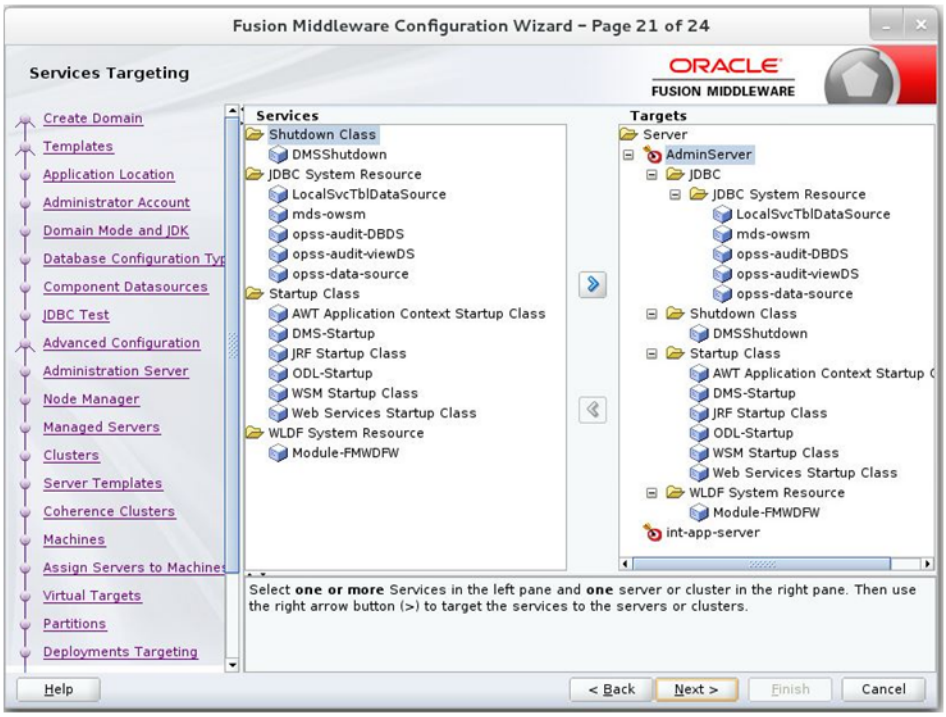
15. Click Next. The Assign Servers to Machines window appears. Add the Admin Server and the managed server to the computer.



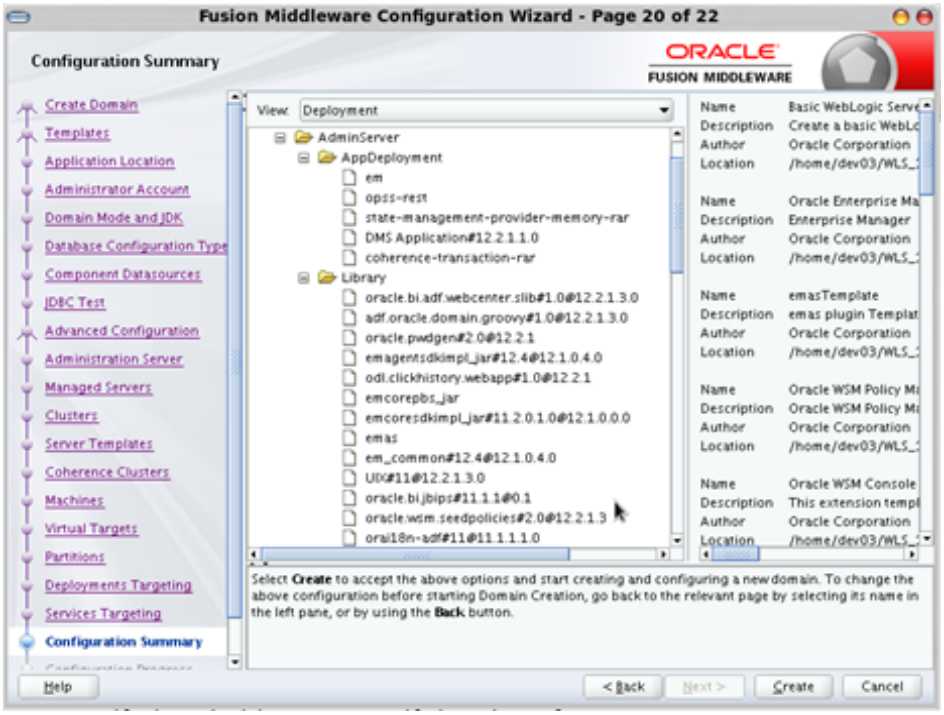
16. Click Next. The Deployments Targeting window appears. Select wsm-pm from Deployments and add it to Admin Server in Targets.



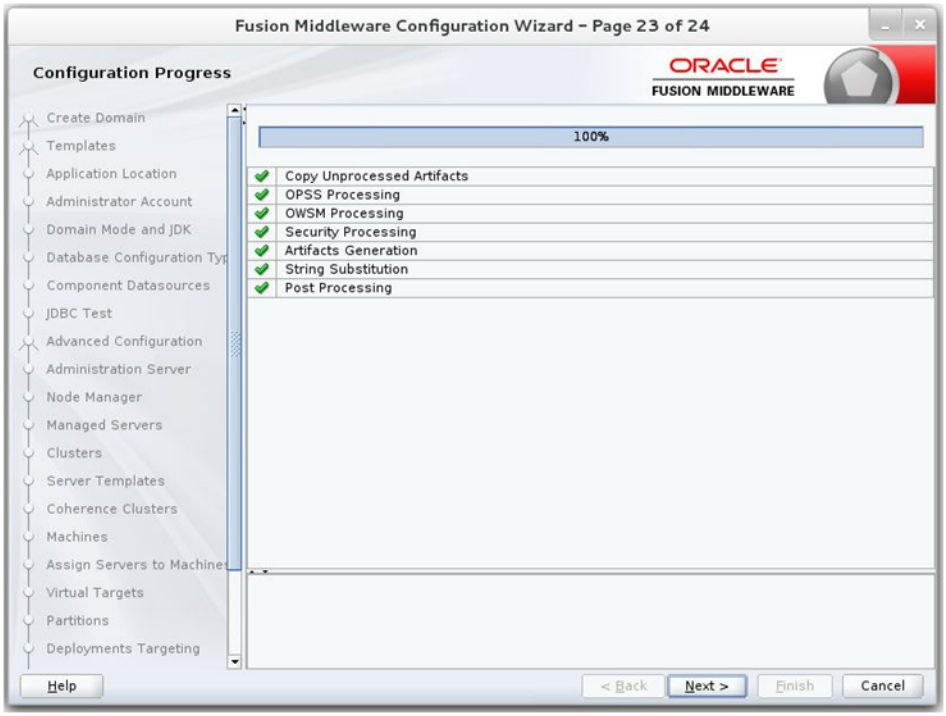
17. Click Next. The Services Targeting window appears.



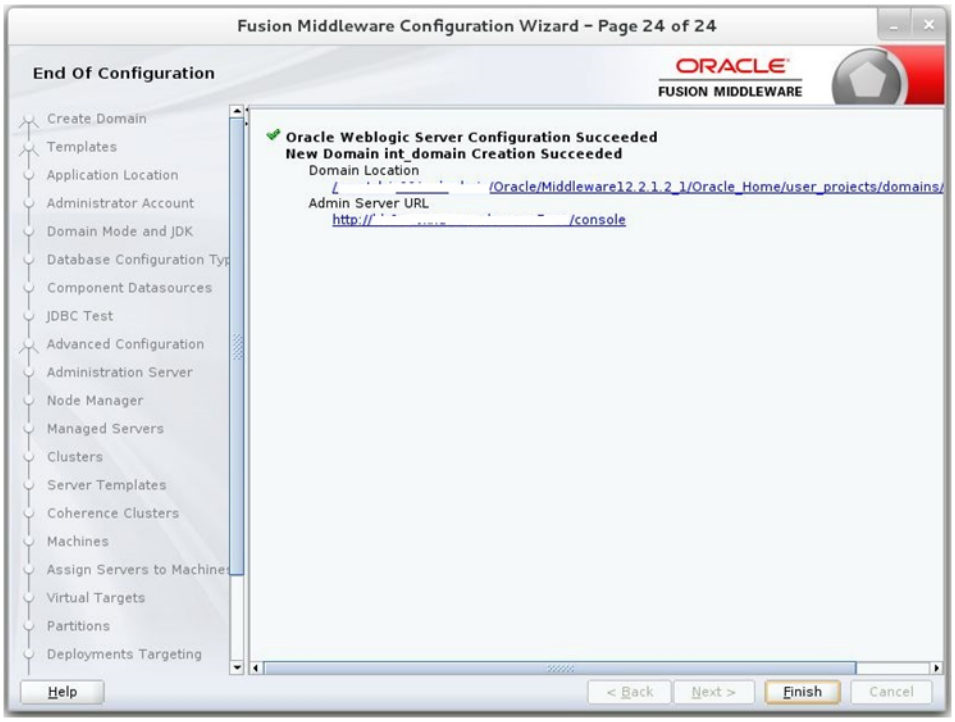
18. Click Next. The Configuration Summary window appears. Verify that all information described in this window is accurate.



19. Click Create. The Configuration Progress window displays a message when the domain is created successfully.



20. Click Next. The Configuration Success window displays the Domain Location and Admin Server URL once the configuration is complete.



21. Click Finish to complete creating the WebLogic domain and managed servers.
22. Add the following security policy to $ORACLE_HOME/wlserver/server/lib/weblogic.policy file.

```
grant codeBase "file:/<DOMAIN_HOME>/-" {
 permission java.security.AllPermission;
 permission oracle.security.jps.service.credstore.CredentialAccessPermission
"credstoressp.credstore", "read,write,update,delete";
 permission oracle.security.jps.service.credstore.CredentialAccessPermission
"credstoressp.credstore.*", "read,write,update,delete";
};
```

23. Start the Weblogic Admin and Manage Server.
24. Set JTA timeout to 43200.
    a. Log in to Admin console
    b. Click on the domain name
    c. Select the JTA tab and change the timeout value to 43200.

4

Deploying BDI Batch Job Administration Applications

Before starting the installation procedure, identify the retail applications that are in-scope for this installation. BDI requires at least 2 applications in-scope, a sender app and a receiver app. Each bdi-app must be deployed on its own WebLogic managed server. Depending on the site specific deployment topology, create separate WebLogic domains OR managed servers to host the BDI apps in-scope.

Note: Repeat the procedures in this chapter for installing other applications that are in-scope.

Deploying BDI Batch Job Admin Applications for a Sender Application

This section describes the installation process for a sender app with the BDI-RMS app as an example.

Preparing the Database for BDI Batch Job Admin for RMS Installation

Before you begin installing BDI RMS Batch Job Admin, make sure you have the database schema created for BDI RMS Batch Job Admin.

If you are migrating from previous version of BDI RMS Batch Job Admin to a newer version, Follow upgrade instructions for bdi.

Before following upgrade instructions for bdi, you need to provide permissions for database schema. Run the below commands on admin schema where database schema is created, to provide permissions.

Commands:

```
CREATE TABLE TO 'user schema';
CREATE SEQUENCE TO 'user schema';
CREATE INDEX TO 'user schema';
```

Ex: User schema name is bdi_rms_app. Run below commands on admin schema.

```
CREATE TABLE TO 'bdi_rms_app';
CREATE SEQUENCE TO 'bdi_rms_app';

CREATE INDEX TO 'bdi_rms_app';
```

Note: Auto migration is not available for on prem versions.

Preparing the WebLogic Domain for BDI Batch Job Admin for RMS

1. Use the instructions provided in Chapter 3, "BDI Batch Job Admin" to install WebLogic 12.2.1.4 and create a domain.
2. Start the Admin and managed servers.

Deploying BDI RMS Batch Job Admin on the WebLogic

To deploy the BDI RMS Batch Job Admin war, take the following steps.

