Oracle® Retail Dynamic Data Service

Guide

Release 21.0.000

F38688-02

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Oracle Retail Dynamic Data Service Guide, Release 21.0.000

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Primary Author:

Contributing Author:

Value-Added Reseller (VAR) Language

Oracle Retail VAR Applications

Applications. For purposes of this section, "alteration" refers to all alterations, translations, upgrades, enhancements, customizations or modifications of all or any portion of the VAR Applications including all reconfigurations, reassembly or reverse assembly, re-engineering or reverse engineering and recompilations or reverse compilations of the VAR Applications or any derivatives of the VAR Applications. You acknowledge that it shall be a breach of the agreement to utilize the relationship, and/or confidential information of the VAR Applications for purposes of competitive discovery.

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7 User Interface

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Oracle welcomes customers' comments and suggestions on the quality and usefulness of this document.

Your feedback is important, and helps us to best meet your needs as a user of our products. For example:

- 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?

If you find any errors or have any other suggestions for improvement, then please tell us your name, the name of the company who has licensed our products, the title and part number of the documentation and the chapter, section, and page number (if available).

> **Note:** Before sending us your comments, you might like to check that you have the latest version of the document and if any concerns are already addressed. To do this, access the new Applications Release Online Documentation CD available on My Oracle Support and www.oracle.com. It contains the most current Documentation Library plus all documents revised or released recently.

Send your comments to us using the electronic mail address: retail-doc_us@oracle.com

Please give your name, address, electronic mail address, and telephone number (optional).

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If you require training or instruction in using Oracle software, then please contact your Oracle local office and inquire about our Oracle University offerings. A list of Oracle offices is available on our Web site at www.oracle.com.

Preface

The *Dynamic Data Service (DDS) Guide* describes the integration and configuration information for Oracle Retail Dynamic Data Service.

Audience

This guide is for:

- Systems administration and operations personnel
- Systems analysts
- Integrators and implementers
- Business analysts who need information about Product processes and interfaces

Customer Support

To contact Oracle Customer Support, access My Oracle Support at the following URL:

`https://support.oracle.com`

When contacting Customer Support, please provide the following:

- Product version and program/module name
- 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, 19.0.000) or a later patch release (for example, 19.0.001). 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.

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

`https://docs.oracle.com/en/industries/retail/index.html`

An updated version of the applicable Oracle Retail document is indicated by 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.

If a more recent version of a document is available, that version supersedes all previous versions.

Oracle Help Center (docs.oracle.com)

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

`https://docs.oracle.com/en/industries/retail/index.html`

(Data Model documents can be obtained 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.
`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

This chapter gives a brief introduction to the Dynamic Data Service Web Application.

What is DDS?

Dynamic Data Service (DDS) is a cloud based web application with functionality to remotely interact with databases. It has the ability to interact with many schemas at once in a database. The functionality also has the ability to interact with different databases as well.

Data can be viewed and modified through the application. It also has security built into it to restrict data access and modification.

Dynamic Data Service provides access to data in a database through RESTful services. Users can perform CRUD operations on the data using RESTful services. From a security perspective, access to data can be restricted to users at the table, column and row level.

Dynamic Data Service allows users to access data from any configured databases the time of install. Dynamic Data Service UI provides functionality to setup the security and perform CRUD operations on the data.

Need for DDS

DDS is useful for exposing data in a schema with data that is not directly visible to the user. Good examples for this would be a back-end schema of other Oracle applications. Any data that is not exposed by these applications can be viewed using DDS because users cannot connect to database schemas, from a cloud environment, using standard database tools without proper permissions.

Functionality Offered

DDS offers various functionality regarding databases. It can connect to various database connections. The application then discovers the schema inside the databases and allows the user to work and interact with the tables and data within the tables. The high level list of functionalities offered:

- Schema Discovery
- Viewing Table Definition
- Querying table data
- Creation, modification and deletion of records
- Bulk Updates and Deletion of data in tables

- Security setup for limiting data access and modification

Accessibility

Oracle JET components have built-in accessibility support that conforms with the Web Content Accessibility Guidelines version 2.0 at the AA level (WCAG 2.0 AA), developed by the World Wide Web Consortium (W3C).

Accessibility involves making your application usable for persons with disabilities such as low vision or blindness, deafness, or other physical limitations. This means, for example, creating applications that can be:

- Used without a mouse (keyboard only).
- Used with assistive technologies such as screen readers and screen magnifiers.
- Used without reliance on sound, color, animation, or timing.

DDS provides the ability to support the above accessibility in the applications.

Users should be able to navigate to all parts and functions of the application using the Tab and arrow keys, without using any keyboard shortcuts. In addition to that, keyboard shortcuts merely provide an additional way to access a function quickly.

Keyboard shortcuts provide an alternative to pointing devices for navigating the page. There are five types of keyboard shortcuts that can be provided in OJET applications:

- Tab traversal, using Tab and Shift+Tab keys: Moves the focus through UI elements on a screen.
- Accelerator keys (hot keys): bypasses menu and page navigation, and performs an action directly, for example, Ctrl+C for Copy.
- Access keys: Moves the focus to a specific UI element, for example, Alt+F for the File menu.
- Default cursor/focus placement: Puts the initial focus on a component so that keyboard users can start interacting with the page without excessive navigation.
- Enter key: Triggers an action when the cursor is in certain fields or when the focus is on a link or button.

2 Installation Prerequisites

This chapter describes the procedure to install the Weblogic 12c runtime and deploy the tool's EAR file. 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 pre-requisites, preparing the WebLogic server, creating a WebLogic domain, verifying installation of JRF runtime libraries and deploying the EAR file. It also describes guidelines to set up security.

> **Note:** The windows included in the following procedures are for example purposes only. Because these procedures must be followed for each application, valid values vary. Therefore, consider the illustrations as guides only; the values shown may not always apply.

Prerequisites

DDS Web Application requires Oracle WebLogic Server 12c (12.2.1.4.0), built with Java 8 (JDK 1.8 64 bit with the latest security updates).

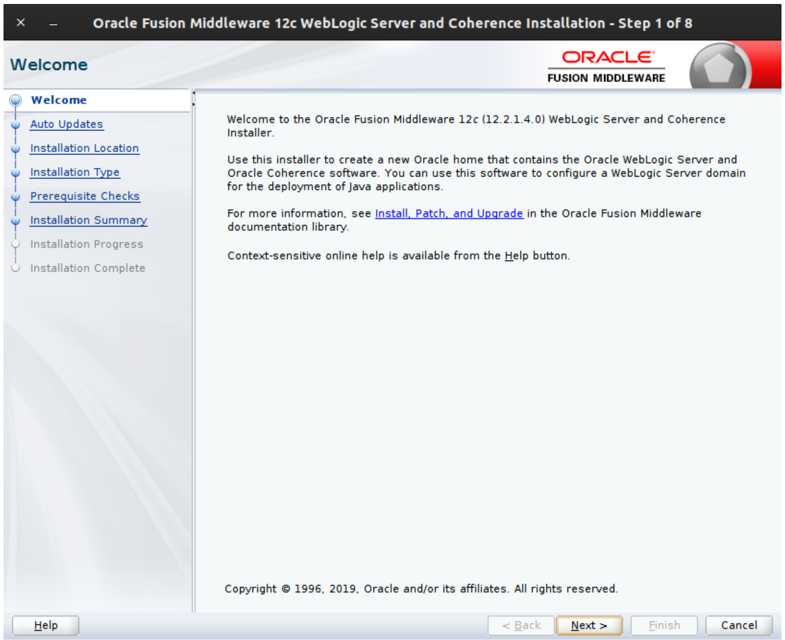
Installing WebLogic

To get the JRF runtime option while creating the domain, install the Application Development Runtime. To obtain Application Development Runtime, 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 displays.



Welcome to the Oracle Fusion Middleware 12c (12.2.1.4.0) WebLogic Server and Coherence Installer.

Use this installer to create a new Oracle home that contains the Oracle WebLogic Server and Oracle Coherence software. You can use this software to configure a WebLogic Server domain for the deployment of Java applications.

For more information, see Install, Patch, and Upgrade in the Oracle Fusion Middleware documentation library.

Context-sensitive online help is available from the Help button.

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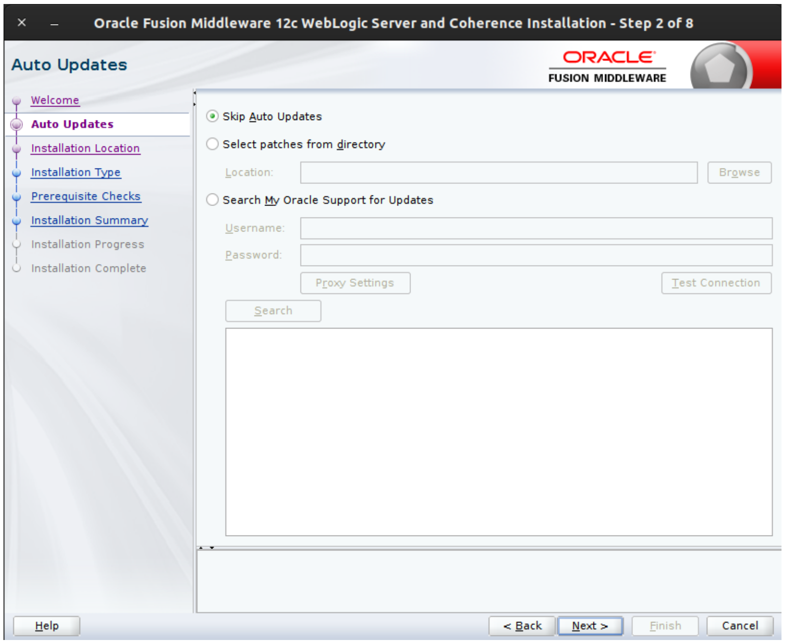
4. Click **Next**. The Auto Updates window displays. Select the appropriate option.



● Skip Auto Updates

○ Select patches from directory

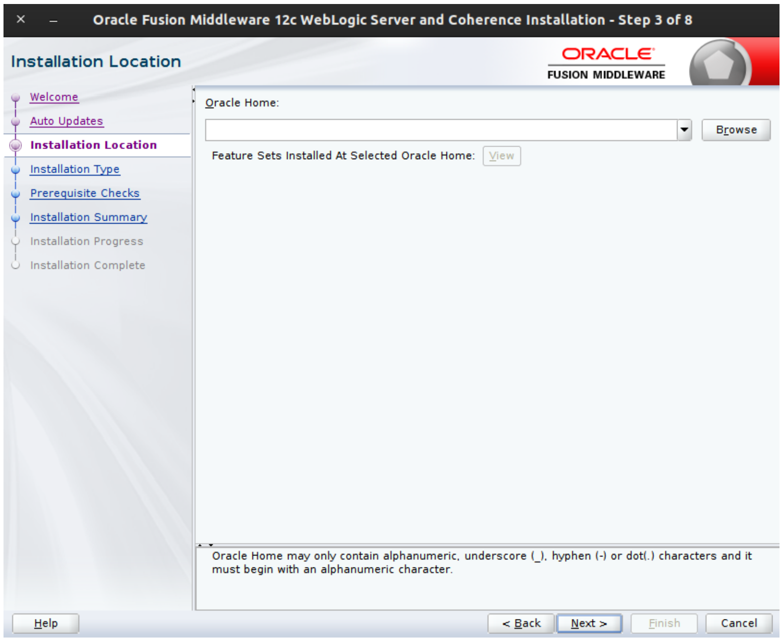
Location:

○ Search My Oracle Support for Updates

Username:

Password:

5. Click **Next**. The Installation Location window displays. Click Browse to select the Oracle Home location where the WebLogic Server is to be installed.

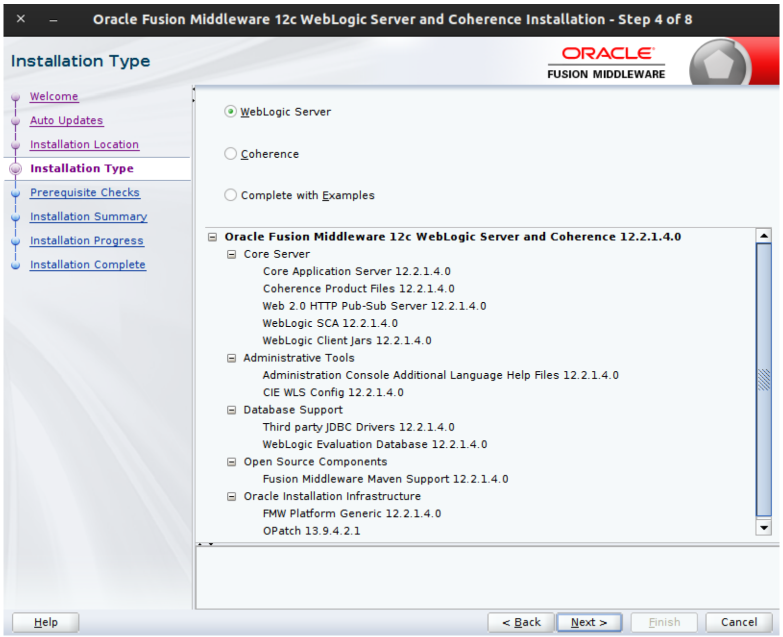


Oracle Home:

Feature Sets Installed At Selected Oracle Home:

Oracle Home may only contain alphanumeric, underscore (_), hyphen (-) or dot(.) characters and it must begin with an alphanumeric character.

6. Click **Next**. The Installation Type window displays. Select the type of installation.



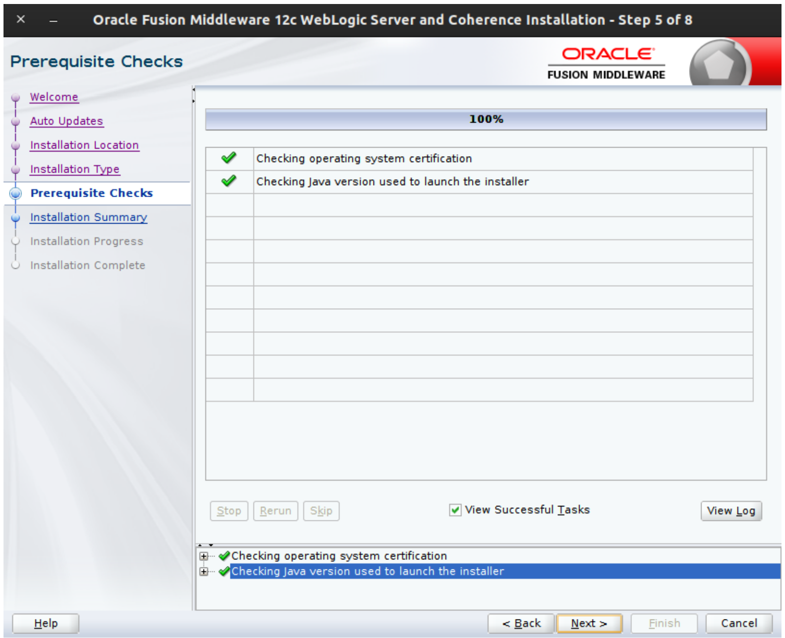
● WebLogic Server

○ Coherence

○ Complete with Examples

- Oracle Fusion Middleware 12c WebLogic Server and Coherence 12.2.1.4.0
  - Core Server
    - Core Application Server 12.2.1.4.0
    - Coherence Product Files 12.2.1.4.0
    - Web 2.0 HTTP Pub-Sub Server 12.2.1.4.0
    - WebLogic SCA 12.2.1.4.0
    - WebLogic Client Jars 12.2.1.4.0
  - Administrative Tools
    - Administration Console Additional Language Help Files 12.2.1.4.0
    - CIE WLS Config 12.2.1.4.0
  - Database Support
    - Third party JDBC Drivers 12.2.1.4.0
    - WebLogic Evaluation Database 12.2.1.4.0
  - Open Source Components
    - Fusion Middleware Maven Support 12.2.1.4.0
  - Oracle Installation Infrastructure
    - FMW Platform Generic 12.2.1.4.0
    - OPatch 13.9.4.2.1

7. Click **Next**. The installer performs the pre-requisite checks and ensures all required conditions are satisfied.



✓ Checking operating system certification

✓ Checking Java version used to launch the installer

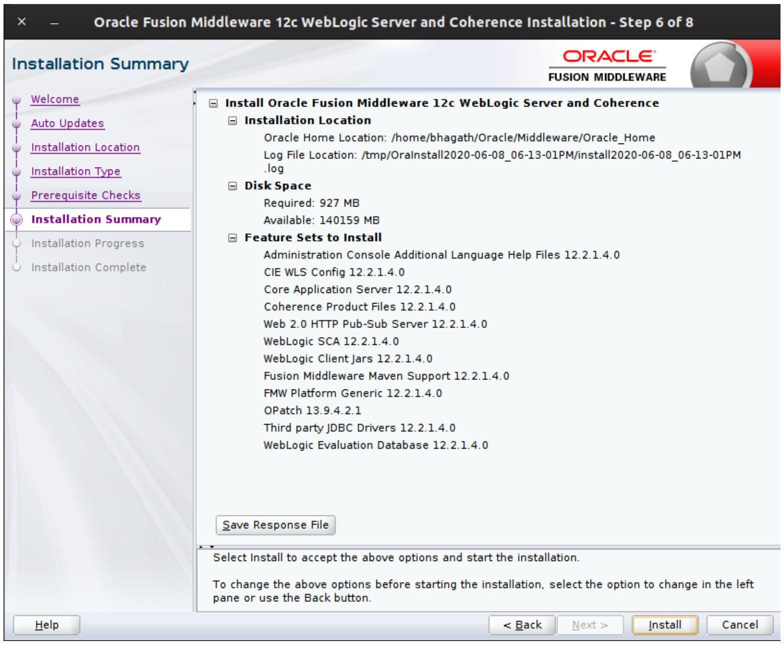
☑ View Successful Tasks

✓ Checking operating system certification

✓ Checking Java version used to launch the installer

8. When the pre-requisite check completes successfully, click **Next**. The Security Updates window will display. Enter the information as required.

9. Click **Next**. The Installation Summary window displays.

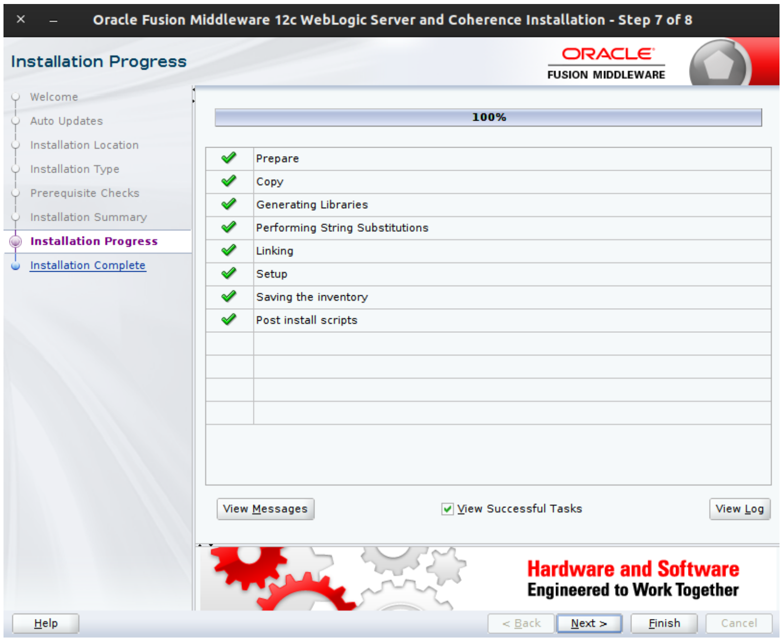


- Install Oracle Fusion Middleware 12c WebLogic Server and Coherence
  - Installation Location
    - Oracle Home Location: /home/bhagath/Oracle/Middleware/Oracle_Home
    - Log File Location: /tmp/OraInstall2020-06-08_06-13-01PM/install2020-06-08_06-13-01PM.log
  - Disk Space
    - Required: 927 MB
    - Available: 140159 MB
  - Feature Sets to Install
    - Administration Console Additional Language Help Files 12.2.1.4.0
    - CIE WLS Config 12.2.1.4.0
    - Core Application Server 12.2.1.4.0
    - Coherence Product Files 12.2.1.4.0
    - Web 2.0 HTTP Pub-Sub Server 12.2.1.4.0
    - WebLogic SCA 12.2.1.4.0
    - WebLogic Client Jars 12.2.1.4.0
    - Fusion Middleware Maven Support 12.2.1.4.0
    - FMW Platform Generic 12.2.1.4.0
    - OPatch 13.9.4.2.1
    - Third party JDBC Drivers 12.2.1.4.0
    - WebLogic Evaluation Database 12.2.1.4.0

Select Install to accept the above options and start the installation.