1. Download BdiEdgeJobAdminPak19.0.1ForRms19.0.1_eng_ga.zip to $BDI_HOME.
2. Unzip the downloaded archive.The Bdi Job home directory will be created under the current directory.

```
unzip BdiEdgeJobAdminPak19.0.1ForRms19.0.1_eng_ga.zip
```

This command extracts the archive. The relevant directories for the installation are shown (There are more directories than what is shown).

```
|- - - - - - - bin
|                   ` - - - - - - bdi-job-admin-deployer.sh
|- - - - - - - conf
|                   ` - - - - - - security
|           |             `- - - - - - - - - jazn-data.xml
|           |             `- - - - - - - - - jps-config.xml
|                   ` - - - - - - bdi-job-admin-deployment-env-info.json
|                   ` - - - - - -
bdi-job-admin-deployment-env-info.json.template
|                   ` - - - - - - bdi-job-admin-internal-trust-store.jks
|                   ` - - - - - - log4j2.xml
|- - - - - - - dist
|                   ` - - - - - - bdi-batch-job-admin.war
|                   ` - - - - - - rms-jars
|                   ` - - - - - - README.txt
|- - - - - - - scripts
|                   ` - - - - - - DBSchemaMigration.groovy
|                   ` - - - - - - JobAdminDeployer.groovy
|                   ` - - - - - - README.txt
|                   ` - - - - - - WebLogicManager.groovy
|- - - - - - - setup-data
|                   ` - - - - - - dml
|           |             `- - - - - - - - - url_seed_data_1.sql
|           |             `- - - - - - - - - bdi_rms_seed_data.sql
|           |             `- - - - - - - - - BDI_SET_BATCHSTATUS_TO_ABANDON.sql
|           |             `- - - - - - - - - README.txt
|           |             `- - - - - - - - - rms_group_seed_data.sql
|                   ` - - - - - - available-jobs-for-external-app-integration
|                   ` - - - - - - batch-scripts
|           |             `- - - - - - - - - bdi_sftp_push.sh
|                   ` - - - - - - ddl
|           |             `- - - - - - - - - migration
|           |                                         `- - - - - - - - - BDI_
CLEANUP_JOB_SQL.sql
|           |                                         `- - - - - - - - - BDI_
Database_Util_Spec_Permission.sql
|           |                                         `- - - - - - - - - BDI_
Database_Util_Spec.sql
|           |                                         `- - - - - - - - - create_
wl_llr_table.sql
|           |                                         `- - - - - - - - -
```

```
migrate-edge-batch-schema-from-16.0.025-to-16.0.027.sql
|           |                                          `- - - - - - - -
migrate-edge-batch-schema-from-16.0.028-to-16.0.030.sql
|           |                                          `- - - - - - - -
migrate-edge-bdi-infra-schema-from-16.0.025-to-16.0.027.sql
|           |                                          `- - - - - - - -
migrate-edge-bdi-infra-schema-from-16.0.028-to-16.0.030.sql
|           |                                          `- - - - - - - -
migrate-schema-from-16.0.021-to-16.0.023.sql
|           |                                          `- - - - - - - -
migrate-schema-from-16.0.023-to-16.0.025.sql
|           |                                          `- - - - - - - -
migrate-schema-from-16.0.025-to-16.0.027.sql
|           |                                          `- - - - - - - -
migrate-schema-from-16.0.027-to-16.0.028.sql
|           |                                          `- - - - - - - -
migrate-schema-from-16.0.028-to-16.0.030.sql
|           |                                          `- - - - - - - -
migrate-schema-from-16.0.030-to-16.0.031.sql
|           |                                          `- - - - - - - -
migrate-schema-from-16.0.031-to-19.0.000.sql
|           |              `- - - - - - - - purge
|           |                                          `- - - - - - - - purge_
batch_db_repo.sql
|           |                                          `- - - - - - - - purge_
job_int_repo.sql
|           |                                          `- - - - - - - - purge_
job_rcvr_repo.sql
|           |              `- - - - - - - - README.txt
|                   ` - - - - - - META-INF
|                   ` - - - - - - batch-jobs
|- - - - - - - target
|                   ` - - - - - - rms-batch-job-admin.war
|                   ` - - - - - - README.txt
|- - - - - - - lib
```

> **Note:** To Integrate BDI-RMS with an external application, additional steps are required. Refer to Appendix A, "Appendix: Integrating BDI-RMS with External Applications" for additional information.

3. Edit the rms job configuration file to point to deployment environment (conf/bdi-job-admin-deployment-env-info.json) as follows:

   To deploy without OAuth, we need to rename or remove the OAuth2 aliases for example:- jobAdminUiOAuth2ApplicationClientAliasRef from bdi-job-admin-deployment-env-info.json, and then deploy. No other extra steps needed for deployment. See How to Install BDI without IDCS.

   ```
   cd bdi-edge-rms-job-home/conf
   vi  bdi-job-admin-deployment-env-info.json
   ```

4. Provide the following values in the JSON file.

Configuration Property	Description
RmsJobAdminDataSource -> jdbcUrl	The JDBC URL for the Oracle database where the RMS integration schema resides.

Configuration Property	Description
RmsReceiverServiceDataSource -> jdbcUrl	The JDBC URL for the Oracle database where the RMS Receiver integration schema resides. BdiRmsJobAdminDataSource and BdiRmsReceiverServiceDataSource can use the same jdbcUrl.
BatchInfraDataSource -> jdbcUrl	The JDBC URL for the schema created using RCU. The schema user is <prefix>_wls (e.g. INT_WLS). The value of prefix that you provided in schema creation using RCU.
JobXmlDataSource -> jdbcUrl	The JDBC URL for the Oracle database where the all job xmls gets created in rms schema.
JobAdminAppServer -> weblogicDomainName	The domain name where BDI RMS Admin app is deployed.
JobAdminAppServer->weblogicDomainHome	The domain path where BDIRMS Admin app is deployed
JobAdminAppServer -> weblogicDomainAdminServerUrl	Admin Server URL of the BDI RMS Admin App - http://<Admin host>:<Admin port>
JobAdminAppServer->weblogicDomainAdminServerProtocol	Admin Server protocol, which is by default t3, For SSL deployment update to t3s.
JobAdminAppServer -> weblogicDomainAdminServerHost	Host Name of the BDI RMS Admin Server
JobAdminAppServer -> weblogicDomainAdminServerPort	BDI RMS Admin Server Port
JobAdminAppServer -> weblogicDomainTargetManagedServerName	Managed Server Name where BDI RMS Admin App is installed (e.g. bdi-rms-server)
JobAdminAppServer -> jobAdminUiUrl	Job Admin URL of BDI RMS http://<host>:<managed server port>/bdi-rms-batch-job-admin
dataSourceProperties	DataSource configurations contributes to the performance of the applications at the runtime. Ex: "connectionPool_MaxCapacity":"100" "general_RowPreferfetchSize":"100"
RpasJobAdminAppServer -> jobAdminUiUrl	Job Admin URL of BDI RPAS http://<host>:<rpas managed server port>/rpas-batch-job-admin
SimJobAdminAppServer -> jobAdminUiUrl	Job Admin URL of BDI SIM http://<host>:<sim managed server port>/sim-batch-job-admin
RfiJobAdminAppServer-> jobAdminUiUrl	Job Admin URL of BDI RFI http://<host>:<sim managed server port>/bdi-rfi-batch-job-admin
OcdsJobAdminAppServer -> jobAdminUiUrl	Job Admin URL of BDI RFI http://<host>:<ocds managed server port>/ocds-batch-job-admin

Configuration Property	Description
ExternalJobAdminAppServer -> jobAdminUiUrl	Job Admin URL of BDI RFI http://<host>:<external managed server port>/external-batch-job-admin
oauth2AuthorizationServerUrl	Provide the IDCS url For example - https://idcs-4ff493196128425c80ce4ecbfc8352e5.identity.c9dev1.oc9qadev.com/oauth2/v1/token
jobAdminUiOAuth2ApplicationClientAliasRef	ICDS Client secret ID and password "name":"simJobAdminBaseUrlOAuth2ApplicationClientAlias", "value": "*simOauth2ApplicationClientAlias"
jobAdminUiOAuth2ApplicationClientAliasRef	"name":"rfiJobAdminBaseUrlOAuth2ApplicationClientAlias", "value": "*ricsOauth2ApplicationClientAlias"
jobAdminUiOAuth2ApplicationClientAliasRef	"name":"rpasJobAdminBaseUrlOAuth2ApplicationClientAlias", "value": "*rpasOauth2ApplicationClientAlias"
jobAdminUiOAuth2ApplicationClientAliasRef	ICDS Client secret ID and password "name":"ocdsJobAdminBaseUrlOAuth2ApplicationClientAlias", "value": "*ricsOauth2ApplicationClientAlias"
SystemOptions	Optional. Allows to provide system options as name value pairs

Note: The alias names in the configuration files should not be changed.

Below are the changes for bdi-job-admin-deployment-env-info.json.

- Below json snippet is to support OAuth2 with IDCS for Job Admin.

```
"CentralAuthenticationSystem":{
"IdcsAuthenticationProvider":{
"oauth2AuthorizationServerUrl":"https://idcs-4ff493196128425c80ce4ecbfc8352
e5.identity.c9dev1.oc9qadev.com/oauth2/v1/token",
"oauth2Application":[
{
"oauth2ApplicationName" : "RICS",
"oauth2ApplicationScopeOfAccess" :
{"name":"oauth2.default.scopeOfAccess.*", "val-ue":"urn:opc:idm:__myscopes_
_"},
"oauth2ApplicationClientAlias" : "ricsOauth2ApplicationClientAlias",
"oauth2ApplicationClientId" : "GET_FROM_WALLET",
"oauth2ApplicationClientSecret" : "GET_FROM_WALLET"
},
{
"oauth2ApplicationName" : "MFCS",
"oauth2ApplicationScopeOfAccess" :
{"name":"oauth2.default.scopeOfAccess.*", "val-ue":"urn:opc:idm:__myscopes_
_"},
"oauth2ApplicationClientAlias" : "mfcsOauth2ApplicationClientAlias",
"oauth2ApplicationClientId" : "GET_FROM_WALLET",
"oauth2ApplicationClientSecret" : "GET_FROM_WALLET"
},
{
"oauth2ApplicationName" : "RPAS",
```

```
"oauth2ApplicationScopeOfAccess" :
{"name":"oauth2.default.scopeOfAccess.*", "val-ue":"urn:opc:idm:__myscopes_
_"},
"oauth2ApplicationClientAlias" : "rpasOauth2ApplicationClientAlias",
"oauth2ApplicationClientId" : "GET_FROM_WALLET",
"oauth2ApplicationClientSecret" : "GET_FROM_WALLET"
}
]
},
"OamAuthenticationProvider":{
}
```

Optional – Users can configure system options in the deployment env info json file. Users have to add the system options as part of the configuration in the json file with name value pairs. After the application starts, the system option tables should have system options provided in the json filea=b and c=d values in the system options table. After deploying Jjob Admin, verify that values are getting added to the system option table properly.

Example:

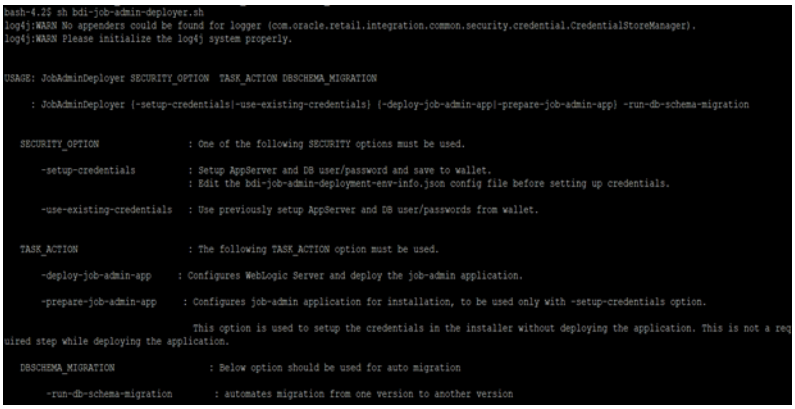
Job Admin JSON Snippet:

```
        "JobAdminApplication":{
            "appName":"rms",
            "JobAdminAppUses":[
                "JobAdminDataSource",
                "JobAdminAppServer",
                {
                    "RemoteJobAdminAppServers":[
                       "SimJobAdminAppServer",
                       "RfiJobAdminAppServer",
                       "RpasJobAdminAppServer",
                       "OcdsJobAdminAppServer",
                       "ExternalJobAdminAppServer"
                    ]
                }
            ],
             "SystemOptions":[
                {"name":"MFP_outboundLocation",
"value":"/replace/with/outbound/location/for/mfp"},
                {"name":"RDF_outboundLocation",
"value":"/replace/with/outbound/location/for/rdf"},
                {"name":"AP_outboundLocation",
"value":"/replace/with/outbound/location/for/ap"},
                {"name":"IP_outboundLocation",
"value":"/replace/with/outbound/location/for/ip"},
                {"name":"shellCmdWorkingDir",
"value":"/replace/with/path/to/working/dir/for/shellCmds"},
                {"name":"shellCmdLocationDir",
"value":"/replace/with/path/where/shell_programs/are/present"},
                {"name":"downloadFileLocation",
"value":"/replace/with/path/where/to/download_
files/before/files/move/to/finalOutboundLocation"},
                {"name":"overwriteOutboundFilesFlag", "value":"replace_with_
TRUE_or_FALSE"},
                {"name":"autoPurgeOutboundData.global", "value":"TRUE"},
                {"name":"autoPurgeOutboundDataDelay.global", "value":"30"},
                {"name":"MFP_sftpHost", "value":"replace_with_sftp_host_for_
mfp"},
                {"name":"RDF_sftpHost", "value":"replace_with_sftp_host_for_
```

```
rdf"},
                    {"name":"AP_sftpHost", "value":"replace_with_sftp_host_for_
ap"},
                    {"name":"IP_sftpHost", "value":"replace_with_sftp_host_for_
ip"},
                    {"name":"MFP_sftpPort", "value":"replace_with_sftp_port_for_
mfp"},
                    {"name":"RDF_sftpPort", "value":"replace_with_sftp_port_for_
rdf"},
                    {"name":"AP_sftpPort", "value":"replace_with_sftp_port_for_
ap"},
                    {"name":"IP_sftpPort", "value":"replace_with_sftp_port_for_
ip"},
                    {"name":"MFP_sftpUser", "value":"replace_with_sftp_user_for_
mfp"},
                    {"name":"RDF_sftpUser", "value":"replace_with_sftp_user_for_
rdf"},
                    {"name":"AP_sftpUser", "value":"replace_with_sftp_user_for_
ap"},
                    {"name":"IP_sftpUser", "value":"replace_with_sftp_user_for_
ip"},
                    {"name":"MFP_destinationLocation",
"value":"/replace/with/ftp/location/for/mfp"},
                    {"name":"RDF_destinationLocation",
"value":"/replace/with/ftp/location/for/rdf"},
                    {"name":"AP_destinationLocation",
"value":"/replace/with/ftp/location/for/ap"},
                    {"name":"IP_destinationLocation",
"value":"/replace/with/ftp/location/for/ip"},
                    {"name":"ftpFilesFlag", "value":"replace_with_TRUE_or_FALSE"}
                ]
            }
```

5. Run the deployer script to create the data sources and deploy BDI RMS Batch Job Admin. While deploying, the user needs to provide the IDCS client secret ID & password for ricsOauth2ApplicationClientAlias, mfcsOauth2ApplicationClientAlias, rpasOauth2ApplicationClientAlias

   ```
   cd bdi-edge-rms-job-home/bin
   bdi-job-admin-deployer.sh -setup-credentials -deploy-job-admin-app
   ```



6. Enter the values prompted by the script for following credentials aliases. JobAdmin user has more privileges (e.g change configuration and run jobs from JobAdmin UI) than JobOperator user. JobOperator can run batch jobs where as JobMonitor has just read privileges.

Alias	Description
bdiAppServerAdminServerUserAlias	WebLogic admin server credentials
rmsJobAdminUiUserAlias	Credentials for Admin Role user for Job Admin app
rmsJobOperatorUiUserAlias	Credentials for Operator Role user for Job Admin app
rmsJobMonitorUiUserAlias	Credentials for Monitor Role user for Job Admin app
rmsJobAdminDataSourceUserAlias	Credentials for the Data Source of the Job Admin Schema
rmsReceiverServiceDataSourceUserAlias	Credentials for the Data Source of the Job Receiver Schema
batchInfraDataSourceUserAlias	Credentials for the Data Source of the Batch Infra Schema
jobXmlDataSourceUserAlias	Credentials for the Data Source of the Job Xml Schema
rpasJobAdminBaseUrlUserAlias	BDI RPAS job admin app credentials
simJobAdminBaseUrlUserAlias	BDI SIM job admin app credentials
externalJobAdminBaseUrlUserAlias	BDI EXTERNAL job admin app credentials
rfiJobAdminBaseUrlUserAlias	BDI RFI job admin app credentials
ocdsJobAdminBaseUrlUserAlias	BDI OCDS job admin app credentials
jobAdminUiOAuth2ApplicationClientAliasRef	ICDS Client secret ID and password "name":"simJobAdminBaseUrlOAuth2ApplicationClientAlias", "value": '"*simOauth2ApplicationClientAlias"
jobAdminUiOAuth2ApplicationClientAliasRef	"name":"rfiJobAdminBaseUrlOAuth2ApplicationClientAlias", "value": '"*ricsOauth2ApplicationClientAlias"
jobAdminUiOAuth2ApplicationClientAliasRef	"name":"rpasJobAdminBaseUrlOAuth2ApplicationClientAlias", "value": '"*rpasOauth2ApplicationClientAlias"
jobAdminUiOAuth2ApplicationClientAliasRef	ICDS Client secret ID and password "name":"ocdsJobAdminBaseUrlOAuth2ApplicationClientAlias", "value": '"*ricsOauth2ApplicationClientAlias"

Note: If you have already configured the credentials and can use the same credentials (typically when redeploying the app), you can run the deployer with the -use-existing-credentials option as follows, and you will not be prompted for the credentials again for the deployment.

bdi-job-admin-deployer.sh *-use-existing-credentials -deploy-job-admin-app*

7. Deployer script deploys BDI RMS Batch Job Admin to the managed server.
8. Restrict access to the bdi-edge-rms-job-home folder:

```
cd bdi-edge-rms-job-home
chmod -R 700 .
```

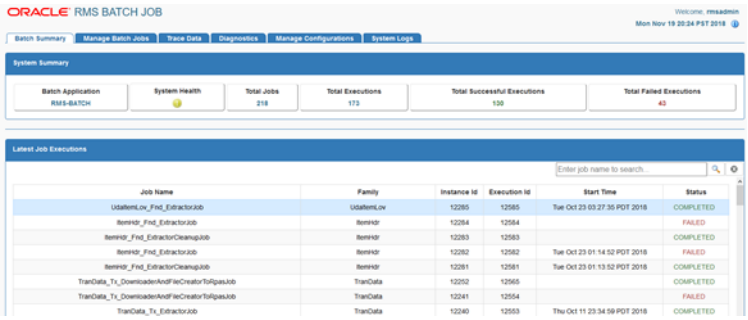
9. Bounce the Edge managed server.

Testing the Deployment

After you deploy to the server successfully, BDI RMS Batch Job Admin can be accessed using the following URL:

http://<server>:<port>/rms-batch-job-admin

Log in using credentials provided during the installation and verify that jobs are displayed in the Manage Batch Jobs tab and configuration is displayed in the Manage Configurations tab.



Creating Outbound Interface tables for BDI RMS

1. Go to the $BDI_HOME/bdi-edge-rms-job-home/setup-data/ddl folder.
2. Run the DDL script "bdi_rms_ddl.sql" provided in this folder in the BDI RMS database schema.
3. DDL generates interface tables and PL/SQL packages.

Deploying BDI Batch Job Admin Application for a Receiver Application

This section describes the installation process for a receiver app with the BDI-SIM app as an example. The same procedure can be used for installing other receiver applications like BDI RPAS.

Preparing the Database for BDI SIM Batch Job Admin Installation

Before you begin installing BDI SIM Batch Job Admin, make sure you have the database schema created for BDI SIM Batch Job Admin.

If you are migrating from previous version of BDI RMS Batch Job Admin to a newer version, Follow upgrade instructions for bdi.

Before following upgrade instructions for bdi, you need to provide permissions for database schema.

Run the below commands on admin schema where database schema is created, to provide permissions.

Commands:

```
CREATE TABLE TO 'user schema';
CREATE SEQUENCE TO 'user schema';
CREATE INDEX TO 'user schema';
```

Example: User schema name is bdi_rmsim_app. Run below commands on admin schema.

```
CREATE TABLE TO 'bdi_sim_app ;
CREATE SEQUENCE TO 'bdi_sim_app ;
CREATE INDEX TO 'bdi_sim_app ';
```

Note: Auto migration is not available for on prem versions.

Preparing the WebLogic Domain for BDI Batch Job Admin for SIM

1. Use the instructions provided above to install WebLogic 12.2.1.4 and create a domain.
2. Start the Admin and managed servers.

Deploying BDI SIM Batch Job Admin on the WebLogic

To deploy the BDI SIM Batch Job Admin war, take the following steps.

1. Download BdiEdgeJobAdminPak19.0.1ForSIM19.0.1_eng_ga.zip to $BDI_HOME.
2. Unzip the downloaded archive. The BDI Job home directory will be created under the current directory.

   unzip BdiEdgeJobAdminPak19.0.1ForSIM19.0.1_eng_ga.zip

   This command extracts the archive. The relevant directories for the installation are shown (There are more directories than what is shown).

```
|- - - - - - - bin
|                    ` - - - - - - bdi-job-admin-deployer.sh
|- - - - - - - conf
|                    ` - - - - - - security
|                    ` - - - - - - bdi-job-admin-deployment-env-info.json
|                    ` - - - - - -
bdi-job-admin-deployment-env-info.json.template
|                    ` - - - - - - bdi-job-admin-internal-trust-store.jks
|                    ` - - - - - - log4j2.xml
|- - - - - - - dist
|                    ` - - - - - - sim-jars
|           |             `- - - - - - - - - README.txt
|                    ` - - - - - - sim-batch-job-admin.war
|- - - - - - - scripts
|                    ` - - - - - - DBSchemaMigration.groovy
|                    ` - - - - - - JobAdminDeployer.groovy
|                    ` - - - - - - README.txt
|                    ` - - - - - - WebLogicManager.groovy
|- - - - - - - setup-data
|                    ` - - - - - - ddl
|           |             `- - - - - - - - migration
|           |                                        `- - - - - - - - BDI_
Database_Util_Spec_Permission.sql
|           |                                        `- - - - - - - - BDI_
Database_Util_Spec.sql
|           |                                        `- - - - - - - -  create_
wl_llr_table.sql
|           |                                        `- - - - - - - -
```

```
migrate-schema-from-16.0.021-to-16.0.023.sql
|           |                                          `- - - - - - - -
migrate-schema-from-16.0.023-to-16.0.025.sql
|           |                                          `- - - - - - - -
migrate-schema-from-16.0.025-to-16.0.027.sql
|           |                                          `- - - - - - - -
migrate-schema-from-16.0.027-to-16.0.028.sql
|           |                                          `- - - - - - - -
migrate-schema-from-16.0.028-to-16.0.030.sql
|           |                                          `- - - - - - - -
migrate-schema-from-16.0.030-to-16.0.031.sql
|           |                                          `- - - - - - - -
migrate-schema-from-16.0.031-to-19.0.000.sql
|                     ` - - - - - - dml
|           |               `- - - - - - - - - BDI_SET_BATCHSTATUS_TO_ABANDON.sql
|           |               `- - - - - - - - - bdi_sim_seed_data.sql
|           |               `- - - - - - - - - README.txt
|                     ` - - - - - - META-INF
|                     ` - - - - - - batch-jobs
|- - - - - - - target
|                     ` - - - - - - README.txt
```

3. Edit bdi-job-admin-deployment-env-info.json as follows:

```
cd bdi-edge-sim-job-home/conf
vi  bdi-job-admin-deployment-env-info.json
```