To change the above options before starting the installation, select the option to change in the left pane or use the Back button.

10. Click **Install**. The Installation Progress window displays.

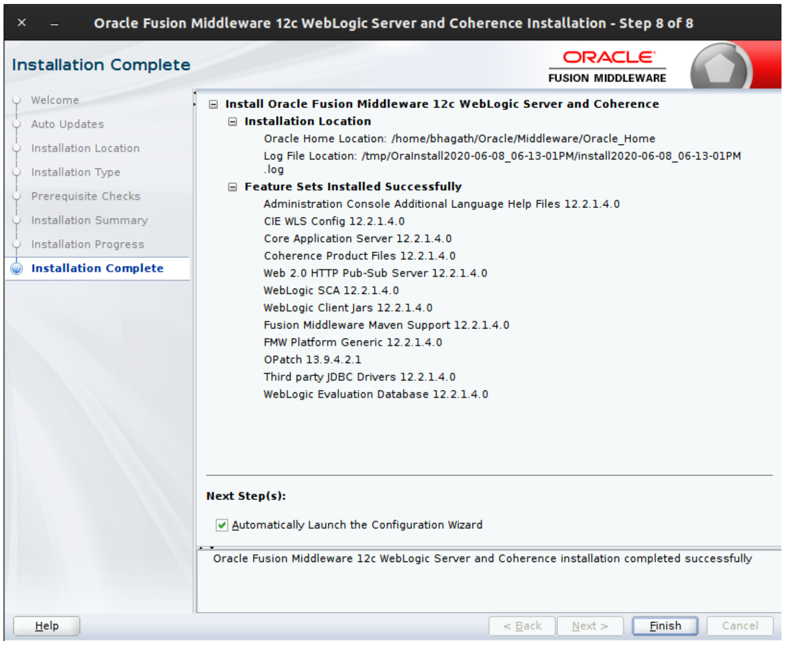


Oracle Fusion Middleware 12c WebLogic Server and Coherence Installation - Step 7 of 8

100%

- ✓ Prepare
- ✓ Copy
- ✓ Generating Libraries
- ✓ Performing String Substitutions
- ✓ Linking
- ✓ Setup
- ✓ Saving the inventory
- ✓ Post install scripts

11. Click **Next** when the installation completes. The Installation Complete window displays.



Oracle Fusion Middleware 12c WebLogic Server and Coherence Installation - Step 8 of 8

⊟ Install Oracle Fusion Middleware 12c WebLogic Server and Coherence
  ⊟ Installation Location
    Oracle Home Location: /home/bhagath/Oracle/Middleware/Oracle_Home
    Log File Location: /tmp/OraInstall2020-06-08_06-13-01PM/install2020-06-08_06-13-01PM.log
  ⊟ Feature Sets Installed Successfully
    Administration Console Additional Language Help Files 12.2.1.4.0
    CIE WLS Config 12.2.1.4.0
    Core Application Server 12.2.1.4.0
    Coherence Product Files 12.2.1.4.0
    Web 2.0 HTTP Pub-Sub Server 12.2.1.4.0
    WebLogic SCA 12.2.1.4.0
    WebLogic Client Jars 12.2.1.4.0
    Fusion Middleware Maven Support 12.2.1.4.0
    FMW Platform Generic 12.2.1.4.0
    OPatch 13.9.4.2.1
    Third party JDBC Drivers 12.2.1.4.0
    WebLogic Evaluation Database 12.2.1.4.0

Next Step(s):

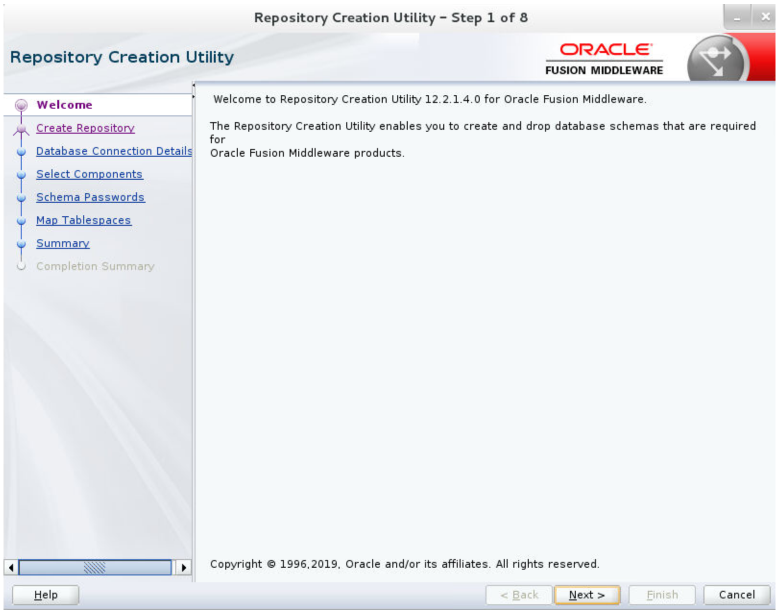
☑ Automatically Launch the Configuration Wizard

Oracle Fusion Middleware 12c WebLogic Server and Coherence installation completed successfully

Creating the Required Schema Using Repository Creation Utility

To create a schema user for the dynamic_data_service domain, take the following steps:

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



Welcome to Repository Creation Utility 12.2.1.4.0 for Oracle Fusion Middleware.

The Repository Creation Utility enables you to create and drop database schemas that are required for
Oracle Fusion Middleware products.

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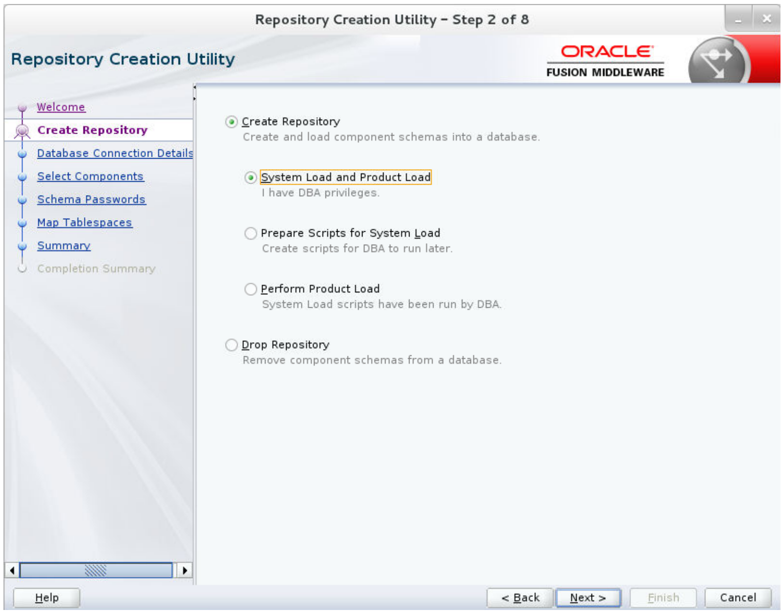
2. Click **Next** and select the Create Repository option.



● Create Repository
Create and load component schemas into a database.

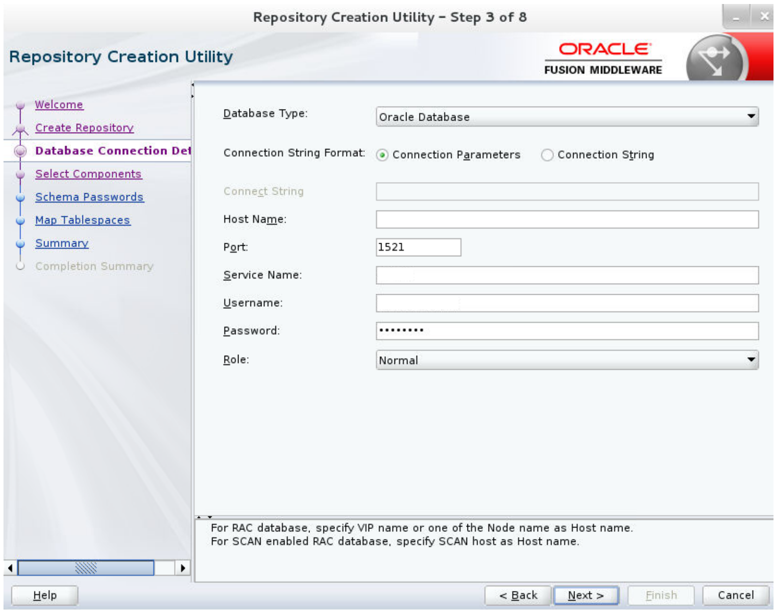
● System Load and Product Load
I have DBA privileges.

○ Prepare Scripts for System Load
Create scripts for DBA to run later.

○ Perform Product Load
System Load scripts have been run by DBA.

○ Drop Repository
Remove component schemas from a database.

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



Database Type: Oracle Database

Connection String Format: ● Connection Parameters ○ Connection String

Connect String:

Host Name:

Port: 1521

Service Name:

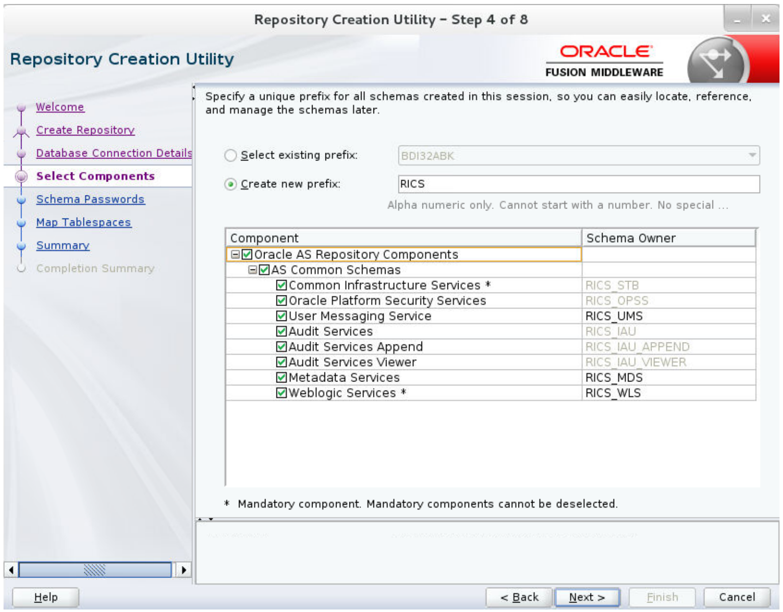
Username:

Password: ••••••••

Role: Normal

For RAC database, specify VIP name or one of the Node name as Host name.
For SCAN enabled RAC database, specify SCAN host as Host name.

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.



Specify a unique prefix for all schemas created in this session, so you can easily locate, reference, and manage the schemas later.

○ Select existing prefix: BDI32ABK

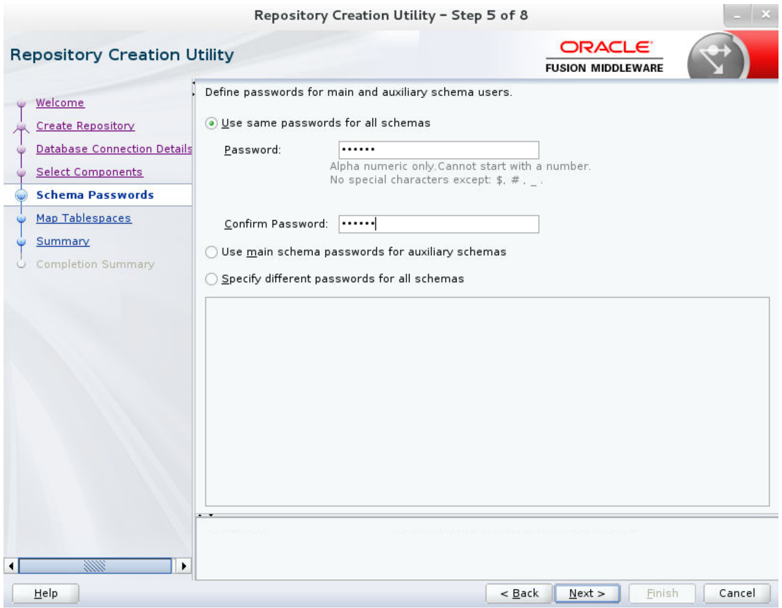
● Create new prefix: RICS

Alpha numeric only. Cannot start with a number. No special ...

Component	Schema Owner
⊟☑Oracle AS Repository Components	
⊟☑AS Common Schemas	
☑Common Infrastructure Services *	RICS_STB
☑Oracle Platform Security Services	RICS_OPSS
☑User Messaging Service	RICS_UMS
☑Audit Services	RICS_IAU
☑Audit Services Append	RICS_IAU_APPEND
☑Audit Services Viewer	RICS_IAU_VIEWER
☑Metadata Services	RICS_MDS
☑Weblogic Services *	RICS_WLS

* Mandatory component. Mandatory components cannot be deselected.

5. Click **Next**. Specify the password.



Define passwords for main and auxiliary schema users.

● Use same passwords for all schemas

Password: ••••••

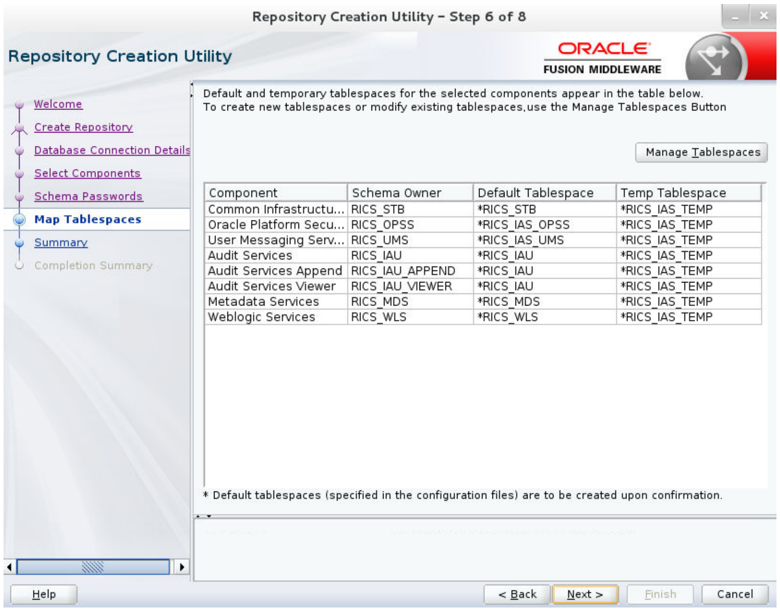
Alpha numeric only.Cannot start with a number.
No special characters except: $, #, _.

Confirm Password: ••••••

○ Use main schema passwords for auxiliary schemas

○ Specify different passwords for all schemas

6. Click **Next**. This window provides the details for tablespaces created as part of schema creation.

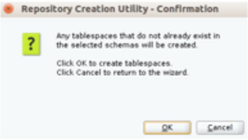


Default and temporary tablespaces for the selected components appear in the table below.
To create new tablespaces or modify existing tablespaces,use the Manage Tablespaces Button

Component	Schema Owner	Default Tablespace	Temp Tablespace
Common Infrastructu...	RICS_STB	*RICS_STB	*RICS_IAS_TEMP
Oracle Platform Secu...	RICS_OPSS	*RICS_IAS_OPSS	*RICS_IAS_TEMP
User Messaging Serv...	RICS_UMS	*RICS_IAS_UMS	*RICS_IAS_TEMP
Audit Services	RICS_IAU	*RICS_IAU	*RICS_IAS_TEMP
Audit Services Append	RICS_IAU_APPEND	*RICS_IAU	*RICS_IAS_TEMP
Audit Services Viewer	RICS_IAU_VIEWER	*RICS_IAU	*RICS_IAS_TEMP
Metadata Services	RICS_MDS	*RICS_MDS	*RICS_IAS_TEMP
Weblogic Services	RICS_WLS	*RICS_WLS	*RICS_IAS_TEMP

* Default tablespaces (specified in the configuration files) are to be created upon confirmation.

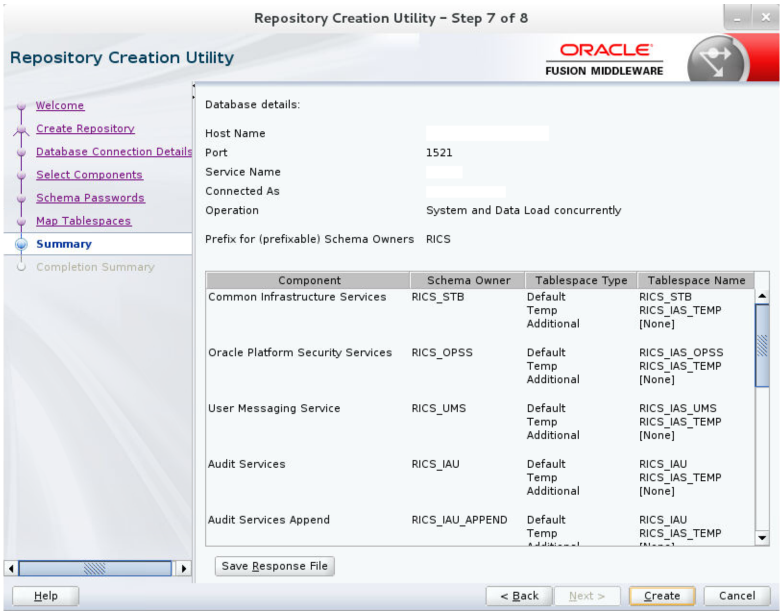
7. Click **Next**. The Confirmation window displays.



Any tablespaces that do not already exist in the selected schemas will be created.

Click OK to create tablespaces.
Click Cancel to return to the wizard.

8. Click **OK**. The Summary window displays.

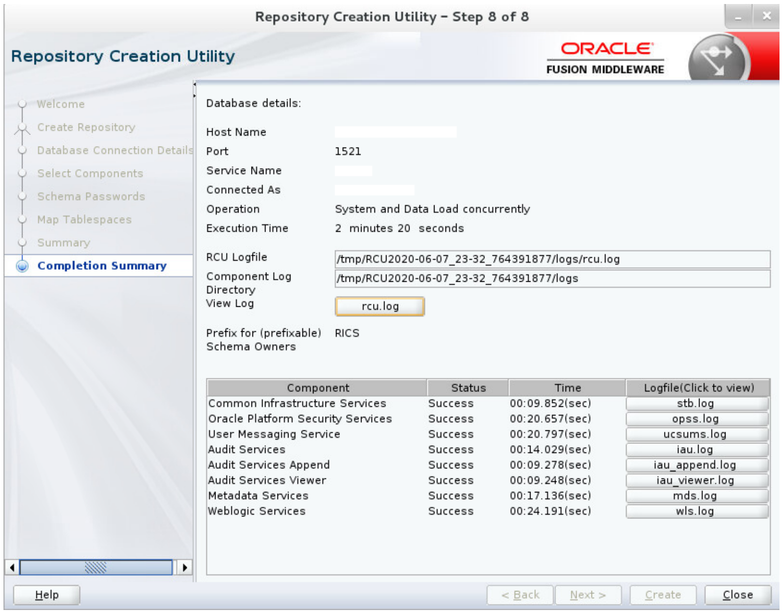


Database details:

Host Name	[redacted]
Port	1521
Service Name	[redacted]
Connected As	[redacted]
Operation	System and Data Load concurrently
Prefix for (prefixable) Schema Owners	RICS

Component	Schema Owner	Tablespace Type	Tablespace Name
Common Infrastructure Services	RICS_STB	Default Temp Additional	RICS_STB RICS_IAS_TEMP [None]
Oracle Platform Security Services	RICS_OPSS	Default Temp Additional	RICS_IAS_OPSS RICS_IAS_TEMP [None]
User Messaging Service	RICS_UMS	Default Temp Additional	RICS_IAS_UMS RICS_IAS_TEMP [None]
Audit Services	RICS_IAU	Default Temp Additional	RICS_IAU RICS_IAS_TEMP [None]
Audit Services Append	RICS_IAU_APPEND	Default Temp	RICS_IAU RICS_IAS_TEMP

9. Click **Create** to create the schema. This could take a while to complete. When complete the Summary window displays.