4. Provide the following values in the JSON file.

Configuration Property	Description
SimJobAdminDataSource ->jdbcUrl	The JDBC URL for the Oracle database where the SIM integration schema resides.
SimReceiverServiceDataSource -> jdbcUrl	The JDBC URL for the Oracle database where the SIM integration schema resides. Can use the same jdbcUrl.
BatchInfraDataSource -> jdbcUrl	The JDBC URL for the schema created using RCU. The schema user is <prefix>_ wls (e.g. INT_WLS). The value of prefix that you provided in schema creation using RCU.
JobAdminAppServer -> weblogicDomainName	The domain name where BDI SIM Admin app is deployed
JobAdminAppServer -> weblogicDomainHome	The domain home directory of WebLogic where BDI SIM Admin app is deployed
JobAdminAppServer -> weblogicDomainAdminServerUrl	Admin Server URL of the BDI SIM Admin App - http://<Admin host>:<Admin port>
JobAdminAppServer->weblogicDomainAdminServerProtocol	AdminServer protocol which is by default t3, For SSL deployment update to t3s.
JobAdminAppServer -> weblogicDomainAdminServerHost	Host Name of the BDI SIM Admin Server
JobAdminAppServer -> weblogicDomainAdminServerPort	BDI SIM Admin Server Port
JobAdminAppServer -> weblogicDomainTargetManagedServerName	Managed Server Name where BDI SIM Admin App is installed (e.g. bdi-sim-server)

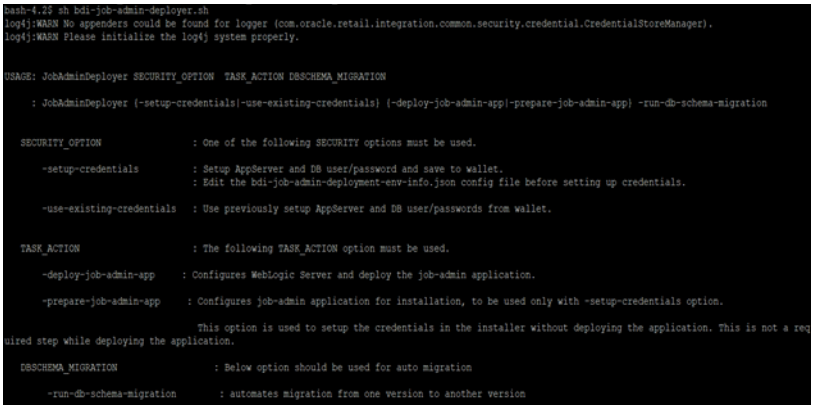
Configuration Property	Description
JobAdminAppServer -> jobAdminUiUrl	Job Admin URL of BDI SIM http://<host>:<bdi SIM managed server port>/sim-batch-job-admin
ExternalJobAdminAppServer -> jobAdminUiUrl	Job Admin URL of BDI EXTERNAL http://<host>:<bdi rms managed server port>/rms-batch-job-admin
SystemOptions	Optional. Allows to provide system options as name value pairs
RmsJobAdminAppServer -> jobAdminUiUrl	Job Admin URL of BDI RMS http://<host>:<bdi rms managed server port>/rms-batch-job-admin

Optional - Users can configure system options in the deployment env info json file. Users have to add the system options as part of the configuration in the json file with name value pairs. After the application starts, the system option tables should have system options provided in the json file a=b and c=d values in the system options table. After deploying job Admin, verify that values are getting added to the system option table properly.

```
"JobAdminApplication":{
            "appName":"sim",
            "JobAdminAppUses":[
                "JobAdminDataSource",
                "JobAdminAppServer",
                {
                    "RemoteJobAdminAppServers":[
                       "RmsJobAdminAppServer",
                       "ExternalJobAdminAppServer"
                    ]
                }
            ],
            "SystemOptions":[
                {"name":"jobSelection.1.pattern", "value":"ToExternalJob"},
                {"name":"jobSelection.1.initialState", "value":"false"},
                {"name":"jobSelection.2.pattern","value":"JOB_NAME1,JOB_
NAME2"},
                {"name":"jobSelection.2.initialState", "value":"true"}
            ]
        }
```

5. Run the deployer script to create the data sources and deploy BDI SIM Batch Job Admin.

```
cd bdi-edge-sim-job-home/bin
bdi-job-admin-deployer.sh -setup-credentials -deploy-job-admin-app
```



6. Enter the values prompted by the script for the following credential aliases. JobAdmin user has more privileges (e.g change configuration and run jobs from JobAdmin UI) than JobOperator user. JobOperator can run batch jobs where as JobMonitor has just read privileges.

Alias	Description
bdiAppServerAdminServerUserAlias	WebLogic admin server credentials
simJobAdminUiUserAlias	Credentials for Admin Role user for Job Admin app
simJobOperatorUiUserAlias	Credentials for Operator Role user for Job Admin app
simJobMonitorUiUserAlias	Credentials for Monitor Role user for Job Admin app
simJobAdminDataSourceUserAlias	Credentials for the Data Source of the Job Admin Schema
simReceiverServiceDataSourceUserAlias	Credentials for the Data Source of the Job Receiver Schema
batchInfraDataSourceUserAlias	Credentials for the Data Source of the Batch Infra Schema
externalJobAdminBaseUrlUserAlias	BDI SIM job admin app credentials
rmsJobAdminBaseUrlUserAlias	BDI RMS job admin app credentials

Note: If you have already configured the credentials and can use the same credentials (typically when redeploying the app), you can run the deployer with the -use-existing-credentials option as follows, and you will not be prompted for the credentials again for the deployment.

bdi-job-admin-deployer.sh -use-existing-credentials -deploy-job-admin-app

7. Deployer script deploys BDI SIM Batch Job Admin to the server.
8. Restrict access to the bdi-edge-sim-job-home folder:

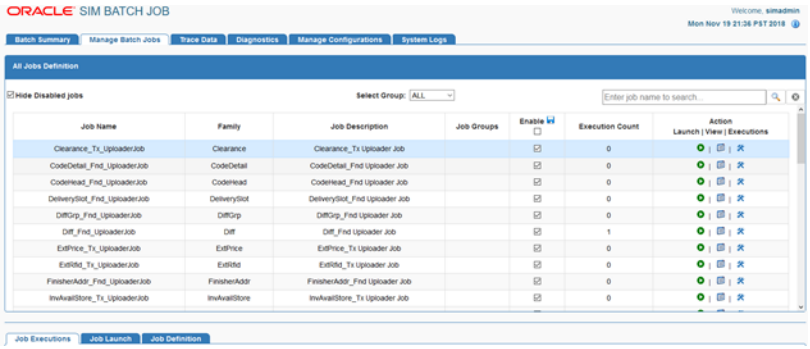
```
cd bdi-edge-sim-job-home
chmod -R 700 .
```

Testing the Deployment

After you deploy to the server successfully, the BDI SIM Batch Job Admin can be accessed using the following URL:

http://<server>:<port>/sim-batch-job-admin

Log in using credentials provided during the installation and verify that jobs are displayed in the Manage Batch Jobs tab and configuration is displayed in the Manage Configurations tab.



Creating Inbound Interface tables for BDI SIM

1. Go to $BDI_HOME/bdi-edge-SIM-job-home/setup-data/ddl folder.
2. Run the DDL script "SIM.sql" provided in this folder in the BDI SIM database schema.
3. DDL generates the inbound interface tables for SIM.

Note: BDI SIM inbound interface tables are created in the SIM database schema instead of the BDI SIM database schema. The BDI SIM database schema will have synonyms for BDI SIM inbound interface tables.

Upgrade Instructions for BDI

BDI Edge JobAdmin App (BdiEdgeJobAdminPak16.0.xFor<app>16.0.x_eng_ga.zip) Upgrade Steps

1. Download BdiEdgeJobAdminPak19.0.1For<app>19.0.1_eng_ga.zip to $BDI_HOME
2. Take the backup of existing bdi-<app>-home.
3. Login to the BDI Edge Job App (Example: http://host:17011/rms-batch-job-admin)
4. Go to Manage Configurations -> System Options and make following changes. LOADJOBDEF = TRUE and LOADSEEDDATA = TRUE.
5. Login to the WLS Console and delete the existing Edge App.
6. Delete existing BDI datasources from WLS console, for any datasources changes planned during deployment.
7. Modify bdi job flow configuration file (conf/bdi-job-admin-deployment-env-info.json) to support OAuth2 feature. Below

property needs to be updated in json file. Remaining property values should be same as backed up bdi-<app>-home. Click here to see new changes in bdi-job-admin-deployment-env-info.json. The deployment description json format has changed from previous release, to accommodate IDCS client credentials and URL.

"oauth2AuthorizationServerUrl":"https://idcs-4ff493196128425c80ce4ecbfc8352e5.identity.c9dev1.oc9qadev.com/oauth2/v1/token" ? Replace with IDCS server url.

8. To deploy without OAuth, we need to rename or remove the OAuth2 aliases for example:- jobAdminUiOAuth2ApplicationClientAliasRef from bdi-job-admin-deployment-env-info.json, and then deploy. No other extra steps needed for deployment. See How to Install BDI without IDCS.
9. Deploy the BDI Edge job app using -setup-credential option (Follow BDI Installation Guide). -use-existing-credential option will not work the first time, since there is a new entry (IDCS client credentials) now. While deploying user needs to provide the IDCS client secret ID & password for ricsOauth2ApplicationClientAlias, mfcsOauth2ApplicationClientAlias, rpasOauth2ApplicationClientAlias. Cd to <appName>-job-home/bin and run the below command to upgrade and deploy the bdi job app.

```
sh bdi-job-admin-deployer.sh -use-existing-credentials }
-deploy-job-admin-app
```

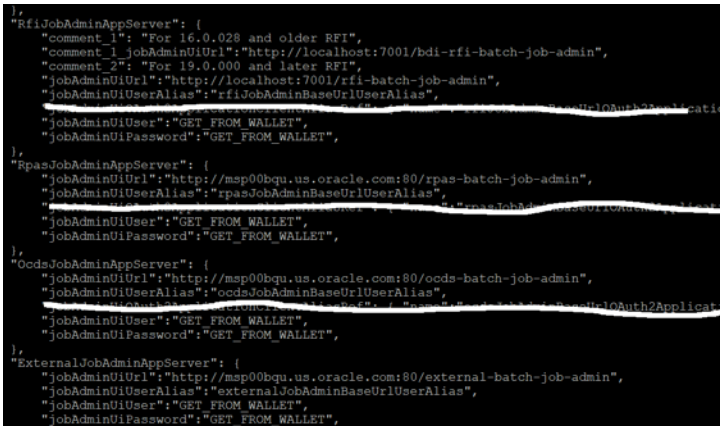
> **Note:** Auto migration is not available for on prem versions.

10. After successful deployment, bounce the managed server.
11. Login to BDI Edge Job App and make sure no error is displayed in any of the pages.

> **Note:** BDI does not mandate the use of OAuth2 or IDCS as authorization server. This version of the BDI is backward compatible with basicAuth. New on-prem customers can use basicAuth by following the below steps. Existing customers can use upgrade instructions and proceed to use basicAuth as the authentication mechanism.

How to Install BDI without IDCS

1. To deploy without OAuth, we need to rename or remove the OAuth2 aliases for example:- jobAdminUiOAuth2ApplicationClientAliasRef from bdi-job-admin-deployment-env-info.json, and then deploy. No other extra steps needed for deployment.



```
"SimJobAdminAppServer": {
                    "jobAdminUiUrl":"http://localhost:7001/sim-batch-job-admin",
                    "jobAdminUiUserAlias":"simJobAdminBaseUrlUserAlias",
                    "jobAdminUiUser":"GET_FROM_WALLET",
                    "jobAdminUiPassword":"GET_FROM_WALLET",
                },
                "RfiJobAdminAppServer": {
                    "comment_1": "For 16.0.028 and older RFI",
                    "comment_1_
    jobAdminUiUrl":"http://localhost:7001/bdi-rfi-batch-job-admin",
                    "comment_2": "For 19.0.100 and later RFI",
                    "jobAdminUiUrl":"http://localhost:7001/rfi-batch-job-admin",
                    "jobAdminUiUserAlias":"rfiJobAdminBaseUrlUserAlias",
                    "jobAdminUiUser":"GET_FROM_WALLET",
                    "jobAdminUiPassword":"GET_FROM_WALLET",
                },
                "RpasJobAdminAppServer": {
                    "jobAdminUiUrl":"http://localhost:7001/rpas-batch-job-admin",
                    "jobAdminUiUserAlias":"rpasJobAdminBaseUrlUserAlias",
                    "jobAdminUiUser":"GET_FROM_WALLET",
                    "jobAdminUiPassword":"GET_FROM_WALLET",
                },
                "OcdsJobAdminAppServer": {
                    "jobAdminUiUrl":"http:// localhost:7001/ocds-batch-job-admin",
                    "jobAdminUiUserAlias":"ocdsJobAdminBaseUrlUserAlias",
                    "jobAdminUiUser":"GET_FROM_WALLET",
                    "jobAdminUiPassword":"GET_FROM_WALLET",
                },
                "ExternalJobAdminAppServer": {

    "jobAdminUiUrl":"http://localhost:7001/external-batch-job-admin",
                    "jobAdminUiUserAlias":"externalJobAdminBaseUrlUserAlias",
                    "jobAdminUiUser":"GET_FROM_WALLET",
                    "jobAdminUiPassword":"GET_FROM_WALLET",
                }
            },
            "CentralAuthenticationSystem":{

                "IdcsAuthenticationProvider":{


    "oauth2AuthorizationServerUrl":"https://idcs-4ff493196128425c80ce4ecbfc8352e5.i
    dentity.c9dev1.oc9qadev.com/oauth2/v1/token",
                    "oauth2Application":[
                        {
```

```
                        "oauth2ApplicationName" : "RICS",
                        "oauth2ApplicationScopeOfAccess" :
{"name":"oauth2.default.scopeOfAccess.*", "value":"urn:opc:idm:__myscopes__"},
                        "oauth2ApplicationClientAlias" :
"ricsOauth2ApplicationClientAlias",
                        "oauth2ApplicationClientId" : "GET_FROM_WALLET",
                        "oauth2ApplicationClientSecret" : "GET_FROM_WALLET"

                    },
                    {
                        "oauth2ApplicationName" : "MFCS",
                        "oauth2ApplicationScopeOfAccess" :
{"name":"oauth2.default.scopeOfAccess.*", "value":"urn:opc:idm:__myscopes__"},
                        "oauth2ApplicationClientAlias" :
"mfcsOauth2ApplicationClientAlias",
```

2. Continue with regular installation

> **Note:** In case any similar errors like ORA-00942: table or view does not exist Verify if the corresponding tables present in the schema or not, as there are cases where Bdi<App>ReceiverServiceDataSource and Bdi<App>JobAdminDataSource might have configured to different schemas.RTG maintains only one migration script for upgrades. Please ignore those errors.

The following changes have been introduced to the BDI Edge RMS Job Admin Configuration file in 19.0.1 Release

1. For BDI RFI the application has been renamed from BdiIntJobAdminPak<VERSION>ForRfi<VERSION>_eng_ga.zip to BdiEdgeAppJobAdminPak<VERSION>ForRfi<VERSION>_eng_ga.zip, due to this change the BDI RMS Configuration for BDI RFI has also changed:

```
 "RfiJobAdminAppServer": {
                "comment_1": "For 16.0.028 and older RFI",
                "comment_1_
jobAdminUiUrl":"http://localhost:7001/bdi-rfi-batch-job-admin",
                "comment_2": "For 19.0.00019.0.1 and later RFI",
                "jobAdminUiUrl":"http://localhost:7001/rfi-batch-job-admin",
                "jobAdminUiUserAlias":"rfiJobAdminBaseUrlUserAlias",
                "jobAdminUiUser":"GET_FROM_WALLET",
                "jobAdminUiPassword":"GET_FROM_WALLET",
            },
```

2. New System Options Added to Disable Jobs at the time of installation:

```
                {"name":"jobSelection.1.pattern", "value":"ToExternalJob"},
                {"name":"jobSelection.1.initialState", "value":"false"},
```

5

Process Flow Installation

Prerequisites

The Process Flow application has the same tech stack requirements mentioned in the beginning of this document for JDK, WebLogic domain, and database. Before installing the Process Flow application install the following infrastructure components for the application.

- A WebLogic domain with JRF for the application
- A database schema for the Process Flow application

Before you begin installing BDI Process Flow, make sure you have the database schema created for BDI Process flow.

If you are migrating from previous version of BDI PROCESS FLOW to a newer version, Follow upgrade instructions for bdi. Before following upgrade instructions for bdi, you need to provide permissions for database schema. Run the below commands on admin schema where database schema is created, to provide permissions.

Commands:

```
CREATE TABLE TO 'user schema';
CREATE SEQUENCE TO 'user schema';
CREATE INDEX TO 'user schema';
```

Example: User schema name is bdi_process_app. Run below commands on admin schema.

```
CREATE TABLE TO 'bdi_ process _app';
CREATE SEQUENCE TO 'bdi_ process _app';
CREATE INDEX TO 'bdi_ process _app';
```

The recommended java VM memory setting for the Process Flow application domain is:

-Xms1024m -Xmx2048m

Install the Process Flow Application

Perform the following procedure to install the Process Flow application:

1. Download the process flow archive BdiProcessFlow19.0.1ForAll19.x.xApps_eng_ga.zip
2. Unzip the downloaded archive. The Process Home directory will be created under the current directory.

unzip BdiProcessFlow19.0.1ForAll19.x.xApps_eng_ga.zip
This command extracts the archive. The relevant directories for the installation are shown below (There are more directories than what is shown).

```
|
|- - - - - - - bin
|                   ` - - - - - - bdi-process-flow-admin-deployer.sh
|- - - - - - - conf
|                   ` - - - - - -
bdi-process-flow-admin-deployment-env-info.json
|                   ` - - - - - -
bdi-process-flow-admin-internal-trust-store.jks
|                   ` - - - - - - log4j2.xml
|                   ` - - - - - - security
|                   ` - - - - - - jazn-data.xml
|                   ` - - - - - - jps-config.xml
|- - - - - - - dist
|                   ` - - - - - - bdi-process-flow-19.0.100.war
|                   ` - - - - - - README.txt
|- - - - - - - lib
|- - - - - - - scripts
|                   ` - - - - - - DBSchemaMigration.groovy
|                   ` - - - - - - ProcessFlowAdminDeployer.groovy
|                   ` - - - - - - README.txt
|                   ` - - - - - - WebLogicManager.groovy
|- - - - - - - setup-data
|                   ` - - - - - - ddl
|                                     |                     |- - - - - - -
- -  migration
|           |    |                        |- - - - - - - - - BDI_Database_
Util_Spec_Permission.sql
|           |    |                        |- - - - - - - - - BDI_Database_
Util_Spec.sql
|           |    |                        |- - - - - - - - - create_wl_llr_
table.sql

|           |    |                        |- - - - - - - - -
migrate-process-schema-from-16.0.027-to-16.0.028.sql
|           |    |                        |- - - - - - - - -
migrate-schema-from-16.0.021-to-16.0.023.sql
|           |    |                        |- - - - - - - - -
migrate-schema-from-16.0.023-to-16.0.025.sql
|           |    |                        |- - - - - - - - -
migrate-schema-from-16.0.025-to-16.0.027.sql
|           |    |                        |- - - - - - - - -
migrate-schema-from-16.0.031-to-19.0.10019.0.100.sql
|           |    |                        |- - - - - - - - -
migrate-schema-from-16.0.21-to-16.0.023.sql
|                                     |                     |- - - - - - -
- -  purge
|                                     |                     |- - - - - - -
- -  purge_process_repo.sql
|                   ` - - - - - - dml
|                   ` - - - - - - dsl
|                   ` - - - - - - available_process_flow_options
|                                     |                     |- - - - - - -
- -  enterprise-sender_side_split_flows
|                                     |                     |- - - - - - -
- -  external_ocds-no_split_flows
|                                     |                     |- - - - - - -
- -  external_sim-no_split_flows
```

```
|                                    |                    |- - - - - - -
- -  rms_enterprise-sender_side_split_flows
|                                    |                    |- - - - - - -
- -  rms_external-no_split_flows
|                                    |                    |- - - - - - -
- -  rms_ocds-no_split_flows
|                                    |                    |- - - - - - -
- -  rms_rfi-no_split_flows
|                                    |                    |- - - - - - -
- -  rms_rpas_file_creator-no_split_flows
|                                    |                    |- - - - - - -
- -  rms_rxm-no_split_flows
|                                    |                    |- - - - - - -
- -  rms_sim-no_split_flows
|                                    |                    |- - - - - - -
- -  rms_sim_rxm-receiver_side_split_flows
|                                    |                    |- - - - - - -
- -  rms_sim_rxm-sender_side_split_flows
|- - - - - - - target
|                   ` - - - - - - bdi-process-flow.war
|                   ` - - - - - - README.txt
```

3. Modify process flow configuration file(conf/bdi-process-flow-admin-deployment-env-info.json) to match the deployment environment and to support OAuth2 feature. The deployment description json format has changed from previous release, to accommodate IDCS client credentials and URL.While you can change many values to match your requirements, here is a table of a minimum set of configuration values that you need to modify for process flow application.

   To deploy without OAuth, we need to remove or replace the OAuth2 aliases (For example:- jobAdminUiOAuth2ApplicationClientAliasRef) in bdi-process-flow-admin-deployment-env-info.json, and then deploy. No other extra steps required for deployment.

   Note: The alias names in the configuration files should not be changed.

Configuration Field	Description
BdiProcessFlowAdminDataSource ->jdbcUrl	JDBC URL for the process flow schema. Change this value to match the environment
ProcessFlowAdminAppServer ->weblogicDomainName	Name of the WebLogic domain where the process flow application is deployed
ProcessFlowAdminAppServer ->weblogicDomainHome	WebLogic Domain home directory
ProcessFlowAdminAppServer- > weblogicDomainProtocol	WebLogic admin server protocol is by default t3, if SSL configured then update to t3s.
ProcessFlowAdminAppServer ->weblogicDomainAdminServerUrl	WebLogic Admin server URL
ProcessFlowAdminAppServer ->weblogicDomainAdminServerHost	Host name of WebLogic Admin Server
ProcessFlowAdminAppServer ->weblogicDomainAdminServerPort	WebLogic admin server port

Configuration Field	Description
ProcessFlowAdminAppServer ->weblogicDomainTargetManagedServerName	Managed Server name where Process Flow is hosted
ProcessFlowAdminAppServer ->processFlowAdminUiUrl	Process Flow admin app URL. Update only the host and port
RmsAppJobAdminAppServer-->jobAdminUiUrl	BDI RMS job admin URL
SimAppJobAdminAppServer-->jobAdminUiUrl	BDI SIM job admin URL
SimJobAdminAppServer-->jobAdminUiUrl	BDI SIM job admin URL
RfiAppJobAdminAppServer-> jobAdminUiUrl	RFIAPP job admin URL
OcdsAppJobAdminAppServer	BDI OCDS job admin URL
ExternalAppJobAdminAppServer	BDI EXTERNAL job admin URL
RpasAppJobAdminAppServer	BDI RPAS job admin URL
oauth2AuthorizationServerUrl	IDCS URL For example: https://idcs-4ff493196128425c80ce4ecbfc8352e5.identity.c9dev1.oc9qadev.com/oauth2/v1/token
SystemOptions	allAvailableDestinationApps mentions all the apps available as destination appsInScope - mentions the apps that are in scope.