Database details:

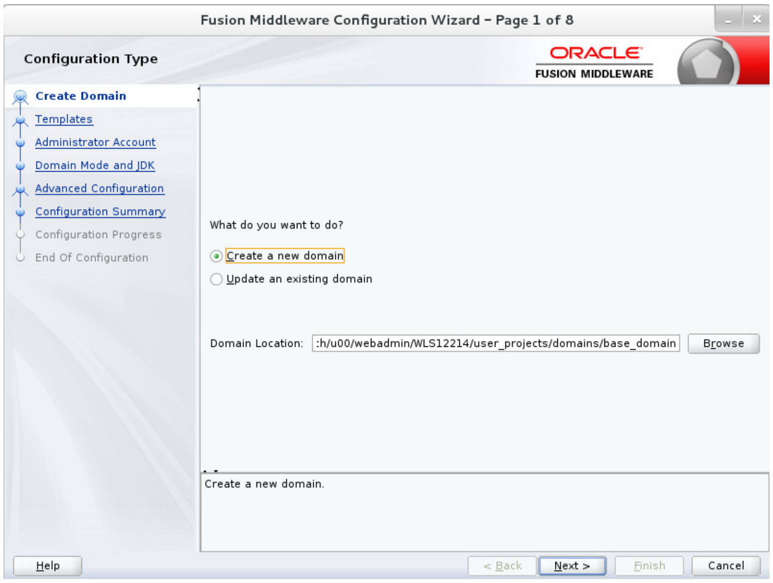
Host Name	[redacted]
Port	1521
Service Name	[redacted]
Connected As	[redacted]
Operation	System and Data Load concurrently
Execution Time	2 minutes 20 seconds
RCU Logfile	/tmp/RCU2020-06-07_23-32_764391877/logs/rcu.log
Component Log Directory	/tmp/RCU2020-06-07_23-32_764391877/logs
View Log	rcu.log
Prefix for (prefixable) Schema Owners	RICS

Component	Status	Time	Logfile(Click to view)
Common Infrastructure Services	Success	00:09.852(sec)	stb.log
Oracle Platform Security Services	Success	00:20.657(sec)	opss.log
User Messaging Service	Success	00:20.797(sec)	ucsums.log
Audit Services	Success	00:14.029(sec)	iau.log
Audit Services Append	Success	00:09.278(sec)	iau_append.log
Audit Services Viewer	Success	00:09.248(sec)	iau_viewer.log
Metadata Services	Success	00:17.136(sec)	mds.log
Weblogic Services	Success	00:24.191(sec)	wls.log

Creating a WebLogic Domain with JRF

To create a new WebLogic domain with ADF runtime libraries, take the following steps:

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



What do you want to do?

● Create a new domain

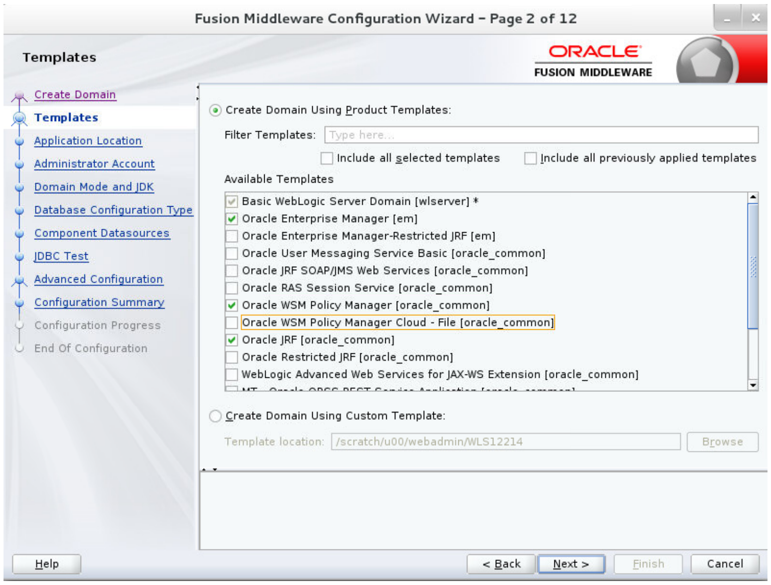
○ Update an existing domain

Domain Location: :h/u00/webadmin/WLS12214/user_projects/domains/base_domain Browse

Create a new domain.

2. Select Create a new domain, and provide a domain location, then click Next. The Templates window displays. By default, the Basic WebLogic Server Domain - 12.2.1.0 [wlserver] check box is selected.

   Select the Oracle JRF - 12.2.1.4.0 [oracle_common], Oracle Enterprise Manager - 12.2.1.4.0 [em], Oracle WSM Policy Manager - 12.2.1.4.0 [oracle_common], and WebLogic Coherence Cluster Extension - 12.2.1.4.0[wlserver] check boxes.



● Create Domain Using Product Templates:

Filter Templates: Type here...

□ Include all selected templates □ Include all previously applied templates

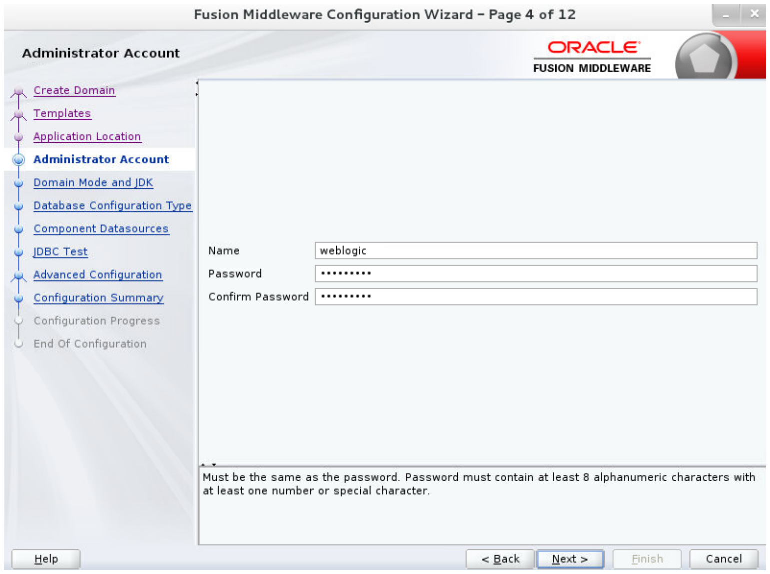
Available Templates

☑ Basic WebLogic Server Domain [wlserver] *
☑ Oracle Enterprise Manager [em]
□ Oracle Enterprise Manager-Restricted JRF [em]
□ Oracle User Messaging Service Basic [oracle_common]
□ Oracle JRF SOAP/JMS Web Services [oracle_common]
□ Oracle RAS Session Service [oracle_common]
☑ Oracle WSM Policy Manager [oracle_common]
□ Oracle WSM Policy Manager Cloud - File [oracle_common]
☑ Oracle JRF [oracle_common]
□ Oracle Restricted JRF [oracle_common]
□ WebLogic Advanced Web Services for JAX-WS Extension [oracle_common]

○ Create Domain Using Custom Template:

Template location: /scratch/u00/webadmin/WLS12214 Browse

3. Click **Next**. The Administrator Account window displays. Enter the user credentials that will be used to log into the WebLogic Administration Console.



Administrator Account

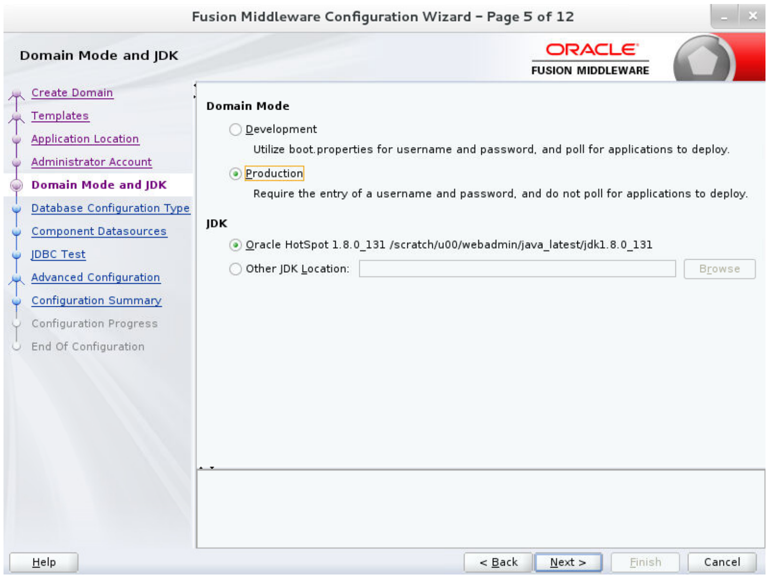
Name: weblogic

Password: •••••••••

Confirm Password: •••••••••

Must be the same as the password. Password must contain at least 8 alphanumeric characters with at least one number or special character.

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



Domain Mode and JDK

Domain Mode

○ Development

Utilize boot.properties for username and password, and poll for applications to deploy.

● Production

Require the entry of a username and password, and do not poll for applications to deploy.

JDK

● Oracle HotSpot 1.8.0_131 /scratch/u00/webadmin/java_latest/jdk1.8.0_131

○ Other JDK Location:

5. Click **Next**. The Database Configuration Type window displays.

   a. Select the RCU Data radio button.

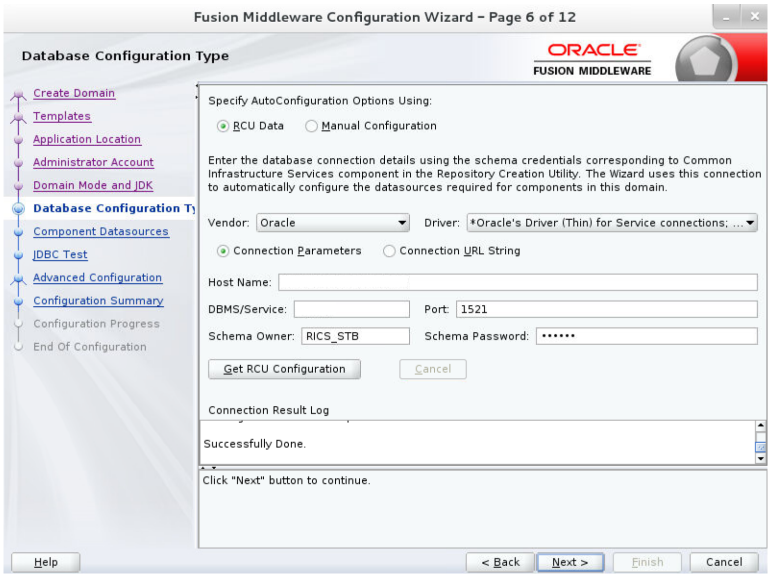
   b. Select Oracle as the Vendor.

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

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

   e. Click Get RCU Configuration.

   The Connection Result Log displays the connection status.



Specify AutoConfiguration Options Using:

● RCU Data ○ Manual Configuration

Enter the database connection details using the schema credentials corresponding to Common Infrastructure Services component in the Repository Creation Utility. The Wizard uses this connection to automatically configure the datasources required for components in this domain.

Vendor: Oracle Driver: *Oracle's Driver (Thin) for Service connections; ...

● Connection Parameters ○ Connection URL String

Host Name:

DBMS/Service: Port: 1521

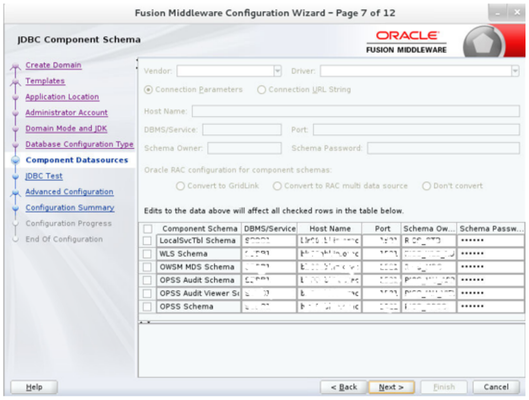
Schema Owner: RICS_STB Schema Password: ••••••

Connection Result Log

```
Successfully Done.
```

Click "Next" button to continue.

6. Click **Next**. The JDBC Component Schema window displays.



Vendor: Driver:

○ Connection Parameters ○ Connection URL String

Host Name:

DBMS/Service: Port:

Schema Owner: Schema Password:

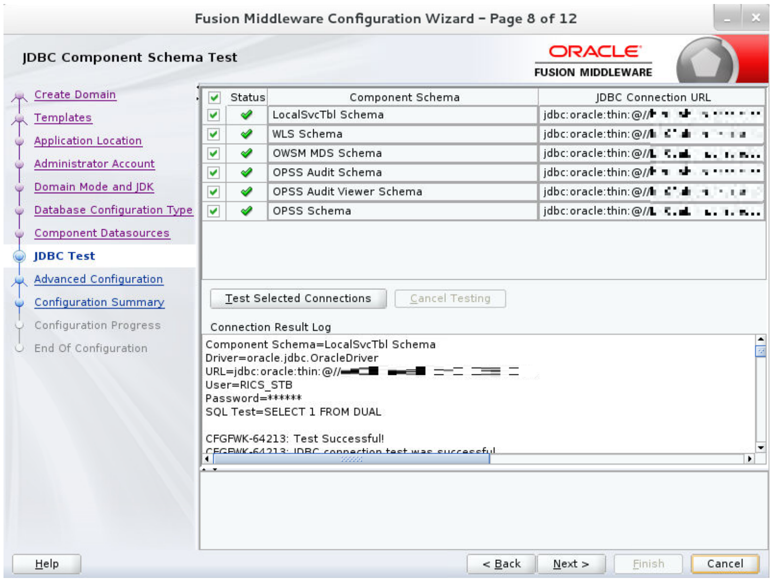
Oracle RAC configuration for component schemas:

○ Convert to GridLink ○ Convert to RAC multi data source ○ Don't convert

Edits to the data above will affect all checked rows in the table below.

□	Component Schema	DBMS/Service	Host Name	Port	Schema Ow...	Schema Passw...
□	LocalSvcTbl Schema	[redacted]	[redacted]	[redacted]	[redacted]	••••••
□	WLS Schema	[redacted]	[redacted]	[redacted]	[redacted]	••••••
□	OWSM MDS Schema	[redacted]	[redacted]	[redacted]	[redacted]	••••••
□	OPSS Audit Schema	[redacted]	[redacted]	[redacted]	[redacted]	••••••
□	OPSS Audit Viewer Sc	[redacted]	[redacted]	[redacted]	[redacted]	••••••
□	OPSS Schema	[redacted]	[redacted]	[redacted]	[redacted]	••••••

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



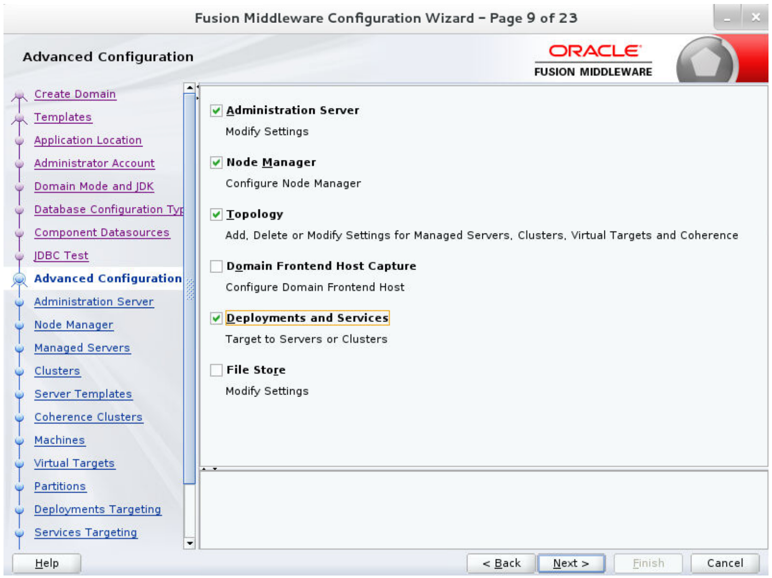
☑	Status	Component Schema	JDBC Connection URL
☑	✓	LocalSvcTbl Schema	jdbc:oracle:thin:@//[redacted]
☑	✓	WLS Schema	jdbc:oracle:thin:@//[redacted]
☑	✓	OWSM MDS Schema	jdbc:oracle:thin:@//[redacted]
☑	✓	OPSS Audit Schema	jdbc:oracle:thin:@//[redacted]
☑	✓	OPSS Audit Viewer Schema	jdbc:oracle:thin:@//[redacted]
☑	✓	OPSS Schema	jdbc:oracle:thin:@//[redacted]