Example:

ProcessFlow JSON Snippet:

```
"ProcessFlowAdminApplication":{
            "ProcessFlowAdminAppUses":[
                "ProcessFlowAdminDataSource",
                "ProcessFlowAdminAppServer",
                {
                    "RemoteJobAdminAppServers":[
                       "RfiAppJobAdminAppServer",
                       "SimJobAdminAppServer",
                       "RmsAppJobAdminAppServer",
                       "SimAppJobAdminAppServer",
                       "RpasAppJobAdminAppServer",
                       "OcdsAppJobAdminAppServer",
                       "ExternalAppJobAdminAppServer"
                    ]
                }
            ],
            "SystemOptions":[
                {"name":"allAvailableDestinationApps",
"value":"SIM,RPAS,EXTERNAL,OCDS,RFI,RMS"},
                {"name":"appsInScope",
"value":"SIM,RPAS,OCDS,MFP,RDF,AP,IP,RFI"},
                {"name":"jobGroupCacheEnabled", "value":"false"},
                {"name":"flowSelection.1.pattern", "value":"_From_EXTERNAL"},
```

```
                {"name":"flowSelection.1.initialState", "value":"false"},

{"name":"flowSelection.2.pattern","value":"ProcessFlowName1,ProcessFlowName2"},
                {"name":"flowSelection.2.initialState", "value":"true"}
            ]
        }
```

Process Flow Json snippet for OAuth support:

```
"CentralAuthenticationSystem":{

            "IdcsAuthenticationProvider":{


"oauth2AuthorizationServerUrl":"https://idcs-4ff493196128425c80ce4ecbfc8352e5.i
dentity.c9dev1.oc9qadev.com/oauth2/v1/token",
                "oauth2Application":[
                    {
                         "oauth2ApplicationName" : "RICS",
                         "oauth2ApplicationScopeOfAccess" :
{"name":"oauth2.default.scopeOfAccess.*", "value":"urn:opc:idm:__myscopes__"},
                         "oauth2ApplicationClientAlias" :
"ric-sOauth2ApplicationClientAlias",
                         "oauth2ApplicationClientId" : "GET_FROM_WALLET",
                         "oauth2ApplicationClientSecret" : "GET_FROM_WALLET"

                    },
                    {
                         "oauth2ApplicationName" : "MFCS",
                         "oauth2ApplicationScopeOfAccess" :
{"name":"oauth2.default.scopeOfAccess.*", "value":"urn:opc:idm:__myscopes__"},
                         "oauth2ApplicationClientAlias" :
"mfcsO-auth2ApplicationClientAlias",
                         "oauth2ApplicationClientId" : "GET_FROM_WALLET",
                         "oauth2ApplicationClientSecret" : "GET_FROM_WALLET"

                    },
                    {
                         "oauth2ApplicationName" : "RPAS",
                         "oauth2ApplicationScopeOfAccess" :
{"name":"oauth2.default.scopeOfAccess.*", "value":"urn:opc:idm:__myscopes__"},
                         "oauth2ApplicationClientAlias" :
"rpasO-auth2ApplicationClientAlias",
                         "oauth2ApplicationClientId" : "GET_FROM_WALLET",
                         "oauth2ApplicationClientSecret" : "GET_FROM_WALLET"

                    }

                ]

            },
            "OamAuthenticationProvider":{
            }
```

BDI Process flow installer copies all the enterprise flows from bdi-process-home/setup-data/dsl/available_process_flow_options/rms_enterprise-sender_side_split_flows/ to bdi-process-home/setup-data/dsl/flows-in-scope.

4. Configure the appsInScope system options in process flow configuration file. As shown in step 3 above.

5. If you are migrating from previous version to a new version, follow the upgrade instructions for bdi.
6. Run the deployer. Make sure that the WebLogic server is running before issuing the following command.

```
cd bin
bdi-process-flow-admin-deployer.sh -setup-credentials
-deploy-process-flow-admin-app
```

The process flow deployer will prompt for username and password for the following credential aliases:

Alias	Description
bdiAppServerAdminServerUserAlias	WebLogic admin server credentials
processFlowAdminBaseUrlUserAlias	Credentials for Admin Role user for Process Flow Admin app
processFlowOperatorBaseUrlUserAlias	Credentials for Operator Role user for Process Flow Admin app
processFlowMonitorBaseUrlUserAlias	Credentials for Monitor Role user for Process Flow Admin app
bdiProcessFlowAdminDataSourceUserAlias	Credentials for the Data Source of the Process Flow Schema
rmsappJobAdminBaseUrlUserAlias	RMS job admin credentials
simappJobAdminBaseUrlUserAlias	SIM job admin credentials
simJobAdminBaseUrlUserAlias	SIM job admin credentials
ocdsappJobAdminBaseUrlUserAlias	OCDS job admin credentials
externalappJobAdminBaseUrlUserAlias	External job admin credentials
rfiappJobAdminBaseUrlUserAlias	RFIAPP job admin credentials
rpasappJobAdminBaseUrlUserAlias	RPAS job admin credentials
jobAdminUiOAuth2ApplicationClientAliasRef (name":"rpasappJobAdminBaseUrlOAuth2ApplicationClientAlias", "value": "*rpasOauth2ApplicationClientAlias)	IDCS Client ID and password
jobAdminUiOAuth2ApplicationClientAliasRef (name":"ocdsappJobAdminBaseUrlOAuth2ApplicationClientAlias", "value": "*ricsOauth2ApplicationClientAlias)	IDCS Client ID and password
jobAdminUiOAuth2ApplicationClientAliasRef (name":"rmsappJobAdminBaseUrlOAuth2ApplicationClientAlias", "value": "*mfcsOauth2ApplicationClientAlias)	IDCS Client ID and password
jobAdminUiOAuth2ApplicationClientAliasRef (name":"rfiappJobAdminBaseUrlOAuth2ApplicationClientAlias", "value": "*ricsOauth2ApplicationClientAlias)	IDCS Client ID and password

Note: If you have an existing process flow deployment then, login to Process Flow App, go to Manage Configurations -> System Options and update the following system options before running the above command. LOADPROCESSDEF = TRUE and LOADSEEDDATA = TRUE

If you have already configured various credentials required for process flow, you can run the deployer with the following syntax. It will not ask the credentials again for the deployment. Make sure you set the LOADPROCESSDEF = true, LOADSEEDDATA = true.

```
bdi-process-flow-admin-deployer.sh -use-existing-credentials
-deploy-process-flow-admin-app
```

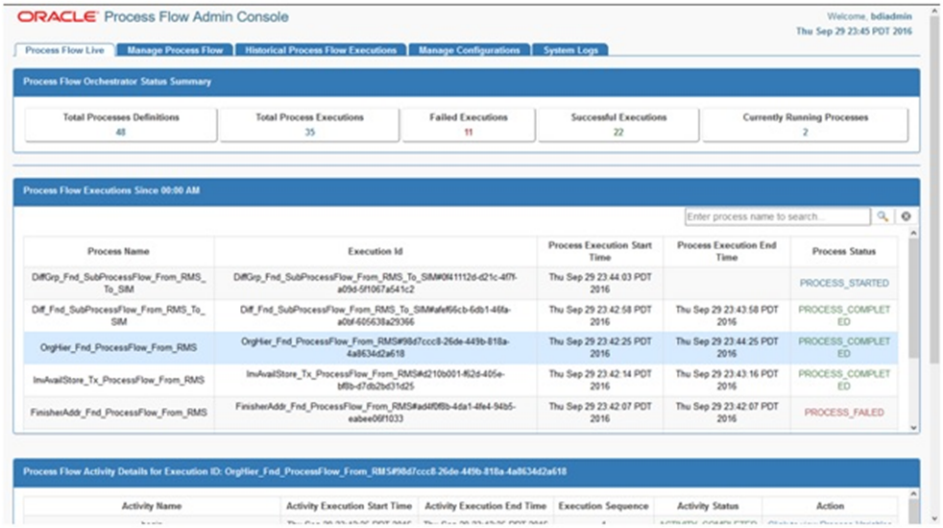
7. Make sure the deployment step shows deployment success message at the end.
8. Restrict access to the bdi-process-home folder:

```
cd bdi-process-home
chmod -R 700 .
```

9. Bounce the process managed server.

Verify Installation

If the process flow app is successfully deployed, you should be able to access the application at the URL http://<host>:<port>/bdi-process-flow/. The following is a sample screenshot of the process flow application. Make sure all the tabs of the application are properly displayed.



See the *Oracle Retail Bulk Data Integration Implementation Guide* for the operation details of the Process Flow application.

Enabling Email Notification Alerts

Process Flow can send email alerts upon success or failure of process executions as specified in the process definitions. The following configuration is required for process email notification.

Mail Session configuration in WebLogic, for process email notification:

1. Go to the WebLogic Admin console of the environment where the process app is deployed.
2. Navigate to Services -> Mail Sessions.
3. Select New to create a new mail session.
4. Enter the following details:

   Name: BdiProcessMailSession

   JNDI name: mail/BdiProcessMailSession

   Session Username: A valid email id, preferably email-id of an administrator.

   Session password: The password for the above email id.
5. Enter the following in the JavaMail properties:

   mail.smtp.ssl.enable=true

   mail.smtp.auth=true

   mail.smtp.ssl.trust=<*company's smtp mail server host name*>

   mail.smtp.port=<*mail server smtps port, typically is 465*>

   mail.transport.protocol=smtps

   mail.smtp.host=<*company's smtp mail server host name*>

   mail.from=<*A valid email-id for 'from email address' when email is sent*>

   mail.to(Optional)=<*List of valid recipients email-ids*>

   Web Session Mail.to property is used if processFlowNotification.<scope>.recipients is not set in Process Notification Configuration.
6. Click Next. In the Mail Session Targets, select the managed server where the process application is deployed.
7. Finish creating the mail session.

Note: For more information on configuring Mail sessions on WebLogic, see the *Oracle® WebLogic Administrator's Guide 12c Release*.

Process Flow Upgrade Steps

1. Download the BdiProcessFlow19.0.1ForAll19.x.xApps_eng_ga.zip from RTG Wiki and extract.
2. Take the backup of existing bdi-process-home.
3. Cd to bdi-process-home/conf folder.
4. Modify process flow configuration file (conf/bdi-process-flow-admin-deployement-env-info.json) to match the deployment environment and support OAuth2 feature.
5. To deploy without OAuth, we need to remove or replace the OAuth2 aliases (For example:- jobAdminUiOAuth2ApplicationClientAliasRef) in bdi-process-flow-admin-deployment-env-info.json, and then deploy. No other extra steps required for deployment.

6. The deployment description json format has changed from previous release, to accom-modate IDCS client credentials and URL.

   Note: The alias names in the configuration files should not be changed.

   "oauth2AuthorizationServerUrl":"https://idcs-4ff493196128425c80ce4ecbfc8352e5.identity.c9dev1.oc9qadev.com/oauth2/v1/token" ? Replace with IDCS server url

7. Configure the appsInScope system options in process flow configuration file.
8. Login to the existing deployed process flow app.
9. Go to Manage Configurations -> System Options and make following changes: LOADPROCESSDEF = TRUE and LOADSEEDDATA = TRUE
10. Delete the existing process flow app.
11. Run the below command to upgrade and deploy the process-flow-app.

```
Cd bin
sh bdi-process-flow-admin-deployer.sh -use-existing-credentials
-deploy-process-flow-admin-app
```

12. BDI process flow installer copies all the enterprise flows from process-home/setup-data/dsl/available_process_flow_options/rms_enterprise-sender_side_split_flows/ to process-home/setup-data/dsl/flows-in-scope while deployment.
13. After successful deployment, bounce the managed server.

6

BDI Batch Scheduler Installation

Installation Prerequisites

The BDI Batch Scheduler supports the same tech stack and platform specifications as given in prior section in this installation guide. The following infrastructure is required for Scheduler application installation.