Connection Result Log

```
Component Schema=LocalSvcTbl Schema
Driver=oracle.jdbc.OracleDriver
URL=jdbc:oracle:thin:@//[redacted]
User=RICS_STB
Password=******
SQL Test=SELECT 1 FROM DUAL

CFGFWK-64213: Test Successful!
CFGFWK-64213: JDBC connection test was 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.



Advanced Configuration

☑ **Administration Server**
Modify Settings

☑ **Node Manager**
Configure Node Manager

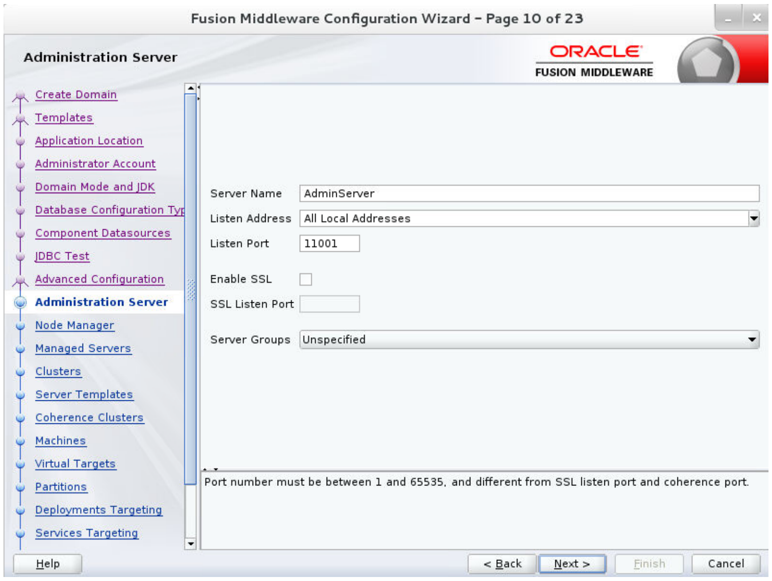
☑ **Topology**
Add, Delete or Modify Settings for Managed Servers, Clusters, Virtual Targets and Coherence

□ **Domain Frontend Host Capture**
Configure Domain Frontend Host

☑ **Deployments and Services**
Target to Servers or Clusters

□ **File Store**
Modify Settings

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

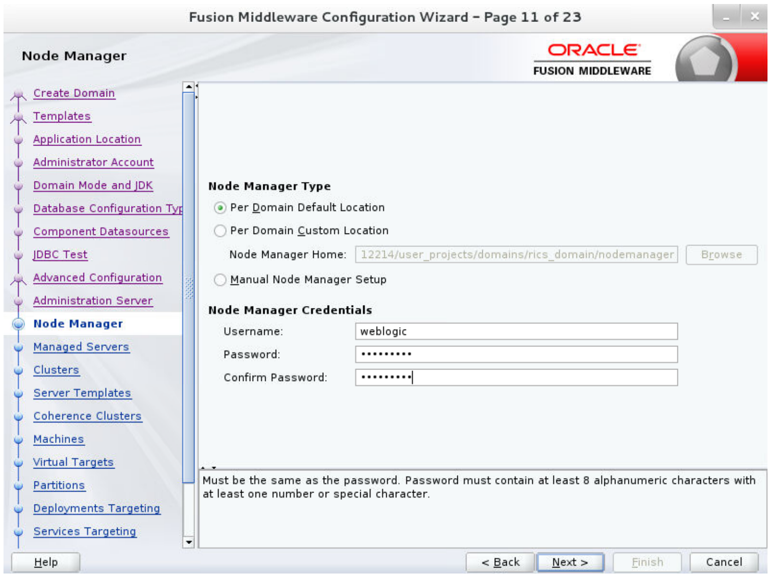


Administration Server

Server Name: AdminServer
Listen Address: All Local Addresses
Listen Port: 11001
Enable SSL: □
SSL Listen Port:
Server Groups: Unspecified

Port number must be between 1 and 65535, and different from SSL listen port and coherence port.

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



Node Manager Type

● Per Domain Default Location

○ Per Domain Custom Location

Node Manager Home: 12214/user_projects/domains/rics_domain/nodemanager

○ Manual Node Manager Setup

Node Manager Credentials

Username: weblogic

Password: •••••••••

Confirm Password: •••••••••

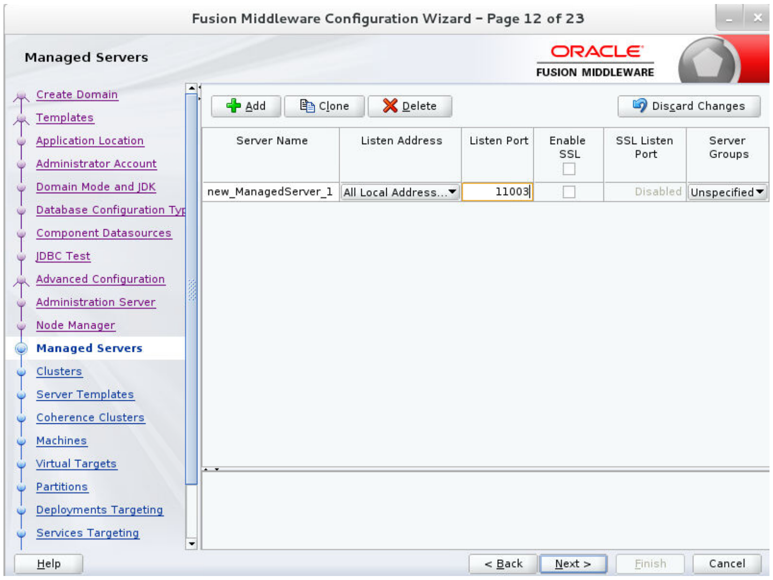
Must be the same as the password. Password must contain at least 8 alphanumeric characters with at least one number or special character.

11. Click **Next**. The Managed Servers window displays.

    a. Click Add to add a managed server to deploy the DDS Web Application.

    b. Enter the Server Name, Listen Address, and Listen Port for the managed server.

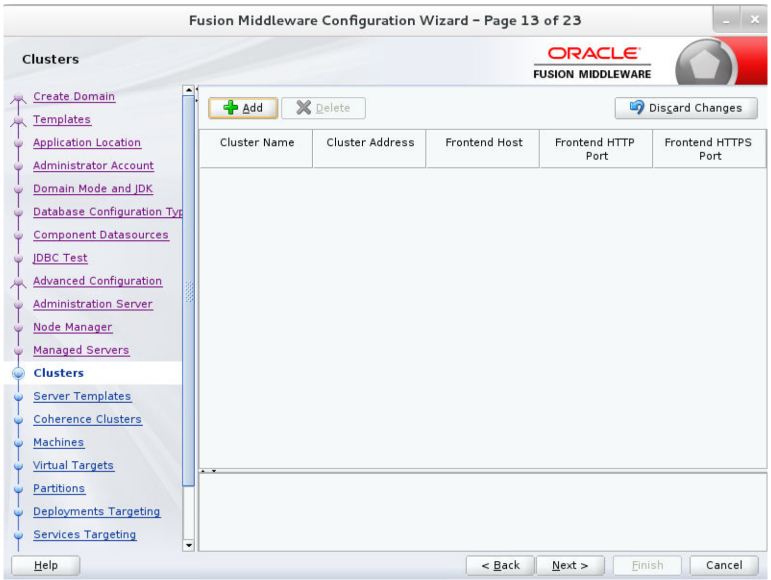
    c. Set the Server Groups to JRF_MAN_SRV.



Server Name	Listen Address	Listen Port	Enable SSL □	SSL Listen Port	Server Groups
new_ManagedServer_1	All Local Address...	11003	□	Disabled	Unspecified

12. Click **Next**. The Clusters window displays.

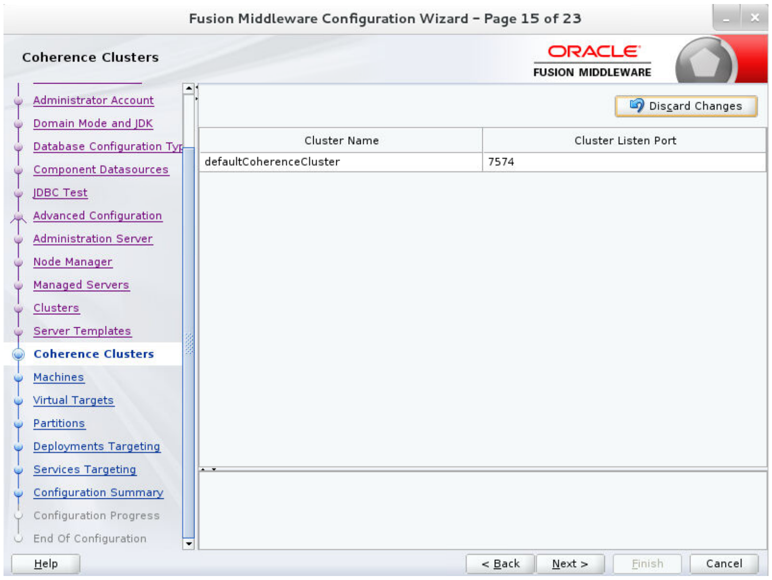
    a. Click **Add** to add a cluster. This is an optional step in the procedure.



Cluster Name	Cluster Address	Frontend Host	Frontend HTTP Port	Frontend HTTPS Port

13. Click **Next**. The Coherence Clusters window displays.

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

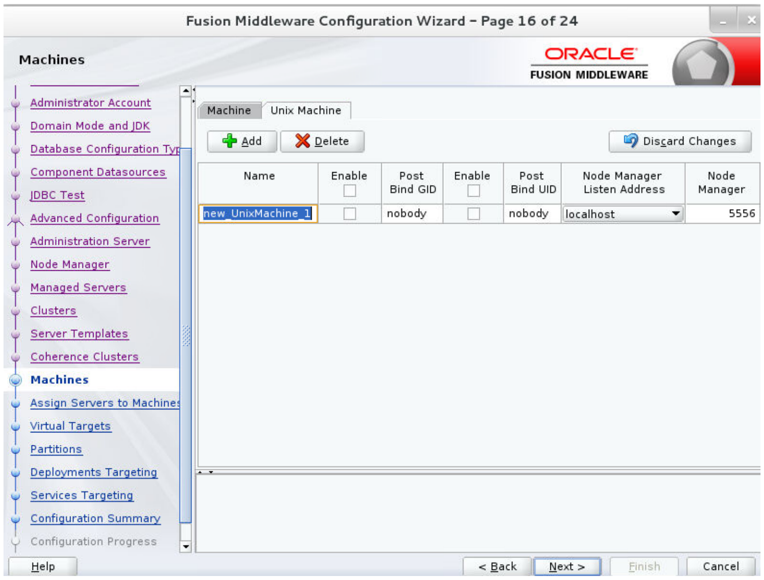


Cluster Name	Cluster Listen Port
defaultCoherenceCluster	7574

14. Click **Next**. The Machines window displays.

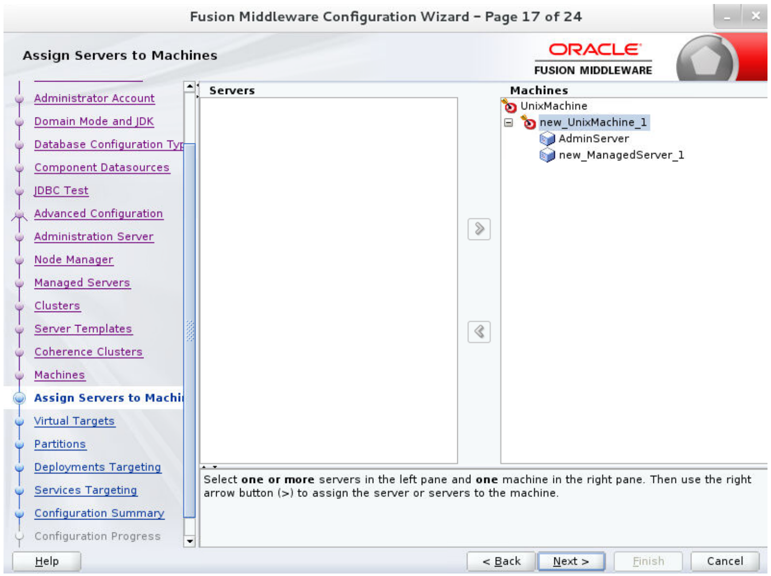
    a. Click **Add**.

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



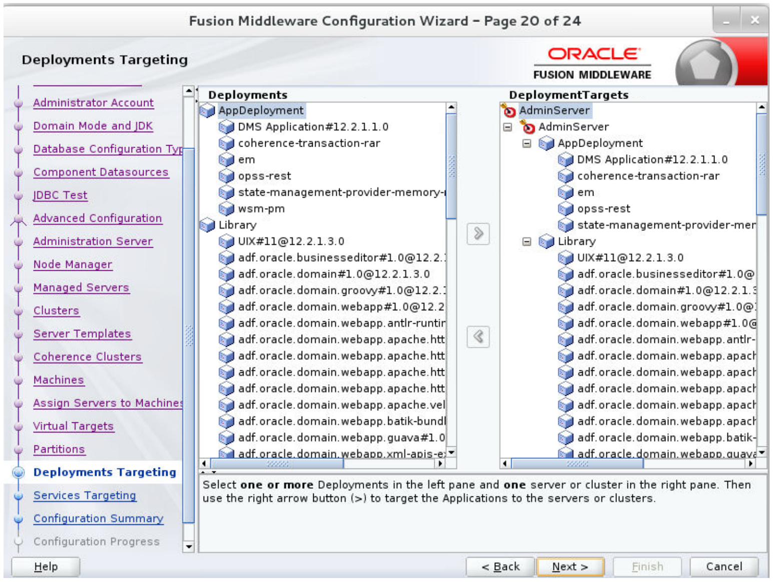
Name	Enable □	Post Bind GID	Enable □	Post Bind UID	Node Manager Listen Address	Node Manager
new_UnixMachine_1	□	nobody	□	nobody	localhost	5556

15. Click **Next**. The Assign Servers to Machines window displays. Add the AdminServer and the Managed Server to the machine.



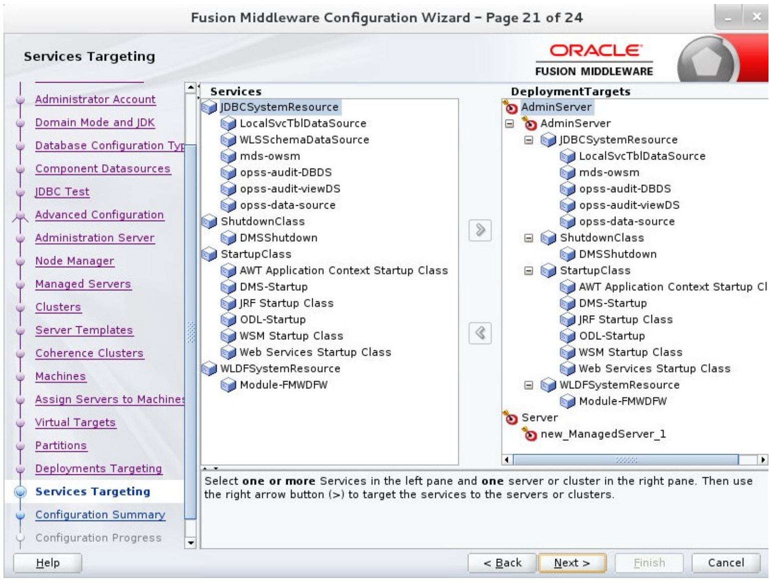
Select **one or more** servers in the left pane and **one** machine in the right pane. Then use the right arrow button (>) to assign the server or servers to the machine.

16. Click **Next**. The Deployments Targeting window displays. Select wsm-pm from the Deployments section on the left and add it to the AdminServer in the Deployment Targets section on the right.


Fusion Middleware Configuration Wizard - Page 20 of 24
Deployments Targeting
ORACLE
FUSION MIDDLEWARE
Administrator Account
Domain Mode and JDK
Database Configuration Typ
Component Datasources
JDBC Test
Advanced Configuration
Administration Server
Node Manager
Managed Servers
Clusters
Server Templates
Coherence Clusters
Machines
Assign Servers to Machines
Virtual Targets
Partitions
Deployments Targeting
Services Targeting
Configuration Summary
Configuration Progress
Deployments
AppDeployment
DMS Application#12.2.1.1.0
coherence-transaction-rar
em
opss-rest
state-management-provider-memory-
wsm-pm
Library
UIX#11@12.2.1.3.0
adf.oracle.businesseditor#1.0@12.2.
adf.oracle.domain#1.0@12.2.1.3.0
adf.oracle.domain.groovy#1.0@12.2.
adf.oracle.domain.webapp#1.0@12.2
adf.oracle.domain.webapp.antlr-runtir
adf.oracle.domain.webapp.apache.htt
adf.oracle.domain.webapp.apache.htt
adf.oracle.domain.webapp.apache.htt
adf.oracle.domain.webapp.apache.htt
adf.oracle.domain.webapp.apache.vel
adf.oracle.domain.webapp.batik-bundl
adf.oracle.domain.webapp.guava#1.0
adf.oracle.domain.webapp.xml-apis-e
DeploymentTargets
AdminServer
AdminServer
AppDeployment
DMS Application#12.2.1.1.0
coherence-transaction-rar
em
opss-rest
state-management-provider-mer
Library
UIX#11@12.2.1.3.0
adf.oracle.businesseditor#1.0@
adf.oracle.domain#1.0@12.2.1.
adf.oracle.domain.groovy#1.0@
adf.oracle.domain.webapp#1.0@
adf.oracle.domain.webapp.antlr-
adf.oracle.domain.webapp.apach
adf.oracle.domain.webapp.apach
adf.oracle.domain.webapp.apach
adf.oracle.domain.webapp.apach
adf.oracle.domain.webapp.apach
adf.oracle.domain.webapp.batik-
adf.oracle.domain.webapp.guava
Help
< Back
Next >
Finish
Cancel

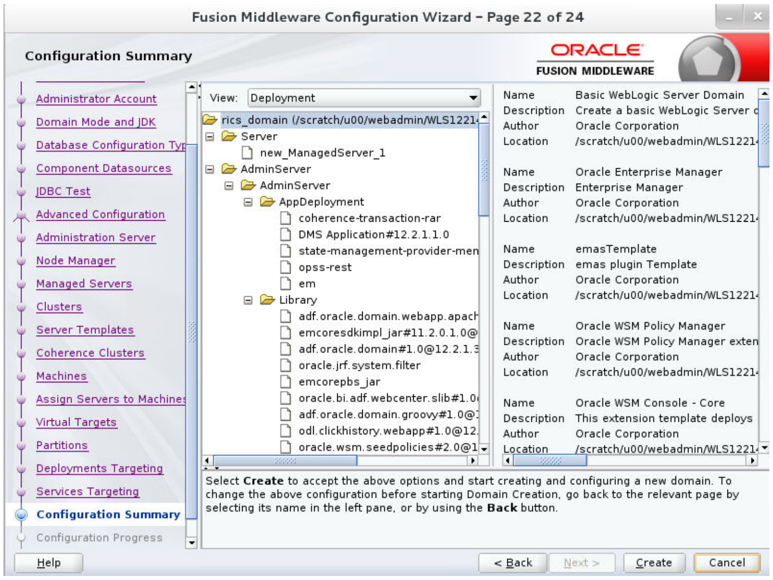
Select **one or more** Deployments in the left pane and **one** server or cluster in the right pane. Then use the right arrow button (>) to target the Applications to the servers or clusters.

17. Click **Next**. The Services Targeting window displays. Target JDBC services to the Admin and Managed server.



Select **one or more** Services in the left pane and **one** server or cluster in the right pane. Then use the right arrow button (>) to target the services to the servers or clusters.

18. Click **Next**. The Configuration Summary window displays. Verify that all information displayed in this window is accurate.

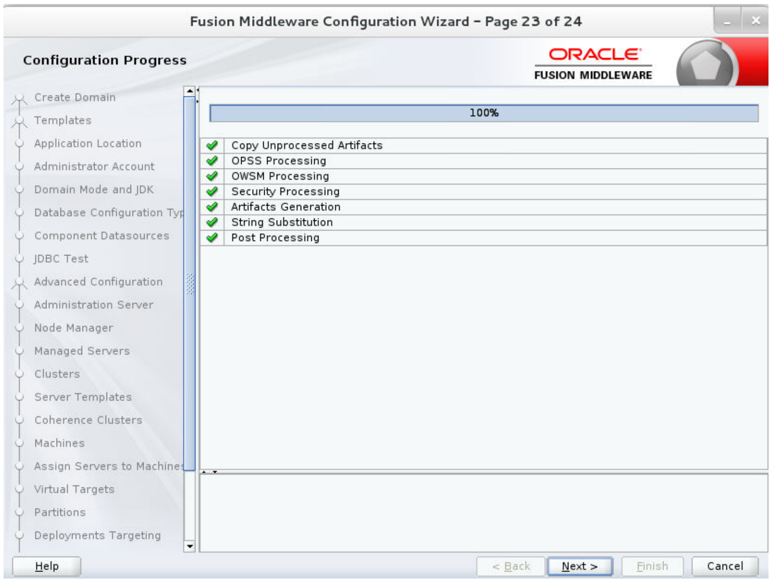


```
rics_domain (/scratch/u00/webadmin/WLS1221
  Server
    new_ManagedServer_1
  AdminServer
    AdminServer
      AppDeployment
        coherence-transaction-rar
        DMS Application#12.2.1.1.0
        state-management-provider-men
        opss-rest
        em
      Library
        adf.oracle.domain.webapp.apach
        emcoresdkimpl_jar#11.2.0.1.0@
        adf.oracle.domain#1.0@12.2.1.3
        oracle.jrf.system.filter
        emcorepbs_jar
        oracle.bi.adf.webcenter.slib#1.0
        adf.oracle.domain.groovy#1.0@1
        odl.clickhistory.webapp#1.0@12.
        oracle.wsm.seedpolicies#2.0@1
```

Name	Basic WebLogic Server Domain
Description	Create a basic WebLogic Server d
Author	Oracle Corporation
Location	/scratch/u00/webadmin/WLS1221
Name	Oracle Enterprise Manager
Description	Enterprise Manager
Author	Oracle Corporation
Location	/scratch/u00/webadmin/WLS1221
Name	emasTemplate
Description	emas plugin Template
Author	Oracle Corporation
Location	/scratch/u00/webadmin/WLS1221
Name	Oracle WSM Policy Manager
Description	Oracle WSM Policy Manager exten
Author	Oracle Corporation
Location	/scratch/u00/webadmin/WLS1221
Name	Oracle WSM Console - Core
Description	This extension template deploys
Author	Oracle Corporation
Location	/scratch/u00/webadmin/WLS1221

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

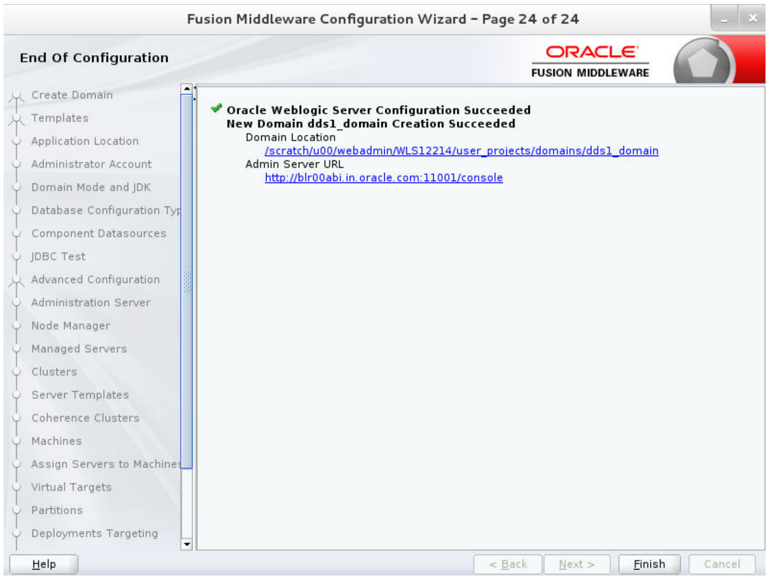
19. Click **Create**. The Configuration Progress window will display a message when the domain is created successfully.



100%

- ✓ Copy Unprocessed Artifacts
- ✓ OPSS Processing
- ✓ OWSM Processing
- ✓ Security Processing
- ✓ Artifacts Generation
- ✓ String Substitution
- ✓ Post Processing

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



✓ Oracle Weblogic Server Configuration Succeeded
New Domain dds1_domain Creation Succeeded
Domain Location
/scratch/u00/webadmin/WLS12214/user_projects/domains/dds1_domain
Admin Server URL
http://blr00abi.in.oracle.com:11001/console

21. Click **Finish** to complete creating the WebLogic domain and managed servers with ADF runtime.

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 Managed Server.

3

Deploying DDS Web Application

This chapter describes the steps you should take to deploy DDS Web Application.

Preparing the Database for DDS Installation

Before you begin installing the DDS Web Application, make sure you have a valid DDS Data Source available. DDS assumes that the tables created, in the DDS data schema configured, are valid.

Deploying DDS Web Application on the WebLogic Servers

To deploy the DDS Web Application ear, take the following steps:

1. Download DynamicDataService19.1.000ForAll19.x.xApps_eng_ga.zip

2. Unpack the folder. A folder dds_home will be available.

3. Edit the dds-deployment-env-info.json as follows:

   ```
   cd dds_home/conf/
   vi dds-deployment-env-info.json
   ```

4. Modify the DataSourceDef and MiddlewareServerDef with information that is specific to your environment.

   By default, the JSON files should have placeholders for the DDS, RIB Error Hospital, OCDS and RFI connections, namely DDSDataSource, RibErrorHospitalDataSource, OCDSDataSource and RFIDataSource. If you plan on using either of these connections, delete the other connections that are not in use.

   The table below summarizes the values that need to be changed specific to the environment

Table 3–1 DataSourceDef and MiddlewareServerDef Values

Value	Description
DDSDataSource -> jdbcUrl	Database details of the server where the DDS default data source schema is hosted.
RibErrorHospitalDataSource -> jdbcUrl	Database details of the server where the database schema for the RIB Error hospital table is hosted.
OCDSDataSource -> jdbcUrl	Database details of the server where the database schema for the OCDS application is hosted.
RFIDataSource -> jdbcUrl	Database details of the server where the database schema for the RFI application is hosted.

Table 3–1 (Cont.) DataSourceDef and MiddlewareServerDef Values

Value	Description
DDSAppServer -> weblogicDomainName	Name of the domain where the DDS application will be deployed.
DDSAppServer -> weblogicDomainHome	Absolute path to the domain. (starts from the root directory)
DDSAppServer -> weblogicDomainAdminServerUrl	Admin server URL link of the domain.
DDSAppServer -> weblogicDomainAdminServerProtocol	Web Protocol to be used in the domain. (Can be t3, unsecure or t3s, secure)
DDSAppServer -> weblogicDomainAdminServerHost	Admin server host name. (domain.example.name.com)
DDSAppServer -> weblogicDomainAdminServerPort	Admin server host port number
DDSAppServer -> weblogicDomainTargetManagedServerName	Name of the managed server where DDS will be deployed.
DDSAppServer -> DDSAdminUiUrl	The complete URL link to the deployed DDS application. (http://<host_name>:<managed_sever_port>/)

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

The following is an example configuration:

```
"DataSourceDef":{
"DDSDataSource":{
"dataSourceName":"DDSDataSource",
"dataSourceClass":"oracle.jdbc.pool.OracleDataSource",
"dataSourceJndiName":"jdbc/DDSDataSource",
"jdbcUrl":"jdbc:oracle:thin:@//dbhost.example.com:1522/pdborcl",
"jdbcUserAlias":"DDSAdminDataSourceUserAlias",
"jdbcUser":"GET_FROM_WALLET",
"jdbcPassword":"GET_FROM_WALLET",
},

"RibErrorHospitalDataSource":{
"dataSourceName":"RibErrorHospitalDataSource",
"dataSourceClass":"oracle.jdbc.pool.OracleDataSource",
"dataSourceJndiName":"jdbc/RibErrorHospitalDataSource",
"jdbcUrl":"jdbc:oracle:thin:@//dbhost.example.com:1522/pdborcl",
"jdbcUserAlias":"RibErrorHospitalDataSourceUserAlias",
"jdbcUser":"GET_FROM_WALLET",
"jdbcPassword":"GET_FROM_WALLET",

},

"OCDSDataSource":{
"dataSourceName":"OCDSDataSource",
"dataSourceClass":"oracle.jdbc.pool.OracleDataSource",
"dataSourceJndiName":"jdbc/OCDSDataSource",
"jdbcUrl":"jdbc:oracle:thin:@//dbhost.example.com:1522/pdborcl",
"jdbcUserAlias":"OCDSDataSourceUserAlias",
"jdbcUser":"GET_FROM_WALLET",
"jdbcPassword":"GET_FROM_WALLET",
},

"RFIDataSource":{
"dataSourceName":"RFIDataSource",
"dataSourceClass":"oracle.jdbc.pool.OracleDataSource",
"dataSourceJndiName":"jdbc/RFIDataSource",
"jdbcUrl":"jdbc:oracle:thin:@//dbhost.example.com:1522/pdborcl",
"jdbcUserAlias":"RFIDataSourceUserAlias",
"jdbcUser":"GET_FROM_WALLET",
"jdbcPassword":"GET_FROM_WALLET",
}
}
"MiddlewareServerDef":{
"DDSAppServer": {
"weblogicDomainName": "dds_domain",
"weblogicDomainHome": "home/oracle/middleware_1221/user_projects/domains/dds_
domain",
"weblogicDomainAdminServerUrl": "t3://ddsdomainhost.example.com:7001",
"weblogicDomainAdminServerProtocol": "t3",
"weblogicDomainAdminServerHost": " ddsdomainhost.example.com ",
"weblogicDomainAdminServerPort": "7001",
"weblogicDomainAdminServerUserAlias": "DDSAdminServerUserAlias",
"weblogicDomainTargetManagedServerName": "dds_managed_Server",


"DDSAdminUiUrl":"http://ddsdomainhost.example.com:7003",
"DDSAdminUiUserGroup":"DdsAdminGroup",
"DDSAdminUiUserAlias":"DDSAdminUiUserAlias",
"DDSAdminUiUser":"GET_FROM_WALLET",
"DDSAdminUiPassword":"GET_FROM_WALLET",

"DDSOperatorUiUserGroup":"DdsOperatorGroup",
"DDSOperatorUiUserAlias":"DDSOperatorUiUserAlias",
"DDSOperatorUiUser":"GET_FROM_WALLET",
"DDSOperatorUiPassword":"GET_FROM_WALLET",

"DDSMonitorUiUserGroup":"DdsMonitorGroup",
"DDSMonitorUiUserAlias":"DDSMonitorUiUserAlias",
"DDSMonitorUiUser":"GET_FROM_WALLET",
"DDSMonitorUiPassword":"GET_FROM_WALLET"

}
} ,
"DDSAdminApplication":{
"DDSAdminAppUses":[
"DDSAppServer"
]
}
```

5. Run the deployer script to create the datasource and deploy the DDS Web Application.

   ```
   $cd dds_home/bin/
   $sh dds-deployer.sh -setup-credentials -deploy-dds-app
   ```

6. Enter the parameter value that is prompted by the script.

7. Bounce the WebLogic Server hosting the DDS Web Application.

8. Restrict Access to the DDS home folder:

   ```
   $cd ..
   ```

```
$chmod -R 700 dds-home
```

> **Note:** To deploy the DDS application on a clustered environment, change the following in the config JSON file:
>
> 1. weblogicDomainTargetManagedServerName - give the cluster name as the name of the managed server here.
> 2. DDSAdminUiUrl - give the port number of the managed server which have been linked to the cluster on which DDS is to be deployed.

Redeploying DDS Web Application

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.

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

Testing the Deployment

After you deploy the server successfully, the DDS Web Application can be accessed using the following URL:

```
http://<host-server>:<managed-server-port>/dynamic-data-service-ui
```

4

Security

Dynamic Data Service provides table level, row level, and column level security. All the end points are protected with basic authentication and role based authorization.

There are three security groups that provide role based authorization.

There are three Roles and three Groups.

Roles:

- **AdminRole** - Users with this role have access to all the functions of the DDS app. They can also setup the security permissions for other users.
- **OperatorRole** - Users with this role have the ability to read, write and modify content in the schemas and tables. However they will not have access to the admin functions and cannot setup security permissions.
- **MonitorRole** - Users with this role can only read the data from schemas and tables. They also will not have access to security setup functions.

Groups:

- **DdsAdminGroup** - Users that belong to this group can perform all operations
- **DdsOperatorGroup** - Users that belong to this group can perform all operations except security setup
- **DdsMonitorGroup** - Users that belong to this group can only perform read only operations

The following table lists all the functions which can be performed by the roles and groups mentioned above.

Table 4–1 Functions Performed by Roles and Groups

Role Name	**Admin Role**	**Operator Role**	**Monitor Role**
Group Name	**DdsAdminGroup**	**DdsOperatorGroup**	**DdsMonitorGroup**
Create Access Level	Yes	No	No
Delete Access Level	Yes	No	No
Create Security Group	Yes	No	No
Delete Security Group	Yes	No	No
Create Table Level Security	Yes	No	No
Delete Table Level Security	Yes	No	No

Table 4–1 (Cont.) Functions Performed by Roles and Groups

Role Name	Admin Role	Operator Role	Monitor Role
Group Name	**DdsAdminGroup**	**DdsOperatorGroup**	**DdsMonitorGroup**
View Table Definition	Yes	Yes	Yes
Create Queries	Yes	Yes	Yes
Run Queries	Yes	Yes	Yes
View Table Data	Yes	Yes	Yes
Modify Table data	Yes	Yes	No
Delete Table Data	Yes	Yes	No
Bulk Update Table Data	Yes	Yes	No

Access Levels

Access Level defines security permissions.

Here are the permissions that can be associated with an access level.

- DataReadPermission
- DataCreatePermission
- DataUpdatePermission
- DataDeletePermission
- RowAccessPermission
- ColumnAccessPermission
- DataSecuritySetupPermission

The following access levels are created when default security is setup using the end point (/resources/admin/security/setup/{schemaName}).

- **DdsAdminAccessLevel** - Provides all permissions
- **DdsOperatorAccessLevel** - Provides all permissions except DataSecuritySetupPermission
- **DdsMonitorAccessLevel** - Provides DataReadPermission, RowAccessPermission and ColumnAccessPermission

Table Level Security

Table level security defines who can access a table with set of allowed permissions. A table cannot be accessed if table level security is not setup.

Table level security is associated with the following information.

- Schema Name
- Table Name
- Security Group - Provides who can access the table
- Access Level - Provides permissions

Table level securities are set up for all tables when default security is setup using the end point. Every table is setup to be accessed by users in all security groups with default permissions.

Example

Table - DdsAdminGroup, DdsAdminAccessLevel

Table - DdsOperatorGroup, DdsOperatorAccessLevel

Table - DdsMonitorGroup, DdsMonitorAccessLevel

Column Level Security

Column level security defines who can access a column as well as permission to access the column. By default, Dynamic Data Service allows access to a column if the user has access to the table.

Column level security is defined using the following information.

- Column Name
- Column Permission Type - Valid values are ALLOW, DONT_ALLOW, MASK
- Table Level Security

Row Level Security

Row level security defines who can access row(s) in a table. Row level security can be enabled if the table has user and group columns.

Row level security is defined using the following information.

- EnableRowAccess
- UserColumnName
- GroupColumnName
- TableLevelSecurity

Security Setup

Follow the steps to setup security. Users will not be able access any data without the security setup. Only users that belong to the DdsAdminGroup can set up security.

1. Run the end point (/resources/admin/security/config) to create security configuration for the schema.

   ```
   {
   "schemaName":"schema",
   "enableSecurity":"true",
   "tableLevelSecurityType":"WHITELIST",
   "columnLevelSecurityType":"BLACKLIST"
   }
   ```
2. Run default security setup end point (/resources/admin/security/setup/{schemaName}) to set up default security for all tables.

If the default security setup is not sufficient, use Dynamic Data Service UI to setup the access levels, security groups, and table level securities.

System Options

Dynamic Data Service finds data sources with the JNDI name that starts with "jdbc" by default. The following system option can be used to provide a different JNDI Name pattern.

dataSourcePattern

The system option can be setup using the end point (/resources/system-setting/system-options).

5

RESTful Services

This chapter provides information about the RESTful Services used by DDS.

Discover

This end point returns a list of Dynamic Data Service end points.

HTTP Operation: GET

Path: **/resources/discover**

Get Data

This end point returns data from the provided schema and table(s). The query parameters "fromTables" allows single or multiple tables.

The query parameter "rowFilter" can be used to provide a join between tables.

Tables and columns need to be qualified if multiple tables are provided in "fromTables". The data is returned in JSON/XML format and one page of data is returned. The response contains a link to the next page if there are additional pages.

HTTP Operation: GET

Path: **/resources/dds/{schemaName}/data?fromTables=<tables>**

The following query parameters can be provided to filter the data.

- columnFilter - Columns to be included in the response
- rowFilter - Predicate can be provided in the rowFilter to filter the data
- sortBy - Valid values are ascending(asc) or descending(desc)
- Page - Page number
- pageLimit - Number of records to be included in the page. The default page size is 25
- format - Valid values are short or long. Short format provides data without column names. Long format provides data with column names.

Get Data from a Table

This end point returns data from a table using a primary key.

HTTP Operation: GET

Path: **/resources/dds/{schemaName}/{table}?idFilter=<Primary Key>**

Insert Data

This end point inserts data in a table. Input can be a single record or multiple records provided in JSON format. Users that belong to the admin or operator group can only perform this operation. Users also need to have DataCreatePermission to insert data.

HTTP Operation: PUT

Path: **/resources/dds/{schemaName}/data/{table}**

Sample input for inserting data in the BDI_RECEIVER_OPTIONS table

/dds/bdi_rms_schema/data/BDI_RECEIVER_OPTIONS

```
{
"items":
 [
{
"ID":1,
"BASE_FOLDER":"base",
"FOLDER_TEMPLATE":"baseTemplate",
"INTERFACE_MODULE":"interfaceModule",
"INTERFACE_SHORT_NAME":"interfaceShortName",
"MERGE_STRATEGY":"mergeStrategy"
}
]
}
```

Update Data

This end point updates data in a table using the rowFilter query parameter and input is provided in JSON format. Users that belong to the admin or operator group can only perform this operation. Users also need to have DataUpdatePermission to update data.

HTTP Operation: POST

Path: **/resources/dds/{schemaName}/data/{table}?rowFilter=<predicate>**

Sample input for updating data in the BDI_SYSTEM_OPTIONS table

/dds/bdi_rms_schema/data/BDI_SYSTEM_OPTIONS?rowFilter=VARIABLE_ NAME='LOADJOBDEF'

```
{
"VARIABLE_VALUE":"TRUE"
}
```

Delete Data

This end point deletes data from a table based on the rowFilter query parameter. Users that belong to the admin or operator group can only perform this operation. Users also need to have DataDeletePermission to delete data.

HTTP Operation: DELETE

Path: **/resources/dds/{schemaName}/data/{table}?rowFilter=<predicate>**

Sample End Point

/dds/bdi_rms_schema/data/BDI_SYSTEM_OPTIONS?rowFilter=VARIABLE_ NAME='LOADJOBDEF'

Get Schemas

This end point returns all configured database schemas.

HTTP Operation: GET

Path: **/resources/dds/schemas**

Get Tables

This end point returns all tables from a database schema.

HTTP Operation: GET

Path: **/resources/dds/{schemaName}/tables**

Get Columns for a Table

This end point returns columns for a table.

HTTP Operation: GET

Path: **/resources/dds/{schemaName}/{table}**

Get System Options

This end point returns all system options from the DDS_SYSTEM_OPTIONS table.

HTTP Operation: GET

Path: **/resources/system-setting/system-options**

Create System Options

This end point creates a system option in the DDS_SYSTEM_OPTIONS table.

HTTP Operation: PUT

Path: **/resources/system-setting/system-options**

Sample Input

```
{
"key":"testKey",
"value":"testValue"
}
```

Update System Options

This end point updates a system option in the DDS_SYSTEM_OPTIONS table.

HTTP Operation: POST

Path: **/resources/system-setting/system-options**

Sample Input

```
{
"key":"testKey",
"value":"testValue1"
}
```

Delete System Options

This end point deletes a system option in the DDS_SYSTEM_OPTIONS table.

HTTP Operation: DELETE

Path: **/resources/system-setting/system-options/{key}**

Reset Cache

This end point resets the system option cache.

HTTP Operation: POST

Path: **/resources/system-setting/reset-cache**

6

Security RESTful Services

The security end points are only accessible by users that belong to the admin group.

Get Security Groups

This end point returns configured security groups.

HTTP Operation: GET

Path: **/resources/admin/security/groups**

Get Security Group Permissions

This end point returns all security permissions.

HTTP Operation: GET

Path: **/resources/admin/security/permissions**

Get Access Levels

This end point returns access levels.

HTTP Operation: GET

Path: **/resources/admin/security/accessLevels**

Get Security Config for a Schema

This end point returns the security configuration for a schema.

HTTP Operation: GET

Path: **/resources/admin/security/config/{schemaName}**

Get All Security Config

This end point returns all security configurations.

HTTP Operation: GET

Path: **/resources/admin/security/config**

Get All Table Level Securities

This end point returns all table level securities for a schema.

HTTP Operation: GET

Path: **/resources/admin/security/table/{schemaName}**

Get Table Level Security for Table

This end point returns table level security for a table in a schema.

HTTP Operation: GET

Path: **/resources/admin/security/table/{schemaName}/{tableName}**

Get Table Level Security for Table and Group

This end point returns table level security for a table and group.

HTTP Operation: GET

Path: **/resources/admin/security/table/{schemaName}/{tableName}/{groupName}**

Get Column Level Security for Table and Group

This end point returns column level security for a table and group.

HTTP Operation: GET

Path: **/resources/admin/security/column/{schemaName}/{tableName}/{groupName}**

Get Row Level Security for Table and Group

This end point returns row level security for a table, group, and access level.

HTTP Operation: GET

Path: **/resources/admin/security/row/{schemaName}/{tableName}/{groupName}/{accessLevel}**

Create Access Level

This end point creates an access level.

HTTP Operation: PUT

Path: **/resources/admin/security/accessLevel**

Sample Input

```
{
"accessLevelName":"testAccessLevel",
"accessLevelPermissionVoList: [
"securityPermission":"DataCreatePermission"
]
}
```

Update Access Level

This end point updates an access level.

HTTP Operation: POST

Path: **/resources/admin/security/accessLevel**

Sample Input

```
{
"accessLevelName":"testAccessLevel",
"accessLevelPermissionVoList: [
"securityPermission":"DataCreatePermission"
"securityPermission":"DataDeletePermission"
]
}
```

Delete Access Level

This end point deletes an access level.

HTTP Operation: DELETE

Path: **/resources/admin/security/accessLevel/{accessLevelName}**

Create Table Level Security

This end point creates table level security.

HTTP Operation: PUT

Path: **/resources/admin/security/table**

Sample Input

```
{
"schemaName":"testSchema",
"tableName":"TEST",
"securityGroup":"DDSMonitorGroup",
"accessLevelVo": {
"accessLevelName":"testAccessLevel"
}
}
```

Create Table Level Securities

This end point creates table level securities.

HTTP Operation: PUT

Path: **/resources/admin/security/tables**

Sample Input

```
{
"tableLevelSecurityVoList": [
{
"schemaName":"testSchema",
"tableName":"TEST",
"securityGroup":"DDSMonitorGroup",
"accessLevelVo": {
"accessLevelName":"testAccessLevel"
}
}
]
}
```

Update Table Level Security

This end point updates table level security.

HTTP Operation: POST

Path: **/resources/admin/security/table**

Sample Input

```
{
"schemaName":"testSchema",
"tableName":"TEST",
"securityGroup":"DDSMonitorGroup",
"accessLevelVo": {
"accessLevelName":"monitorAccessLevel"
}
}
```

Update Table Level Securities

This end point updates table level securities.

HTTP Operation: POST

Path: **/resources/admin/security/tables**

Sample Input

```
{
"tableLevelSecurityVoList": [
{
"schemaName":"testSchema",
"tableName":"TEST",
"securityGroup":"DDSMonitorGroup",
"accessLevelVo": {
"accessLevelName":"monitorAccessLevel"
}
}
]
}
```

Delete Table Level Security

This end point deletes table level security.

HTTP Operation: DELETE

Path: **/resources/admin/security/table**

Sample Input

```
{
"schemaName":"testSchema",
"tableName":"TEST",
"securityGroup":"DDSMonitorGroup",
"accessLevelVo": {
"accessLevelName":"testAccessLevel"
}
}
```

Delete Table Level Security by Id

This end point deletes table level security by id.

HTTP Operation: DELETE

Path: **/resources/admin/security/table/{id}**

Delete Table Level Securities by Type

This end point deletes table level securities.

HTTP Operation: DELETE

Path:
/resources/admin/security/table/bulk/{schemaName}?keys=<keys>&keyType=<key Type>

Valid KeyType values: table, securityGroup, accessLevel

If keyType is table, then a list of comma separated table names needs to be provided in the keys query parameter.

If keyType is securityGroup, then a list of comma separated security groups needs to be provided in the keys query parameter.

If keyType is accessLevel, then a list of comma separated access levels need to be provided in the keys query parameter.

Create Column Level Security

This end point creates column level security.

HTTP Operation: PUT

Path: **/resources/admin/security/column**

Valid Column Permission Type values: **ALLOW, DONT_ALLOW, MASK**

Sample Input