Preparing for Installation

- Before starting the installation, make sure a database schema has been created for the Scheduler application.
- Ensure that the WebLogic server where the scheduler application will be deployed is up and running.
- Download the BDI scheduler installer archive: BdiScheduler19.0.1ForAll19.x.xApps_eng_ga.zip
- Unzip/extract the archive to a target directory to run the installer. The bdi-scheduler-home directory will be created under the target directory with the artifacts.
- The following is part of the directory structure and artifacts that are extracted from the archive (not the complete list shown below).

```
|
|- - - - - - - bin
|                   ` - - - - - -  bdi-scheduler-admin-deployer.sh
|- - - - - - - conf
|                   ` - - - - - - bdi-scheduler-admin-deployment-env-info.json
|                   ` - - - - - - bdi-scheduler-admin-internal-trust-store.jks
|                   ` - - - - - -  log4j2.xml
|                   ` - - - - - -  security
|                   ` - - - - - -  jazn-data.xml
|                   ` - - - - - -  jps-config.xml
|- - - - - - - dist
|                   ` - - - - - -  bdi-scheduler-ui.war
|                   ` - - - - - -  README.txt
|- - - - - - - lib
|- - - - - - - scripts
|                   ` - - - - - -  DBSchemaMigration.groovy
|                   ` - - - - - -  README.txt
|                   ` - - - - - -  SchedulerAdminDeployer.groovy
|                   ` - - - - - -  WebLogicManager.groovy
```

```
|- - - - - - - setup-data
|                    ` - - - - - - -  ddl
|           |              `- - - - - - - - -  migration
|           |                                          `- - - - - - - - - - BDI_
Database_Util_Spec_Permission.sql
|           |                                          `- - - - - - - - - - BDI_
Database_Util_Spec.sql
|           |                                          `- - - - - - - - - - create_
wl_llr_table.sql

|           |                                          `- - - - - - - - -
-migrate-schema-from-16.0.021-to-16.0.023.sql
|           |                                          `- - - - - - - - -
-migrate-schema-from-16.0.025-to-16.0.027.sql
|           |                                          `- - - - - - - - -
-migrate-schema-from-16.0.028-to-16.0.030.sql
|           |                                          `- - - - - - - - -
-migrate-schema-from-16.0.031-to-19.0.100.sql
|           |              `- - - - - - - - -  purge
|           |              `- - - - - - - - -  purge_scheduler_repo.sql
|                    ` - - - - - - -  dml
|                    ` - - - - - - -  dsl
|- - - - - - - target
|                    ` - - - - - - -  bdi-scheduler-ui.war
|                    ` - - - - - - - README.txt
```

Note: Any seed data schedule definition can be edited if required using the seed_data.sql file. To add a new schedule at the time of deployment, edit seed_data.sql to include an insert statement for the new schedule definition and add the corresponding <ScheduleName>_Action.sch file in the /setup-data/dsl directory.

To configure valid Email Recipients for Schedule email notifications, update seed data located in bdi-scheduler-home/setup-data/dml /seed_data.sql. By default value is admin@example.com in BDI_ SCHEDULE_DEFINITION

For more details, refer to the *Oracle Retail Bulk Data Integration Implementation Guide*.

Deploying Scheduler Application

1. Edit bdi-scheduler-admin-deployment-env-info.json (in bdi-scheduler-home/conf directory) with corresponding values matching the target deployment environment. Update the values of the following configuration properties.

Configuration Property	Description
DataSourceDef -> SchedulerAdminDataSource -> jdbcUrl	JDBC URL of the scheduler database schema
ProcessFlowAdminAppServer-> processFlowAdminUiUrl	Url of the process flow admin app
MiddlewareServerDef -> SchedulerAdminAppServer -> weblogicDomainName	Name of the WebLogic domain where the scheduler application is deployed.

Configuration Property	Description
MiddlewareServerDef -> SchedulerAdminAppServer -> weblogicDomainHome	WebLogic Domain home directory.
MiddlewareServerDef->SchedulerAdminAppServer->weblogicDomainAdminServerProtocol	By default the protocol is t3 and if configured to SSL then update to t3s.
MiddlewareServerDef -> SchedulerAdminAppServer -> weblogicDomainAdminServerUrl	WebLogic Admin server URL. Example: t3://<serverHostName>:8001
MiddlewareServerDef -> SchedulerAdminAppServer -> weblogicDomainAdminServerHost	Host name of WebLogic Admin server.
MiddlewareServerDef -> SchedulerAdminAppServer -> weblogicDomainAdminServerPort	WebLogic Admin server port.
MiddlewareServerDef -> SchedulerAdminAppServer -> weblogicDomainTargetManagedServerName	Managed Server name where the Scheduler application is deployed.
MiddlewareServerDef -> SchedulerAdminAppServer -> schedulerAdminUiUrl	Scheduler Admin app URL. http://<serverHostName>:<managed server port>/bdi-scheduler
MiddlewareServerDef -> ProcessFlowAdminAppServer -> processFlowAdminUiUrl	BDI Process Flow app base URL. This URL will be used by the scheduler to connect to the process flow app to call process flows. Example: http://<serverHostName>:8001/bdi-process-flow

2. If you are migrating from the previous version, follow upgrade instructions for bdi-scheduler.
3. Run the deployer script from the bdi-scheduler-home/bin directory. Use the -setup-credentials option to setup necessary credentials for the application and deploy.

   `bdi-scheduler-admin-deployer.sh -setup-credentials -deploy-scheduler-admin-app`

   The deployer will prompt credentials for the following user aliases to be configured. Enter the corresponding username and password as required for each alias.

Alias Name	Description
bdiAppServerAdminServerUserAlias	WebLogic admin server credentials
bdiSchedulerAdminUiUserAlias	Credentials for the user with Admin Role for Scheduler Admin app
bdiSchedulerOperatorUiUserAlias	Credentials for the user with Operator Role for Scheduler Admin app
bdiSchedulerMonitorUiUserAlias	Credentials for the user with Monitor Role for Scheduler Admin app
bdiSchedulerAdminDataSourceUserAlias	Datasource credentials to connect to the Scheduler database schema

Alias Name	Description
processFlowAdminBaseUrlUserAlias	Credentials of the process flow admin app

4. If you have already configured the credentials and can use the same credentials (typically when redeploying the app), you can run the deployer with the -use-existing-credentials option as follows, and you will not be prompted for the credentials again for the deployment.

```
bdi-scheduler-admin-deployer.sh -use-existing-credentials
-deploy-scheduler-admin-app
```

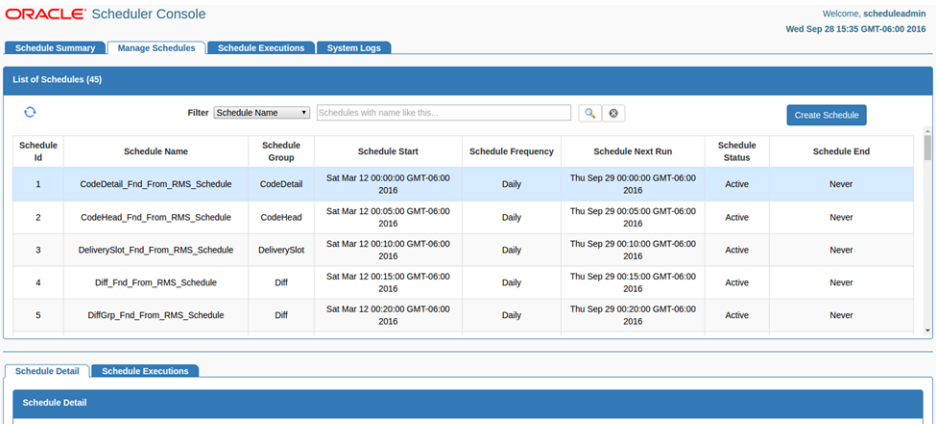
5. Restrict access to the bdi-scheduler-home folder:

```
cd bdi-scheduler-home
chmod -R 700 .
```

Verifying Installation

Perform the following procedure to verify the BDI Batch Scheduler installation:

1. Verify that the deployer script has run successfully with no error. The scheduler application would have been deployed to the target environment.
2. Launch the Scheduler admin app via the URL - http://<host>:<port>/bdi-scheduler/
3. Verify you are able to access the URL by logging in using the admin or operator role.
4. Verify that the list of schedules (created from seed data) is displayed in 'Manage Schedules' page of the app.
5. All schedules in BDI are in 'DISABLED' state by default. To enable the schedules, the user can enable them in the UI. Refer to Appendix B, "Appendix: Enabling BDI Schedules".
6. Ensure that all the schedules are in 'Disabled' status.
7. A schedule can be in 'Disabled' status if no schedule action is loaded for the corresponding schedule or if the schedule action contains any forbidden keyword. The user needs to correct the schedule action and enable the schedule. For more details on this, please refer to the *Oracle Retail Bulk Data Integration Implementation Guide*.



Enabling Email Notification Alerts

Scheduler can send email alerts upon success or failure of schedule executions as specified in the schedule definitions. Email Recipients can be set in BDI_SCHEDULE_DEFINITION table at deployment time. The following configuration is required for Scheduler email notification.

Mail Session configuration in WebLogic, for scheduler email notification:

1. Go to the WebLogic Admin console of the environment where the scheduler app is deployed.
2. Navigate to Services -> Mail Sessions.
3. Select 'New' to create a new mail session.
4. Enter the following details:

   Name: BdiSchedulerMailSession

   JNDI name: mail/BdiSchedulerMailSession

   Session Username: A valid email id, preferably email-id of an administrator.

   Session password: The password for the above email id.
5. Enter the following in the JavaMail properties:

   mail.smtp.ssl.enable=true

   mail.smtp.auth=true

   mail.smtp.ssl.trust=<*company's smtp mail server host name*>

   mail.smtp.port=<*mail server smtps port, typically is 465*>

   mail.transport.protocol=smtps

   mail.smtp.host=<*company's smtp mail server host name*>

   mail.from=<*A valid email-id for 'from email address' when email is sent*>

   mail.to(Optional)=<*List of valid recipients email-ids*>

   Web Session Mail.to property is used if no recipients set in BDI_SCHEDULE_DEFINITION table.

   Recipients can also be set from Manage Schedule tab in the Scheduler Application.
6. Click Next. In the Mail Session Targets, select the managed server where the scheduler application is deployed.
7. Finish creating the mail session.

> **Note:** For more information on configuring Mail sessions on WebLogic, see the *Oracle® WebLogic Administrator's Guide 12c Release*.

Scheduler Upgrade Steps

1. Download the BdiScheduler19.0.1ForAll19.x.xApps_eng_ga.zip from the RTG Wiki and extract.
2. Login to existing deployed Scheduler app.
3. Go to Manage Configurations -> System Options and make following changes. LOADSEEDDATA = TRUE

4. Login to WebLogic console and delete the existing scheduler app.
5. Run the below command to upgrade and deploy the scheduler app.

```
Cd scheduler-home/bin
sh bdi-scheduler-admin-deployer.sh  -use-existing-credentials
-deploy-scheduler-admin-app
```

6. After successful deployment, bounce the scheduler managed server.
7. Login to scheduler and make sure no error is displayed in any of the pages.

7

Cluster Considerations

Modern business application requirements are classified by the abilities that the system must provide. This list of abilities such as availability, scalability, reliability, audit ability, recoverability, portability, manageability, and maintainability determine the success or failure of a business.

With a clustered system many of these business requirement abilities gets addressed without having to do lots of development work within the business application. Clustering directly addresses availability, scalability, recoverability requirements which are very attractive to a business. In reality though it is a tradeoff, clustered system increases complexity, is normally more difficult to manage and secure, so one should evaluate the pros and cons before deciding to use clustering.

Oracle provides many clustering solutions and options; those relevant to BDI are Oracle database cluster (RAC) and WebLogic Server clusters.

Scaling BDI

BDI needs to be scaled horizontally to handle large number of concurrent jobs. Single instances of Scheduler and Process Flow can be used since they are not resource intensive. Job Admin can be very resource intensive. To handle large number of concurrent jobs, multiple instances of Job Admin can be used to distribute jobs. WebLogic Server cluster that consists of multiple managed server instances provide horizontal scalability for Job Admin.

BDI on Cluster

As recommended above, for scaling BDI for large number of jobs, BDI components should be deployed to cluster. Following are some considerations to be taken into account when deploying BDI on cluster.

Logging

Issue

The "System Logs" tab in Scheduler, Process Flow, and Job Admin UIs show only logs from the server that UI is connected to.

Solution

Use a common log directory for each of the BDI components.

BDI components use the following directory structure for creating log files.

$DOMAIN_HOME/logs/<server name>/<app name>

Example

$DOMAIN_HOME/logs/server1/rms-job-admin.war

$DOMAIN_HOME/logs/server2/rms-job-admin.war

1. Create a common log directory (e.g. /home/logs/jobadmin) for each BDI application.
2. Create symbolic links to the common log directory for each server using the below command from $DOMAIN_HOME/logs directory.

```
ln -s  /home/logs/jobadmin
       server1/rms-job-admin.war
ln -s /home/logs/jobadmin
       server2/rms-job-admin.war
```

3. If the directory $DOMAIN_HOME/logs/<server>/<app> already exists, it needs to be deleted before symbolic link is created.
4. App needs to be restarted after symbolic link is created.