```
{
"columnName":"testColumn",
"columnPermissionType":"ALLOW",
"securityGroup":"DDSOperatorGroup",
"tableLevelSecurityVo": {
"schemaName":"testSchema",
"tableName":"TEST",
"securityGroup":"DDSOperatorGroup",
"accessLevelVo": {
"accessLevelName":"testAccessLevel"
}
}
}
```

Update Column Level Security

This end point updates column level security.

HTTP Operation: POST

Path: **/resources/admin/security/column**

Valid Column Permission Type values: **ALLOW, DONT_ALLOW, MASK**

Sample Input

```
{
"columnName":"testColumn",
"columnPermissionType":"MASK",
"securityGroup":"DDSOperatorGroup",
"tableLevelSecurityVo": {
"schemaName":"testSchema",
"tableName":"TEST",
"securityGroup":"DDSOperatorGroup",
"accessLevelVo": {
"accessLevelName":"testAccessLevel"
}
}
}
```

Delete Column Level Security

This end point deletes column level security.

HTTP Operation: DELETE

Path: **/resources/admin/security/column**

Sample Input

```
{
"columnName":"testColumn",
"tableLevelSecurityVo": {
"schemaName":"testSchema",
"tableName":"TEST",
"securityGroup":"DDSOperatorGroup",
"accessLevelVo": {
"accessLevelName":"testAccessLevel"
}
}
}
```

Create Data Security Configuration

This end point creates data security configuration.

HTTP Operation: PUT

Path: **/resources/admin/security/config**

Valid values for security type: **WHITELIST, BLACKLIST**

WHITELIST allows access only if security is setup (Table level security)

BLACKLIST denies access to entities (such as column level security) if it is set up and allows others.

Sample Input

```
{
"schemaName":"testSchema",
"enableSecurity":"true",
"tableLevelSecurityType":"WHITELIST",
"columnLevelSecurityType":"BLACKLIST"
}
```

Update Data Security Configuration

This end point updates the data security configuration.

HTTP Operation: POST

Path: **/resources/admin/security/config**

Valid values for security type: **WHITELIST, BLACKLIST**

WHITELIST allows access only if security is setup (such as Table level security)

BLACKLIST denies access to entities (such as column level security) if it is set up and allows others.

Sample Input

```
{
"schemaName":"testSchema",
"enableSecurity":"false",
"tableLevelSecurityType":"WHITELIST",
"columnLevelSecurityType":"BLACKLIST"
}
```

Delete Data Security Configuration

This end point deletes the data security configuration for a schema.

HTTP Operation: DELETE

Path: **/resources/admin/security/config/{schemaName}**

Create Security Group

This end point creates a security group.

HTTP Operation: PUT

Path: **/resources/admin/security/groups**

Sample Input

```
{
"groupName":"DDSAdminGroup",
}
```

Delete Security Group

This end point deletes a security group.

HTTP Operation: DELETE

Path: **/resources/admin/security/groups/{groupName}**

Create Row Level Security

This end point creates row level security.

Row level security can be enforced if there are user and group columns in the table.

HTTP Operation: PUT

Path: **/resources/admin/security/row**

Sample Input

```
{
"enableRowAccesss":"true",
"userColumnName":"USER",
"groupColumnName":"GROUP",
"tableLevelSecurityVo": {
"schemaName":"testSchema",
"tableName":"TEST",
"securityGroup":"DDSOperatorGroup",
"accessLevelVo": {
"accessLevelName":"testAccessLevel"
}
}
}
```

Update Row Level Security

This end point updates row level security for a table.

HTTP Operation: POST

Path: **/resources/admin/security/row**

Sample Input