When WebLogic managed servers are in different machines a shared network disk has to be used.

Update Log Level

Issue

When log level is updated through UI or REST end point, it updates the log level only on the server it is connected to.

Solution

Log level needs to be updated through the URL of all the nodes in the cluster using UI or REST endpoint.

Example

http://server1:port1/bdi-rms-batch-job-admin/resources/system-setting/system-logs

http://server2:port2/bdi-rms-batch-job-admin/
resources/system-setting/system-logs

Create/Update/Delete System Options

Issue

When system options are created/updated/deleted using UI or REST end point, the changes are reflected only on the server that client is connected to.

Solution

The reset-cache REST endpoint needs to be invoked on the other nodes in the cluster for that application in BDI.

Example

http://server1:port1/bdi-rms-batch-job-admin/ resources/system-setting/reset-cache

Use curl command to reset cache as:

```
curl --user userId:password -i -X POST -H "Cot-Type:application.json"
http://server1:port1/rms-batch-job-admin/resources/system-setting/reset-cache
```

Create/Update/Delete System Credentials

Issue

When system credentials are created/updated/deleted using REST endpoint, the credentials are created/updated/deleted only on the server that client is connected to.

Solution

The REST endpoint that creates/updates/deletes credentials need to be invoked on all the nodes in the cluster for that application in BDI.

Example

```
http://server1:port1/rms-batch-job-admin/resources
/system-setting/system-credentials
http://server2:port2/rms-batch-job-admin/resources
/system-setting/system-credentials

Use curl command to create credentials on other nodes in the cluster as:

curl --user userId:password -i -X PUT -H "Content-Type:application/json"
http://server1:port1/bdi-rms-batch-job-admin/resources/system-setting/system-crede
ntials
-d '{"userAlias":"rmsappJobAdminBaseUrlUserAlias", "userName":"rmsjobadmin" ,
"userPassword":"xyzxyz"}'
```

Use curl command to update credentials on other nodes in the cluster as:

```
curl --user userId:password -i -X POST -H "Content-Type:application/json"
http://server1:port1/bdi-rms-batch-job-admin/resources/system-setting/system-crede
ntials
 -d '{"userAlias":" reimappJobAdminBaseUrlUserAlias", "userName":"reimjobadmin" ,
"userPassword":"wwwqqqq"}'
```

Use curl command to delete credentials on other nodes in the cluster as:

```
curl --user userId:password -i -X DELETE  -H "Content-Type:application/json"
http://server1:port1/bdi-rms-batch-job-admin/resources/system-setting/system-crede
ntials
 -d '{"key":"rmsappJobAdminBaseUrl"}'
```

Scheduler Configuration Changes for Cluster

Perform the following procedure to cluster the Job Scheduler Data Source:

1. Two data sources need to be created for scheduler on cluster in the Admin Console.
   - Create a non-XA data source (SchedulerTimerDs) pointing to the schema that contains the WEBLOGIC_TIMERS table. This is the schema with the WLS suffix, created using RCU.

     Specify this schema in the scheduling tab of cluster configuration in WebLogic console.
   - Create a non-XA data source (SchedulerRuntimeDs) pointing to schema that contains ACTIVE table. This is the schema with the WLS_RUNTIME suffix, created using RCU.

     Specify this schema in the Migration tab of cluster configuration in the WebLogic console.

   Perform the following steps to configure the data sources:

   a. Specify the data source for schedule timers in the Admin Console.

b. Login to Admin Console.

c. Click Lock & Edit (For Production Mode only).

d. Click Environment -> Clusters.

e. Click the cluster name.

f. Click Scheduling.

g. Select SchedulerTimerDs for the Data Source For Job Scheduler field.

h. Click Save.

i. Click Migration.

j. Select Migration Basis: DataBase, and Data Source For Automatic Migration: SchedulerRuntimeDs.

k. Click Save.

l. Verify Auto Migration Table Name populated with ACTIVE.

m. Click Activate Changes.

2. Update the weblogic-ejb-jar.xml in WEB-INF folder of the bdi-scheduler-ui-<version>.war in <bdi-home>/dist folder with the contents shown (The entry in red is the change from the existing contents of the file)

Instructions to update

a. cd dist

b. jar xf bdi-scheduler-ui-<version>.war WEB-INF/weblogic-ejb-jar.xml

c. Update the WEB-INF/weblogic-ejb-jar.xml with the contents below

d. jar uf bdi-scheduler-ui-<version>.war WEB-INF/weblogic-ejb-jar.xml

e. Delete dist/WEB-INF folder

f. Deploy the scheduler application

```
<weblogic-ejb-jar xmlns="http://xmlns.oracle.com/weblogic/weblogic-ejb-jar"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <security-role-assignment>
        <role-name>AdminRole</role-name>
        <principal-name>BdiSchedulerAdminGroup</principal-name>
    </security-role-assignment>


    <security-role-assignment>
        <role-name>OperatorRole</role-name>
        <principal-name>BdiSchedulerOperatorGroup</principal-name>
    </security-role-assignment>
    <security-role-assignment>
        <role-name>MonitorRole</role-name>
        <principal-name>BdiSchedulerMonitorGroup</principal-name>
    </security-role-assignment>
    <timer-implementation>Clustered</timer-implementation>
</weblogic-ejb-jar>
```

8

BDI Migration

To accelerate the application performance, following indexes are created on the listed tables in JobAdmin, Processflow and SchedulerAdmin applications.

Process Flow Admin

Table Name	Index Name
BDI_ACTIVITY_EXEC_INSTANCE	INDX_ACTIVITY_EXEC_INSTANCE_1
BDI_PROCESS_EXEC_INSTANCE	INDX_PROCESS_EXECUTION_1
	INDX_PROCESS_EXECUTION_2
	INDX_PROCESS_EXECUTION_3
BDI_PROCESS_CALL_STACK	INDX_PROCESS_CALL_STACK_1
	INDX_PROCESS_CALL_STACK_2

Scheduler Admin

Table Name	Index Name
BDI_SCHEDULE_EXECUTION	INDX_SCHEDULE_EXEC_1
	INDX_SCHEDULE_EXEC_2
	INDX_SCHEDULE_EXEC_3
	INDX_SCHEDULE_EXEC_4

Job Admin

Table Name	Index Name
BDI_DWNLDR_IFACE_MOD_DATA_CTL	INDX_DNLDR_IFACE_MD_DAT_CL_1
	INDX_DNLDR_IFACE_MD_DAT_CL_2
	INDX_DNLDR_IFACE_MD_DAT_CL_3
BDI_DWNLDR_TRNSMITR_EXE_DSET	INDX_DT_TRANSMITR_EXE_DSET_1
	INDX_DT_TRANSMITR_EXE_DSET_2
	INDX_DT_TRANSMITR_EXE_DSET_3
	INDX_DT_TRANSMITR_EXE_DSET_4

Table Name	Index Name
BDI_UPLOADER_TRANSACTION	INDX_UPLOADER_TRANSACTION_1
	INDX_UPLOADER_TRANSACTION_2
BDI_RECEIVER_TRANSACTION	INDX_RECV_TRANSACTION_1
BDI_RECEIVER_TRANSMISSION	INDX_RECEIVER_TRANSMISSION_1
BDI_UPLDER_IFACE_MOD_DATA_CTL	INDX_UPLDR_IFACE_MD_DAT_CL_1
	INDX_UPLDR_IFACE_MD_DAT_CL_2
BDI_UPLOADER_EXE_DATASET	INDX_UPLOADER_EXE_DATASET_1
	INDX_UPLOADER_EXE_DATASET_2

Migration Steps

During migration from 16.0.025 to 16.0.027, to accommodate for the above-created indexes run the following SQL scripts against respective schemas as listed below.

Name	File Location	Database Schema for Execution
migrate-schema-from-16.0.025-to-16.0.027.sql	bdi-process-home/setup-data/ddl/migration	Processflow Schema

Note: If both integration schema and receiver schema are same, do not run the migration script twice from bdi-<edge>-app-job-home/setup-data/ddl/migration.

If both schemas are different, the user may see the "SQL Error: ORA-00942: table or view does not exist" for the table that does not exist on that schema.

For migrating from any version older than 16.0.025, the user needs to run the migration scripts incrementally.

A

Appendix: Integrating BDI-RMS with External Applications

This section provides guideline for integrating External application with RMS using BDI.

Installation Instructions

1. Additional entries are to be added in BDI-RMS configuration file to integrate bdi-rms with bdi-external.
2. Copy the Job xmls from: bdi-edge-rms-job-home/setup-data/available-jobs-for-external-app-integration to the folder bdi-edge-rms-job-home/setup-data/META-INF/batch-jobs/.

```
cd bdi-edge-rms-job-home/setup-data/
cp available-jobs-for-external-app-integration/*.* META-INF/batch-jobs/
```

3. Install bdi-edge-rms application by following instructions in the section Deploying BDI RMS Batch Job Admin on the WebLogic.
4. To Install bdi-external application follow the instruction in the section Deploying BDI Batch Job Admin Application for a Receiver Application.

B

Appendix: Enabling BDI Schedules

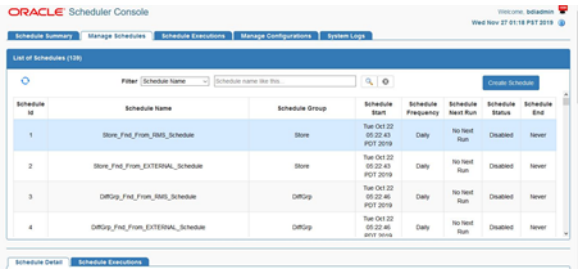
This section provides guideline to update the status of BDI Schedules.

Schedule Status Update Instructions

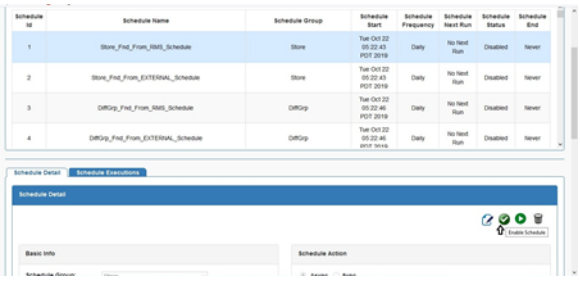
All the BDI schedules are in DISABLED state by default after installation. So the user should make the required schedules ACTIVE as per the requirement. To enable the schedule the user can either User interface or the ReST end point.

To enable the schedule using the User Interface:

1. Login to the BDI scheduler web application.
2. Navigate to the Manage Schedules tab.



3. Select the Schedule in the List of Schedules table.
4. Go to the Schedule Detail Tab below the table.
5. Click on the Enable Schedule Icon on the top right of the Schedule Detail Panel.



To enable/disable multiple schedules using ReST end point:

The ReST end point allows user to update status of one or more schedules in a single request.

The ReST end point returns response at schedule level.

Valid input value for scheduleStatus is: ACTIVE and DISABLED

ReST End Point Name: activateOrDisable-schedules

Method Name:
activateOrDisableSchedules

Type:
POST

Sample Request:

```
{
"scheduleStatusVo": [{
   "scheduleName": "CodeDetail_Fnd_From_RMS_Schedule",
   "scheduleStatus": "ACTIVE"
},
{
   "scheduleName": "CodeHead_Fnd_From_RMS_Schedule",
   "scheduleStatus": "ACTIVE"
}
]
}
```

Sample Response:

```
{"scheduleStatusVo": [
      {
      "message": "Schedule status updated successfully",
      "scheduleName": "CodeDetail_Fnd_From_RMS_Schedule",
      "scheduleStatus": "ACTIVE"
   },
      {
      "message": "Schedule status updated successfully",
      "scheduleName": "CodeHead_Fnd_From_RMS_Schedule",
      "scheduleStatus": "ACTIVE"
   }
]}
```