```
{
"enableRowAccesss":"false",
"tableLevelSecurityVo": {
"schemaName":"testSchema",
"tableName":"TEST",
"securityGroup":"DDSOperatorGroup",
"accessLevelVo": {
"accessLevelName":"testAccessLevel"
}
}
}
```

Delete Row Level Security

This end point deletes row level security.

HTTP Operation: DELETE

Path:
/resources/admin/security/row/{schemaName}/{tableName}/{securityGroup}/{accessLevelName}

Create Default Security Setup

This end point creates default security setup for all tables in a schema. It creates the following.

Security Groups - DdsAdminGroup, DdsOperatorGroup, DdsMonitorGroup

Access Levels - DdsAdminAccessLevel, DdsOperatorAccessLevel, DdsMonitorAccessLevel

DdsAdminAccessLevel has permissions to all operations.

DDSOperatorAccessLevel has permissions to all operations except DataSecuritySetupPermission

DDSMonitorAccessLevel has permissions to read only operations

HTTP Operation: PUT

Path: **/resources/admin/security/setup/{schemaName}**

7

User Interface

The DDS UI is divided into two sections; Admin tab, and Designer tab. The Admin tab lets admin users control access and perform security operations. The Designer tab lets admin, operators and monitor users perform authorized functions.

This chapter explains the main UI functionality available to the user.

Admin Tab Guide

This tab has all the functions for configuring security related permissions and user access. Only the admin user has access to this tab. The admin can enable read, write and modify access permissions and also limit functionality of a user.

The Admin Tab has three main sections:

- Manage Access Levels
- Manage Security Groups
- Manage Security permissions

Initial Permissions Setup

In order to access the data on tables being viewed in the Designer Tab, first the Table level securities have to be setup in the Admin tab of the DDS Application. The Admin can select the desired database schema from the associated database schema dropdown.

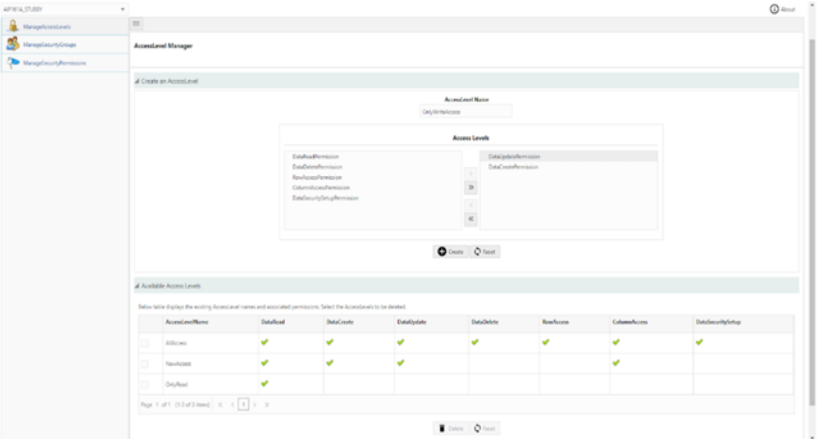
Access to this tab is only allowed to the Admin User.

Manage Access Levels

This tab allows the creation and deletion of Access Levels for data and functionality. These can be assigned to groups for particular tables in a schema.

To create an access level

1. Input a name in the Name text box.
2. Select the necessary access permissions.
3. Click **Create**.



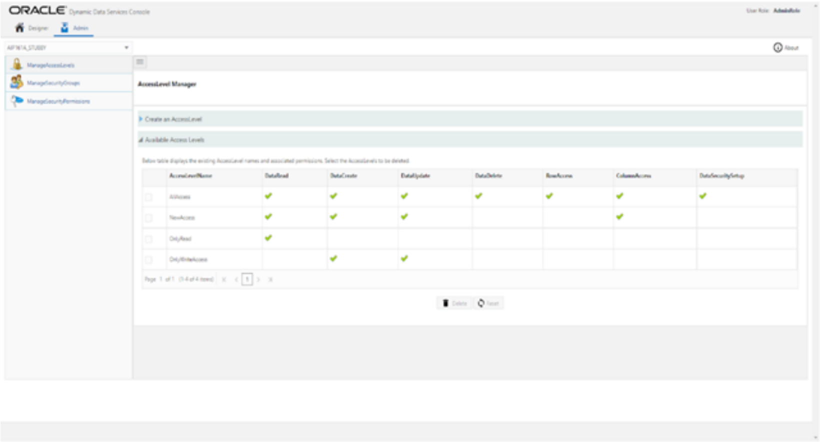
Below table displays the existing AccessLevel names and associated permissions. Select the AccessLevels to be deleted.

	AccessLevelName	DataRead	DataCreate	DataUpdate	DataDelete	RowAccess	ColumnAccess	DataSecuritySetup
□	AllAccess	✓	✓	✓	✓	✓	✓	✓
□	NewAccess	✓	✓	✓			✓	
□	OnlyRead	✓						

Page 1 of 1 (1-3 of 3 items)

To delete an access level

1. Select the Access Level to be deleted from the table which displays the available access levels.
2. Click **Delete**.



Below table displays the existing AccessLevel names and associated permissions. Select the AccessLevels to be deleted.

	AccessLevelName	DataRead	DataCreate	DataUpdate	DataDelete	RowAccess	ColumnAccess	DataSecuritySetup
□	AllAccess	✓	✓	✓	✓	✓	✓	✓
□	NewAccess	✓	✓	✓			✓	
□	OnlyRead	✓						
□	OnlyWriteAccess		✓	✓				

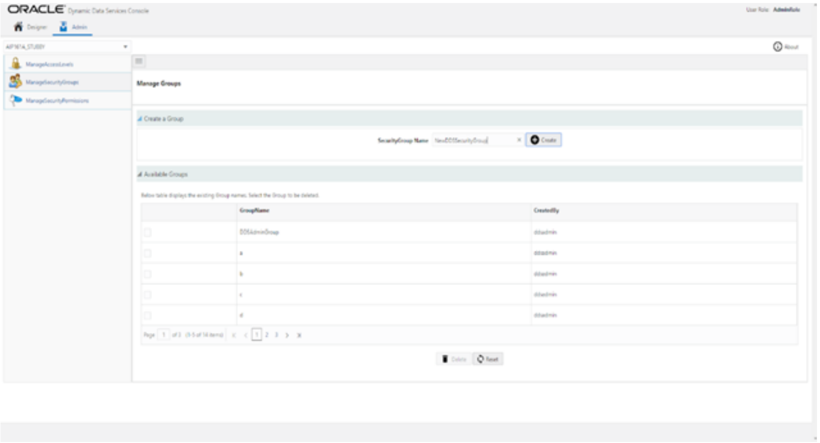
Page 1 of 1 (1-4 of 4 items)

Manage Security Groups

This tab includes functionality for the creation and deletion of Security Groups. Security Groups are groups of users that have a certain level of data access. These, along with one or more access levels, can be assigned to a table to limit access to data and functionality in the Designer tab.

To create a Security Group

1. Input a name in the Name text box.
2. Click **Create**.



SecurityGroup Name: NewDDSSecurityGroup

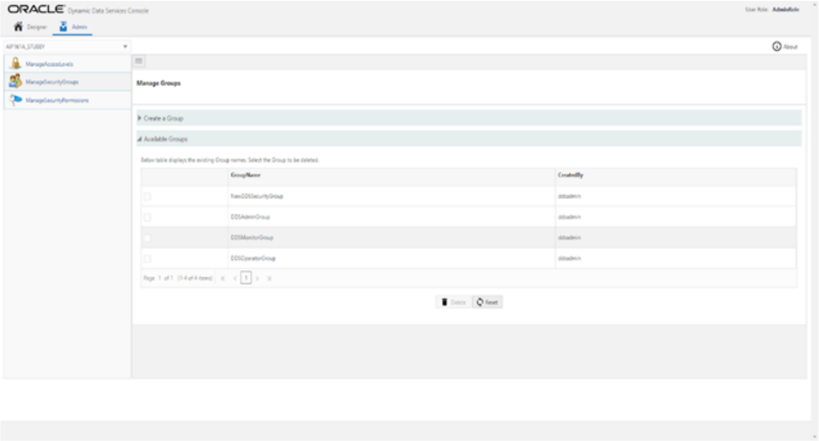
Below table displays the existing Group names. Select the Group to be deleted.

	GroupName	CreatedBy
□	DDSAdminGroup	ddsadmin
□	a	ddsadmin
□	b	ddsadmin
□	c	ddsadmin
□	d	ddsadmin

Page 1 of 3 (1-5 of 14 items) 1 2 3

To delete a Security Group

1. Select the Security Group to be deleted from the table that displays the available Security Groups.
2. Click **Delete**.



Below table displays the existing Group names. Select the Group to be deleted.

	GroupName	CreatedBy
□	NewDDSSecurityGroup	ddsadmin
□	DDSAdminGroup	ddsadmin
□	DDSMonitorGroup	ddsadmin
□	DDSOperatorGroup	ddsadmin

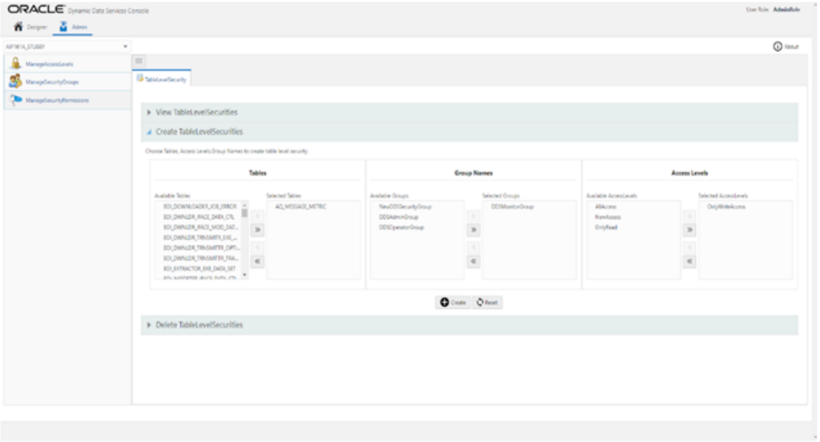
Page 1 of 1 (1-4 of 4 items) 1

Manage Security Permissions

This tab allows the user to create and delete Security Permissions. Security Permissions are a combination of one or more Access levels in a Security Group mapped to a table to restrict data access and also limit functionality, like removing the ability to create, modify or delete data.

To create a Security Permission for a table

1. In the Create TableLevelSecurities collapsible pane, select the desired table.
2. Then select the required security group.
3. Finally select the required access level(s).
4. Click **Create**.



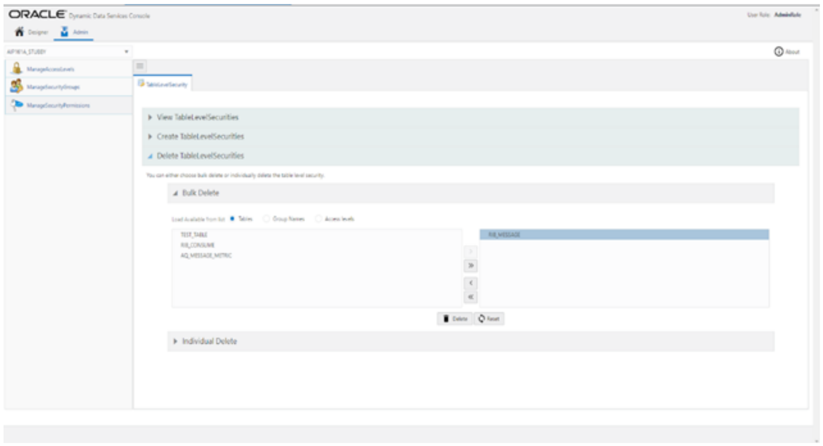
To delete Security Permission(s)

Functionality is provided to either perform bulk delete or individual deletion of security.

1. To bulk delete security permissions:

   a. Select the required table name(s) or security group(s) or access level(s).

   b. Click **Delete**.



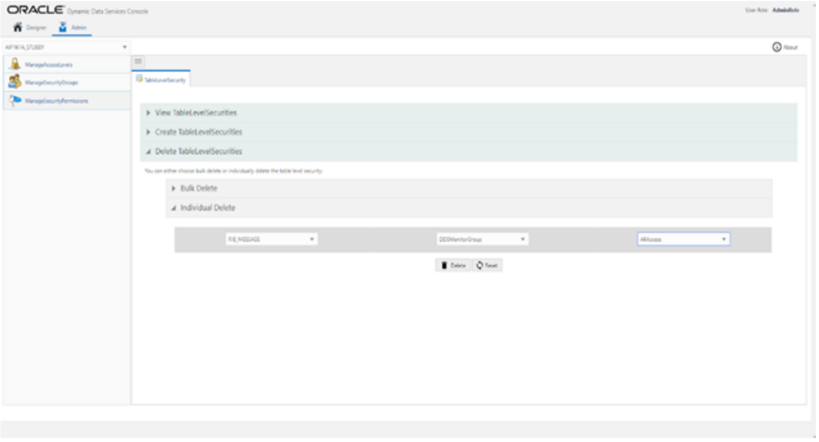
2. To individually delete security permissions:

   a. Select the required table name.

   b. Select the particular security group associated.

   c. Select the associated access level.

   d. Click **Delete**.


ORACLE Dynamic Data Services Console
User Role: AdminRole
Designer
Admin
About
ManageAccessLevels
ManageSecurityGroups
ManageSecurityPermissions
TableLevelSecurity
View TableLevelSecurities
Create TableLevelSecurities
Delete TableLevelSecurities
Bulk Delete
Individual Delete
Delete
Reset

AIP161A_STUBBY

You can either choose bulk delete or individually delete the table level security.

RIB_MESSAGE · DDSMonitorGroup · AllAccess

Designer Tab Guide

This tab contains all the CRUD operations to be performed by user on tables in the database schema. The user can select the desired database schema available in the database schema dropdown. It has two sections:

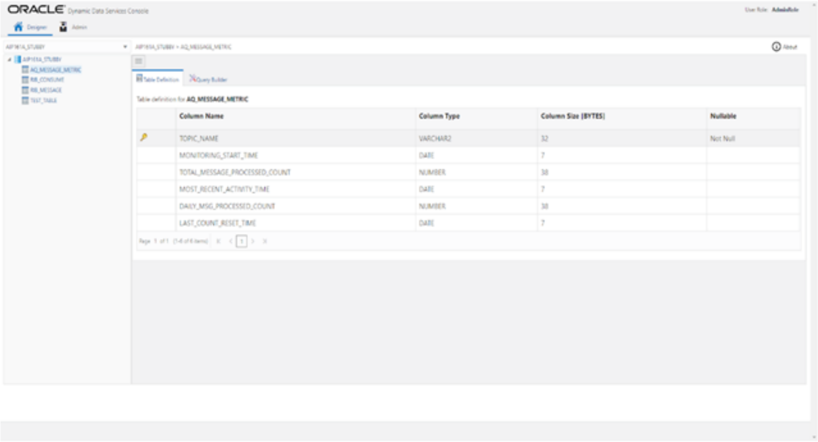
- Table Definition
- Query Builder

Make sure the user has sufficient permissions before performing any action in the designer tab.

Table Definition

This tab allows the user to see the basic definition of the Database table in a simplified format presented in a tabular form.

To view a table's definition, select the required table from the list of tables from the left pane of the screen. Clicking on the table name will load the definition on the display screen under the Table Definition tab.



AIP161A_STUBBY > AQ_MESSAGE_METRIC

Table definition for **AQ_MESSAGE_METRIC**

	Column Name	Column Type	Column Size (BYTES)	Nullable
🔑	TOPIC_NAME	VARCHAR2	32	Not Null
	MONITORING_START_TIME	DATE	7	
	TOTAL_MESSAGE_PROCESSED_COUNT	NUMBER	38	
	MOST_RECENT_ACTIVITY_TIME	DATE	7	
	DAILY_MSG_PROCESSED_COUNT	NUMBER	38	
	LAST_COUNT_RESET_TIME	DATE	7	

Page 1 of 1 (1-6 of 6 items)

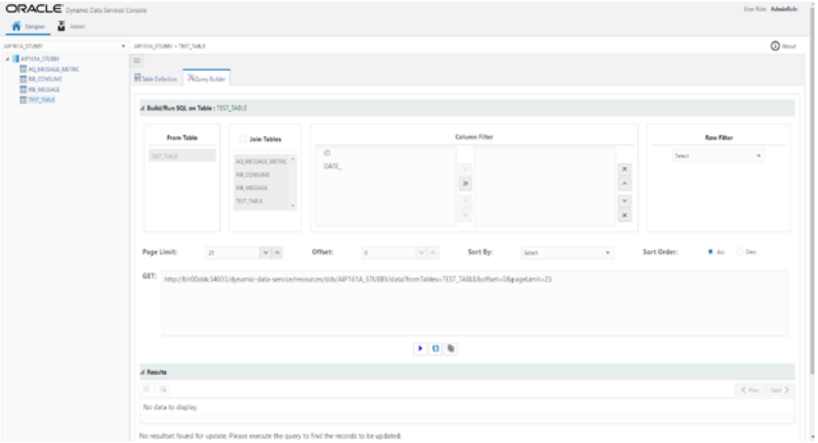
Query Builder

This tab holds the functionality for data manipulation. Functions include Querying records to creation, modification and deletion of records.

Data Selection

To Query records from a table:

1. Select the table from the list of tables on the left pane of the screen.



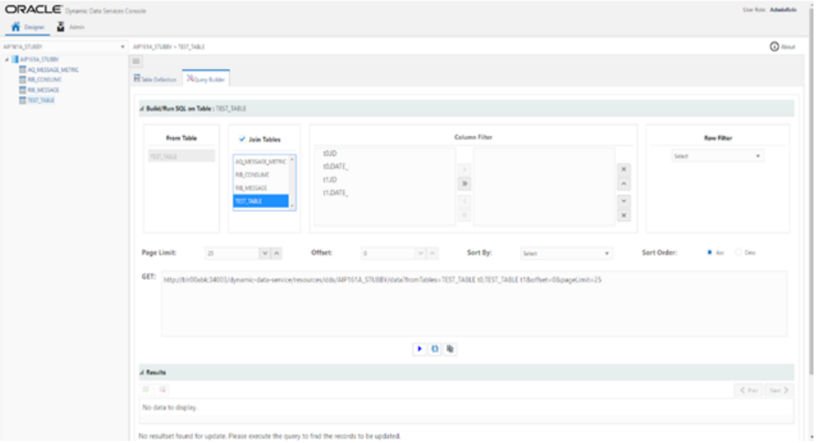
Page Limit: 25 Offset: 0 Sort By: Select Sort Order: ● Asc ○ Desc

GET: http://blr00abk:34003/dynamic-data-service/resources/dds/AIP161A_STUBBY/data?fromTables=TEST_TABLE&offset=0&pageLimit=25

No data to display.

No resultset found for update. Please execute the query to find the records to be updated.

2. Enable join if the join operation is necessary.
3. Select the table to which the join is to be done, select the same table as selected in (1) to do a self-join.



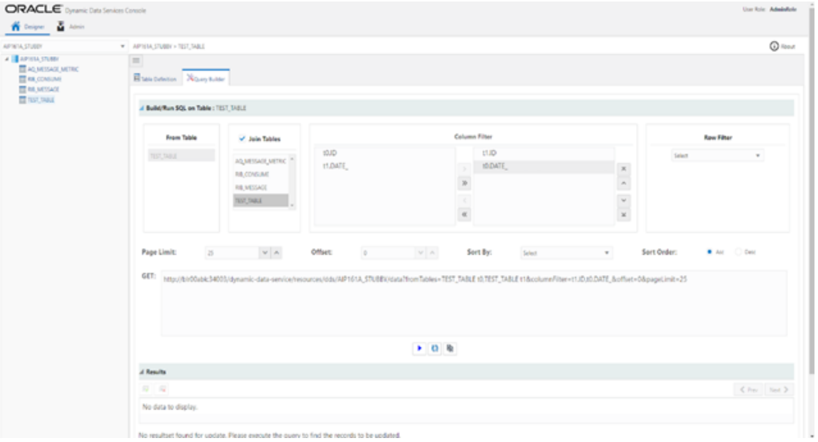
Page Limit: 25 Offset: 0 Sort By: Select Sort Order: ● Asc ○ Desc

GET: http://blr00abk:34003/dynamic-data-service/resources/dds/AIP161A_STUBBY/data?fromTables=TEST_TABLE t0,TEST_TABLE t1&offset=0&pageLimit=25

No data to display.

No resultset found for update. Please execute the query to find the records to be updated.

4. Select the columns which are to be displayed in the column filter. Only the column names on the right side of the box will be displayed. If all columns are to be displayed, do not move any columns to the right box.



Page Limit: 25 Offset: 0 Sort By: Select Sort Order: ● Asc ○ Desc

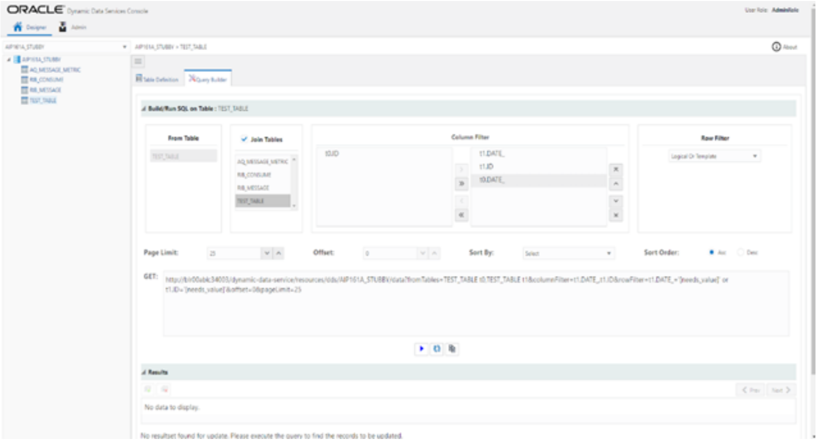
GET: http://blr00abk:34003/dynamic-data-service/resources/dds/AIP161A_STUBBY/data?fromTables=TEST_TABLE t0,TEST_TABLE t1&columnFilter=t1.ID,t0.DATE_&offset=0&pageLimit=25

No data to display.

No resultset found for update. Please execute the query to find the records to be updated.

5. Select the row filter.

> **Note:** The row filter is applied only to the first two columns in the table, so reorder the columns such that the ones that have to be used as row filter are in the two positions.



Column Filter: t1.DATE_, t1.ID, t0.DATE_

Page Limit: 25 Offset: 0 Sort By: Select Sort Order: ● Asc ○ Desc

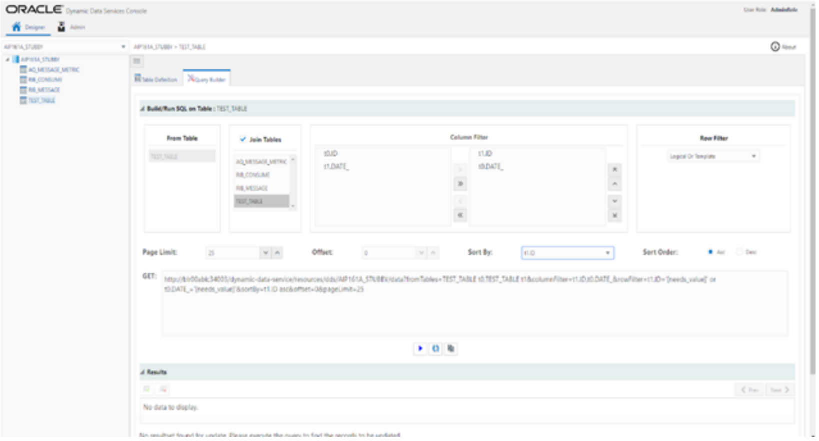
GET: http://bir00abk:34003/dynamic-data-service/resources/dds/AIP161A_STUBBY/data?fromTables=TEST_TABLE t0,TEST_TABLE t1&columnFilter=t1.DATE_,t1.ID&rowFilter=t1.DATE_='{needs_value}' or t1.ID='{needs_value}'&offset=0&pageLimit=25

No data to display.

No resultset found for update. Please execute the query to find the records to be updated.

6. Set the page limit, this is the number of records that are to be displayed on one page, the remaining records will be paginated and displayed upon request.

7. The Sort by drop down list works if there are columns selected for a column filter. Select the desired column, and then select the sort order, ascending or descending.



Column Filter: t1.ID, t0.DATE_

Page Limit: 25 Offset: 0 Sort By: t1.ID Sort Order: ● Asc ○ Desc

GET: http://bir00abk:34003/dynamic-data-service/resources/dds/AIP161A_STUBBY/data?fromTables=TEST_TABLE t0,TEST_TABLE t1&columnFilter=t1.ID,t0.DATE_&rowFilter=t1.ID='{needs_value}' or t0.DATE_='{needs_value}'&sortBy=t1.ID asc&offset=0&pageLimit=25

No data to display.

8. Click on the run button ▶ to get the Query results using the settings configured earlier.

9. The reset button 🔄 sets the settings back to default.

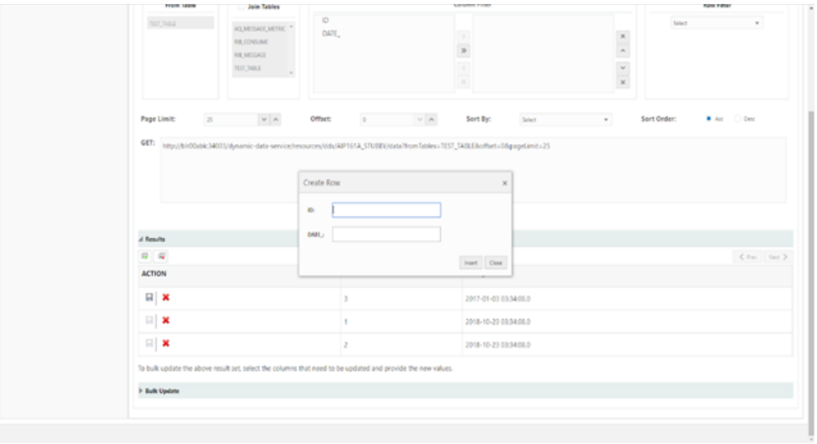
10. The copy query button ⧉ is used to copy the GET query generated in the "GET" box. Click on the button and the link is copied. Paste the link in a browser and press enter/return to execute the query.

Data Insertion

To insert the data in the table:

1. The query results from the GET call are displayed here in an editable tabulated format.

2. To insert a record click on the insert record button .
3. In the pop-up, enter the data. Make sure to enter all values for not null columns.
4. Click **Insert**.
5. The record will be successfully inserted after validation.



GET: http://blr00abk:34003/dynamic-data-service/resources/dds/AIP161A_STUBBY/data?fromTables=TEST_TABLE&offset=0&pageLimit=25

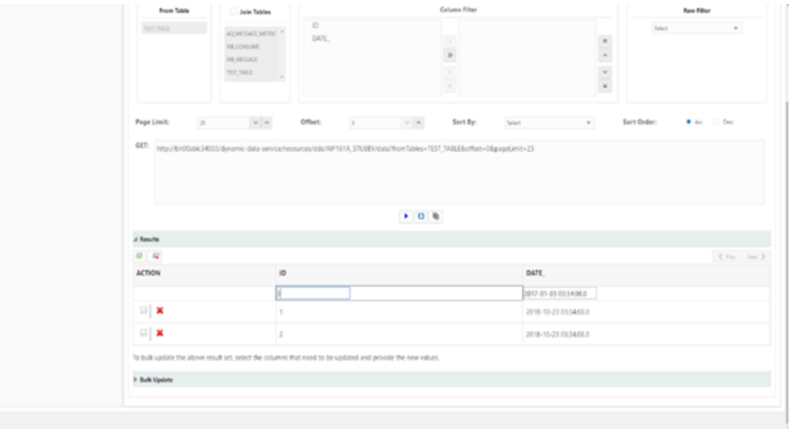
ACTION		
	3	2017-01-03 03:34:08.0
	1	2018-10-23 03:34:08.0
	2	2018-10-23 03:34:08.0

To bulk update the above result set, select the columns that need to be updated and provide the new values.

Data Modification

To modify existing data, select the data from desired table.

1. Double click on the record to be modified
2. Edit the contents
3. Press escape on the keyboard to exit edit mode and click on the save button to save the changes.
4. Message - Record updated successfully will be displayed after validation



GET: http://blr00abk:34003/dynamic-data-service/resources/dds/AIP161A_STUBBY/data?fromTables=TEST_TABLE&offset=0&pageLimit=25

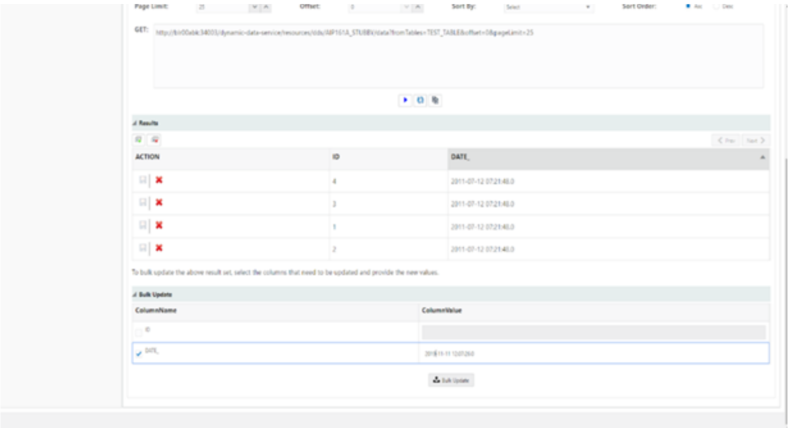
ACTION	ID	DATE_
	3	2017-01-03 03:34:08.0
	1	2018-10-23 03:34:08.0
	2	2018-10-23 03:34:08.0

To bulk update the above result set, select the columns that need to be updated and provide the new values.

Bulk Updations of Data

The option is available to update bulk records on selected data. To bulk update column(s):

1. In the bulk update collapsible pane one or more columns for all records in the queried table can be updated with a single value, if the column is not unique.
2. Select the checkbox of the required column to enable edit mode.
3. Enter the data as necessary.



Page Limit: 25 Offset: 0 Sort By: Select Sort Order: ● Asc ○ Desc

GET: http://blr00abk:34003/dynamic-data-service/resources/dds/AIP161A_STUBBY/data?fromTables=TEST_TABLE&offset=0&pageLimit=25

Results

ACTION	ID	DATE_
✖	4	2011-07-12 07:21:48.0
✖	3	2011-07-12 07:21:48.0
✖	1	2011-07-12 07:21:48.0
✖	2	2011-07-12 07:21:48.0

To bulk update the above result set, select the columns that need to be updated and provide the new values.

Bulk Update

ColumnName	ColumnValue
□ ID	
✓ DATE_	2016-11-11 12:07:26.0

4. Click the Bulk Update option Bulk Update to update the selected columns for all the records in the table.

5. Records will be updated after successful validation of data.

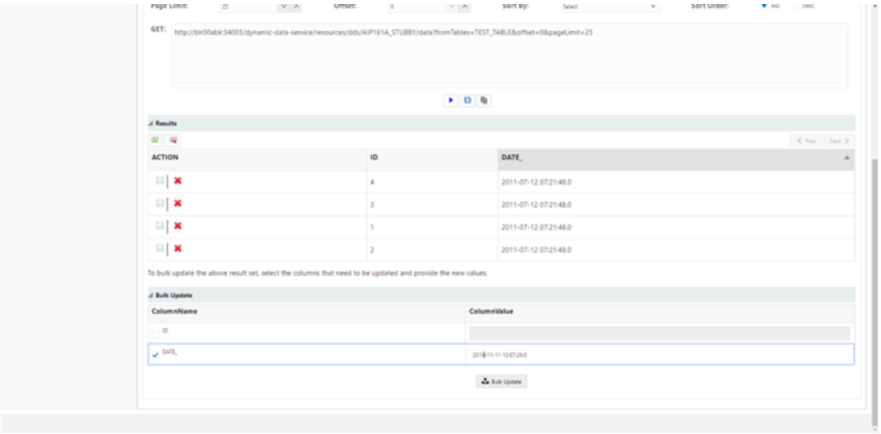
Data Deletion

This option is available to perform individual and bulk deletions of records.

Individual Delete - To delete a single record, click the delete button ✖ on the corresponding record.

Bulk Delete -To delete all records, click the delete all button ☒ and confirm once the confirmation dialog pops up.

The number of records deleted message will be displayed upon successful deletion of records.



Page Limit: 25 Offset: 0 Sort By: Select Sort Order: ● Asc ○ Desc

GET: http://blr00abk:34003/dynamic-data-service/resources/dds/AIP161A_STUBBY/data?fromTables=TEST_TABLE&offset=0&pageLimit=25

Results

ACTION	ID	DATE_
✖	4	2011-07-12 07:21:48.0
✖	3	2011-07-12 07:21:48.0
✖	1	2011-07-12 07:21:48.0
✖	2	2011-07-12 07:21:48.0

To bulk update the above result set, select the columns that need to be updated and provide the new values.

Bulk Update

ColumnName	ColumnValue
□ ID	
✓ DATE_	2016-11-11 12:07:26.0

8

Advanced Backend Features

The DDS backend service supports many SQL query commands. Some of these commands can be added to a query using the components available in the DDS UI, while others must be added by manually typing them into the query itself. Once that is done, the query can then be run through the DDS UI, or a browser, or a cURL commands to get the results.

Follow the instructions in the "Query Builder" section within the "Designer Tab Guide" section of the "User Interface" chapter for instructions on setting up a basic query in the DDS UI. Once those steps have been followed, a query is generated in the **GET** box. The query can be edited to add the following statements individually or in a combination as required.

> **Note:** Please maintain the formatting of the GET request, making sure all the special characters (like the separating ampersand &) are in place, a lack of which may cause unexpected errors.

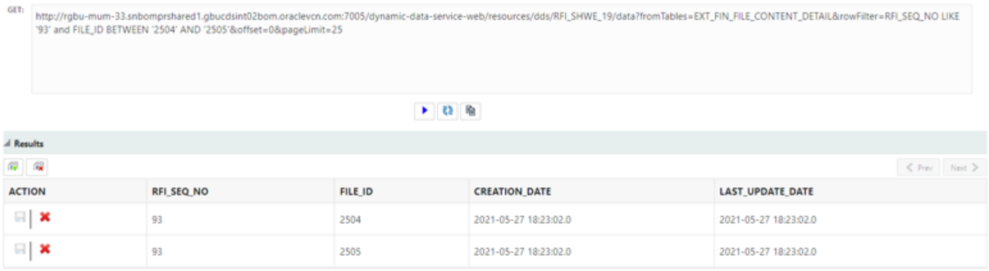
LIKE Statement

The LIKE statement can be added separately to the query request to view only the results that are similar to the LIKE value. A simple GET request and result with LIKE statement can be like the following:

```
http://<dds_host>:<port>/dynamic-data-service-web/resources/dds/<selected_
schema>/data?fromTables=<selected_table>&rowFilter=<COULMN_NAME> LIKE '<data_to_
search>'&offset=0&pageLimit=25
```

A `curl` equivalent of the above example:

```
curl "http://<dds_host>:<port>/dynamic-data-service-web/resources/dds/<selected_
schema>/data?fromTables=<selected_table>&rowFilter=<COULMN_NAME>%20LIKE%20'<data_
to_search>'&offset=0&pageLimit=25" -u <dds_user>:<dds_pass> -o filename.txt
```



http://rgbu-mum-33.snbomprshared1.gbucdsint02bom.oraclevcn.com:7005/dynamic-data-service-web/resources/dds/RFI_SHWE_19/data?fromTables=EXT_FIN_FILE_CONTENT_DETAIL&rowFilter=RFI_SEQ_NO LIKE '93' and FILE_ID BETWEEN '2504' AND '2505'&offset=0&pageLimit=25

ACTION	RFI_SEQ_NO	FILE_ID	CREATION_DATE	LAST_UPDATE_DATE
✖	93	2504	2021-05-27 18:23:02.0	2021-05-27 18:23:02.0
✖	93	2505	2021-05-27 18:23:02.0	2021-05-27 18:23:02.0

IN Statement

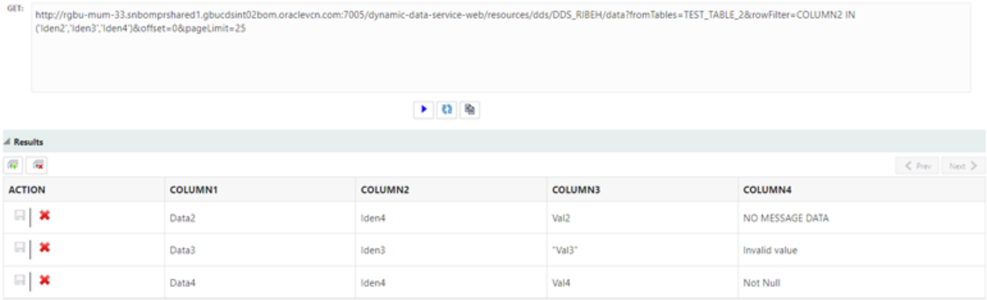
The IN statement can be added separately to the query request to only view results containing one of a set of possible values. A simple GET request and result with IN statement can be like the following:

```
http://<dds_host>:<port>/dynamic-data-service-web/resources/dds/<selected_
schema>/data?fromTables=<selected_table>&rowFilter=<COULMN_NAME> LIKE '<data_to_
search>'&offset=0&pageLimit=25
```

A `curl` equivalent of the above example:

```
curl "http://<dds_host>:<port>/dynamic-data-service-web/resources/dds/<selected_
schema>/data?fromTables=<selected_table>&rowFilter=<COULMN_
NAME>%20IN%20('<value1>','<value2>','<value3>', …)&offset=0&pageLimit=25" -u <dds_
user>:<dds_pass> -o filename.txt
```

Note: The IN Statement supports searching using comma-separated values in parentheses. Sub-queries are **NOT** supported by the DDS design.



GET: http://rgbu-mum-33.snbomprshared1.gbucdsint02bom.oraclevcn.com:7005/dynamic-data-service-web/resources/dds/DDS_RIBEH/data?fromTables=TEST_TABLE_2&rowFilter=COLUMN2 IN ('Iden2','Iden3','Iden4')&offset=0&pageLimit=25

Results

ACTION	COLUMN1	COLUMN2	COLUMN3	COLUMN4
✖	Data2	Iden4	Val2	NO MESSAGE DATA
✖	Data3	Iden3	"Val3"	Invalid value
✖	Data4	Iden4	Val4	Not Null

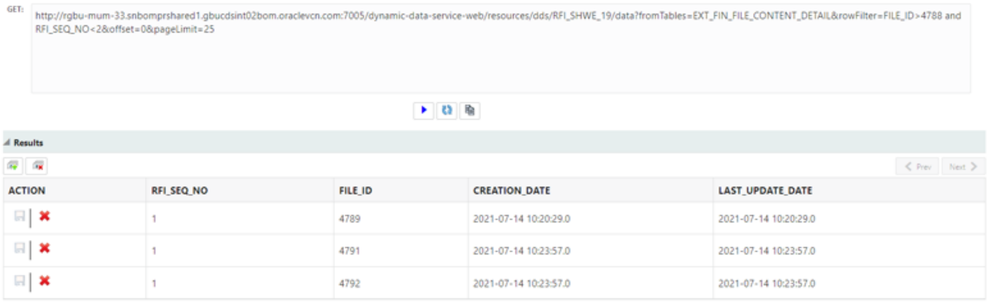
Comparative Operators

Comparative operators (like < and >) can be used to filter data for a particular range. A GET request and result with these operators can be like the following:

```
http://<dds_host>:<port>/dynamic-data-service-web/resources/dds/<selected_
schema>/data?fromTables=<selected_table>&rowFilter=COULMN_NAME<'data_to_
search'&offset=0&pageLimit=25
```

A `curl` equivalent of the above example:

```
curl "http://<dds_host>:<port>/dynamic-data-service-web/resources/dds/<selected_
schema>/data?fromTables=<selected_table>&rowFilter=COULMN_NAME<'data_to_
search'&offset=0&pageLimit=25" -u <dds_user>:<dds_pass> -o filename.txt
```



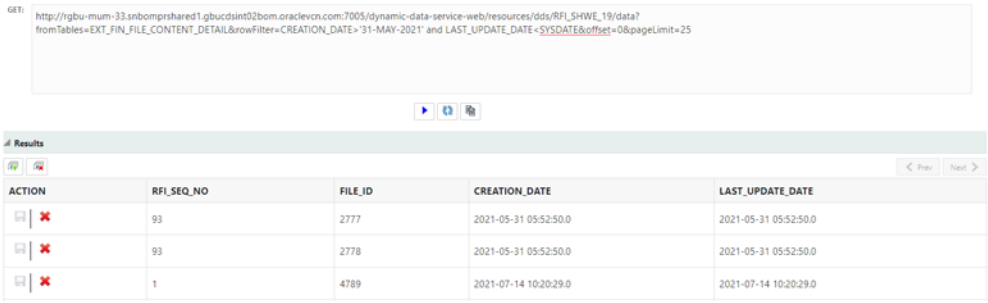
GET:

```
http://rgbu-mum-33.snbomprshared1.gbucdsint02bom.oraclevcn.com:7005/dynamic-data-service-web/resources/dds/RFI_SHWE_19/data?fromTables=EXT_FIN_FILE_CONTENT_DETAIL&rowFilter=FILE_ID>4788 and RFI_SEQ_NO<2&offset=0&pageLimit=25
```

ACTION	RFI_SEQ_NO	FILE_ID	CREATION_DATE	LAST_UPDATE_DATE
✖	1	4789	2021-07-14 10:20:29.0	2021-07-14 10:20:29.0
✖	1	4791	2021-07-14 10:23:57.0	2021-07-14 10:23:57.0
✖	1	4792	2021-07-14 10:23:57.0	2021-07-14 10:23:57.0

Filtering DATE Column

Date columns can be filtered using the `'DD-MMM-YYYY'` date format. Additionally, `SYSDATE±N` can also be used to query date columns.



GET:

```
http://rgbu-mum-33.snbomprshared1.gbucdsint02bom.oraclevcn.com:7005/dynamic-data-service-web/resources/dds/RFI_SHWE_19/data?fromTables=EXT_FIN_FILE_CONTENT_DETAIL&rowFilter=CREATION_DATE>'31-MAY-2021' and LAST_UPDATE_DATE<SYSDATE&offset=0&pageLimit=25
```

ACTION	RFI_SEQ_NO	FILE_ID	CREATION_DATE	LAST_UPDATE_DATE
✖	93	2777	2021-05-31 05:52:50.0	2021-05-31 05:52:50.0
✖	93	2778	2021-05-31 05:52:50.0	2021-05-31 05:52:50.0
✖	1	4789	2021-07-14 10:20:29.0	2021-07-14 10:20:29.0

Example with the **SYSDATE** keyword:

```
http://<dds_host>:<port>/dynamic-data-service-web/resources/dds/<selected_
schema>/data?fromTables=<selected_table>&rowFilter=CREATION_
DATE<SYSDATE-1&offset=0&pageLimit=25
```

A `curl` equivalent of the above example:

```
curl "http://<dds_host>:<port>/dynamic-data-service-web/resources/dds/<selected_
schema>/data?fromTables=<selected_table>&rowFilter=CREATION_
DATE<SYSDATE-1&offset=0&pageLimit=25" -u <dds_user>:<dds_pass> -o file-name.txt
```

Example with **'DD-MMM-YYYY'** date format:

```
http://<dds_host>:<port>/dynamic-data-service-web/resources/dds/<selected_
schema>/data?fromTables=<selected_table>&rowFilter=CREATION_
DATE>'01-JAN-1976'&offset=0&pageLimit=25
```

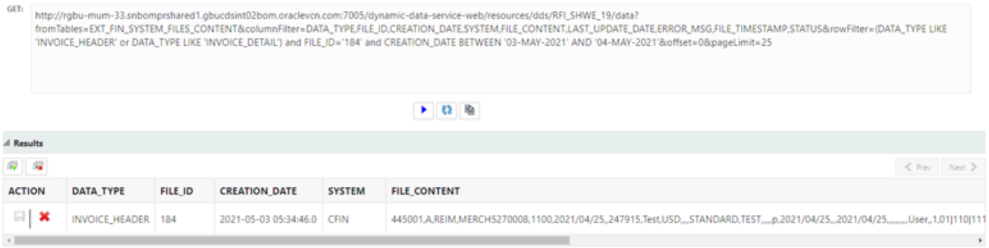
A `curl` equivalent of the above example:

```
curl "http://<dds_host>:<port>/dynamic-data-service-web/resources/dds/<selected_
schema>/data?fromTables=<selected_table>&rowFilter=CREATION_
DATE>'01-JAN-1976'&offset=0&pageLimit=25" -u <dds_user>:<dds_pass> -o
file-name.txt
```

Combinations of OR, AND & BETWEEN Statements

The conditional statements OR, AND & BETWEEN can be used in combination with each other using parentheses to further filter results based on required conditions. The **Filter DDS** row in the UI can be used to add a single conditional statement, upon which more conditions can be added manually by typing them in the GET box. A simple GET request with result can look like this:

```
http://<dds_host>:<port>/dynamic-data-service-web/resources/dds/<selected_
schema>/data?fromTables=<selected_table>&rowFilter=(DATA_TYPE LIKE 'INVOICE_
HEADER' or DATA_TYPE LIKE 'INVOICE_DETAIL') and FILE_ID='184' and CREATION_DATE
BETWEEN '03-MAY-2021' AND '04-MAY-2021'&offset=0&pageLimit=25
```



GET: http://rgbu-mum-33.snbomprshared1.gbucdsint02bom.oraclevcn.com:7005/dynamic-data-service-web/resources/dds/RFI_SHWE_19/data?fromTables=EXT_FIN_SYSTEM_FILES_CONTENT&columnFilter=DATA_TYPE,FILE_ID,CREATION_DATE,SYSTEM,FILE_CONTENT,LAST_UPDATE_DATE,ERROR_MSG,FILE_TIMESTAMP,STATUS&rowFilter=(DATA_TYPE LIKE 'INVOICE_HEADER' or DATA_TYPE LIKE 'INVOICE_DETAIL') and FILE_ID='184' and CREATION_DATE BETWEEN '03-MAY-2021' AND '04-MAY-2021'&offset=0&pageLimit=25

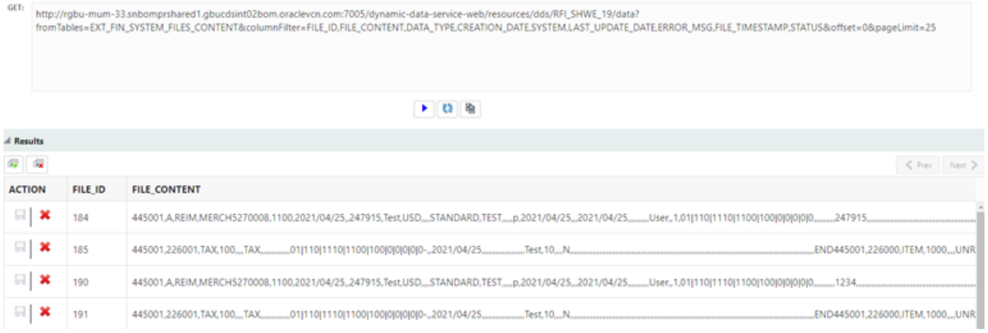
Results

ACTION	DATA_TYPE	FILE_ID	CREATION_DATE	SYSTEM	FILE_CONTENT
✖	INVOICE_HEADER	184	2021-05-03 05:34:46.0	CFIN	445001,A,REIM,MERCH5270008,1100,2021/04/25,,247915,Test,USD,,,STANDARD,TEST,,,,p,2021/04/25,,2021/04/25,,,,,,,,User,,1,01|110|111

A `curl` equivalent of the above example:

```
curl "http://<dds_host>:<port>/dynamic-data-service-web/resources/dds/<selected_
schema>/data?fromTables=<selected_table>&rowFilter=(DATA_TYPE%20LIKE%20'INVOICE_
HEADER'%20or%20DATA_TYPE%20LIKE%20'INVOICE_DETAIL')%20and%20FILE_
ID='184'%20and%20CREATION_
DATE%20BETWEEN%20'03-MAY-2021'%20AND%20'04-MAY-2021'&offset=0&pageLimit=25" -u
<dds_user>:<dds_pass> -o filename.txt
```

Viewing Clob Data



GET: http://rgbu-mum-33.snbomprshared1.gbucdsint02bom.oraclevcn.com:7005/dynamic-data-service-web/resources/dds/RFI_SHWE_19/data?fromTables=EXT_FIN_SYSTEM_FILES_CONTENT&columnFilter=FILE_ID,FILE_CONTENT,DATA_TYPE,CREATION_DATE,SYSTEM,LAST_UPDATE_DATE,ERROR_MSG,FILE_TIMESTAMP,STATUS&offset=0&pageLimit=25

Results

ACTION	FILE_ID	FILE_CONTENT
✖	184	445001,A,REIM,MERCH5270008,1100,2021/04/25,,247915,Test,USD,,,STANDARD,TEST,,,,p,2021/04/25,,2021/04/25,,,,,,,,User,,1,01|110|1110|1100|100|0|0|0|0|0,,,,,,,,247915,,
✖	185	445001,226001,TAX,100,,,TAX,,,,,,,,,,,01|110|1110|1100|100|0|0|0|0|0-,,2021/04/25,,,,,,,,,,,,,,,,,Test,10,,,N,,END445001,226000,ITEM,1000,,,UNR
✖	190	445001,A,REIM,MERCH5270008,1100,2021/04/25,,247915,Test,USD,,,STANDARD,TEST,,,,p,2021/04/25,,2021/04/25,,,,,,,,User,,1,01|110|1110|1100|100|0|0|0|0|0,,,,,,,,1234,,
✖	191	445001,226001,TAX,100,,,TAX,,,,,,,,,,,01|110|1110|1100|100|0|0|0|0|0-,,2021/04/25,,,,,,,,,,,,,,,,,Test,10,,,N,,END445001,226000,ITEM,1000,,,UNR

Sometimes the data in a table field can of the type CLOB and have large data in it. DDS supports these fields and can display the data in the UI. However, these fields can also be viewed through a cURL command, and saving the output to a file.

> **Note:** Ensure that the required DDS application username/password is supplied.

```
curl "http://<server_host>:<server_
port>/dynamic-data-service-web/resources/dds/<selected_
schema>/data?fromTables=<selected_table>&columnFilter=MESSAGE_
DATA&offset=0&pageLimit=25" -u <dds_user>:<dds_pass> -o file_name.txt
```

The above queries can also be combined with the functions listed above in this chapter to get more filtered results.

Viewing Query Response as JSON Data

The DDS backend supports sending data as either JSON or XML.

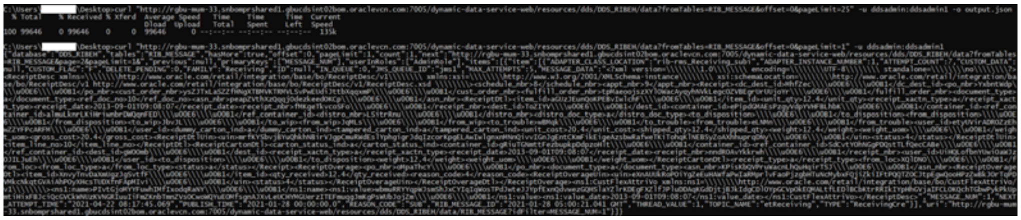
To view the data as XML, run the query in a `curl` command by adding the `-H` switch set like the following:

```
curl "http://<dds_host>:<dds_
port>/dynamic-data-service-web/resources/dds/<selected_
schema>/data?fromTables=<selected_table>&offset=0&pageLimit=25" -H
"Accept:application/xml" -u <dds_user>:<dds_pass> -o file_name.txt
```

JSON is the default response format. To return a JSON object, do not include the `-H` switch in the cURL command.

Or, you can set the cURL command with the `-H` switch setting `Accept` to `application/json` in the header. The cURL with output is as follows:

```
curl "http://<dds_host>:<dds_
port>/dynamic-data-service-web/resources/dds/<selected_
schema>/data?fromTables=<selected_table>&offset=0&pageLimit=25" -H
"Accept:application/json" -u <dds_user>:<dds_pass> -o file_name.txt
```



```
C:\Users\[redacted]\Desktop>curl "http://rgbu-mum-33.snbomprshared1.gbucdsint02bom.oraclevcn.com:7005/dynamic-data-service-web/resources/dds/DDS_RIBEH/data?fromTables=RIB_MESSAGE&offset=0&pageLimit=25" -u ddsadmin:ddsadmin1 -o output.json
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100 99646    0 99646    0     0  99646      0 --:--:-- --:--:-- --:--:--  135k

C:\Users\[redacted]\Desktop>curl "http://rgbu-mum-33.snbomprshared1.gbucdsint02bom.oraclevcn.com:7005/dynamic-data-service-web/resources/dds/DDS_RIBEH/data?fromTables=RIB_MESSAGE&offset=0&pageLimit=1" -u ddsadmin:ddsadmin1
{"database":"DDS_RIBEH","tables":"RIB_MESSAGE","hasMore":true,"offset":0,"pageLimit":1,"count":1,"next":"http://rgbu-mum-33.snbomprshared1.gbucdsint02bom.oraclevcn.com:7005/dynamic-data-service-web/resources/dds/DDS_RIBEH/data?fromTables
=RIB_MESSAGE&page=2&pageLimit=1&","previous":null,"primaryKeys":["MESSAGE_NUM"],"userInRoles":["AdminRole"],"items":[{"item":[{"ADAPTER_CLASS_LOCATION":"rib-rms_Receiving_sub1","ADAPTER_INSTANCE_NUMBER":1,"ATTEMPT_COUNT":7,"CUSTOM_DATA":
null,"CUSTOM_FLAG":"F","DELETE_PENDING":0,"FAMILY":"Receiving","ID":null,"IN_QUEUE":0,"JMS_QUEUE_ID":"jms1","MAX_ATTEMPTS":5,"MESSAGE_DATA":"<?xml version=\\\\\\\"1.0\\\\\\\" encoding=\\\\\\\"UTF-8\\\\\\\" standalone=\\\\\\\"no\\\\\\\"?>
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se/bo/ReceiptDesc/v1 http://www.oracle.com/retail/integration/base/bo/ReceiptDesc/v1/ReceiptDesc.xsd \\\\\\\"><schedule_nbr>8</schedule_nbr><appt_nbr>9</appt_nbr><Receipt><dc_dest_id>[illegible]\\\\u00E6\\\\u00B1</dc_dest_id><po_nbr>[illegible]
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_ATTEMPT_TIME":"2021-04-22 08:17:45.069","PUBLISH_TIME":"2021-01-28 00:00:00.0","REASON_CODE":"SUB","RIB_MESSAGE_ID":"2021-01-28 05:00:21.041 GMT","THREAD_VALUE":1,"TOPIC_NAME":"etReceiving","TYPE":"ReceivingCre"}],"uri":"http://rgbu-mum
-33.snbomprshared1.gbucdsint02bom.oraclevcn.com:7005/dynamic-data-service-web/resources/dds/DDS_RIBEH/data/RIB_MESSAGE?idFilter=MESSAGE_NUM=1"}]}
```

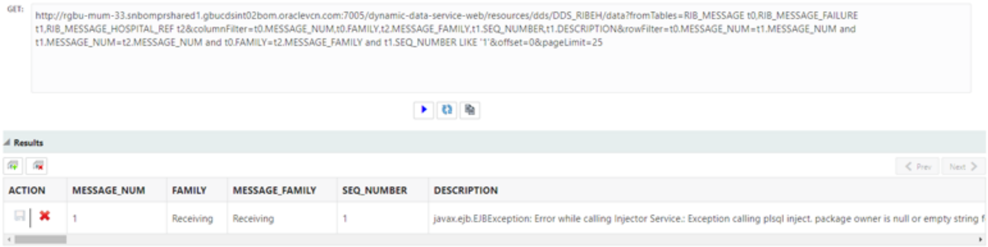
Note: Ensure that the required DDS application username/password is supplied.

JOINing Two or More Tables

DDS has the ability to join two or more tables. This is done using the JOIN element in the Query Builder Tab under the Designer section.

Use the check box to enable table joins. Once enabled, click inside the visible text field to view a list of tables. Select one or more tables as required.

Note: The row filter must be added to this, which can either be done by using the Row Filter in the UI or adding your own `rowFilter` by typing the required conditions in the GET query box. You must also ensure that all required columns are selected in the column filter, otherwise an error will display when you try to run the query.



GET: http://rgbu-mum-33.snbomprshared1.gbucdsint02bom.oraclevcn.com:7005/dynamic-data-service-web/resources/dds/DDS_RIBEH/data?fromTables=RIB_MESSAGE t0,RIB_MESSAGE_FAILURE t1,RIB_MESSAGE_HOSPITAL_REF t2&columnFilter=t0.MESSAGE_NUM,t0.FAMILY,t2.MESSAGE_FAMILY,t1.SEQ_NUMBER,t1.DESCRIPTION&rowFilter=t0.MESSAGE_NUM=t1.MESSAGE_NUM and t1.MESSAGE_NUM=t2.MESSAGE_NUM and t0.FAMILY=t2.MESSAGE_FAMILY and t1.SEQ_NUMBER LIKE '1'&offset=0&pageLimit=25

ACTION	MESSAGE_NUM	FAMILY	MESSAGE_FAMILY	SEQ_NUMBER	DESCRIPTION
	1	Receiving	Receiving	1	javax.ejb.EJBException: Error while calling Injector Service.: Exception calling plsql inject. package owner is null or empty string f

A sample GET query with result is as follows:

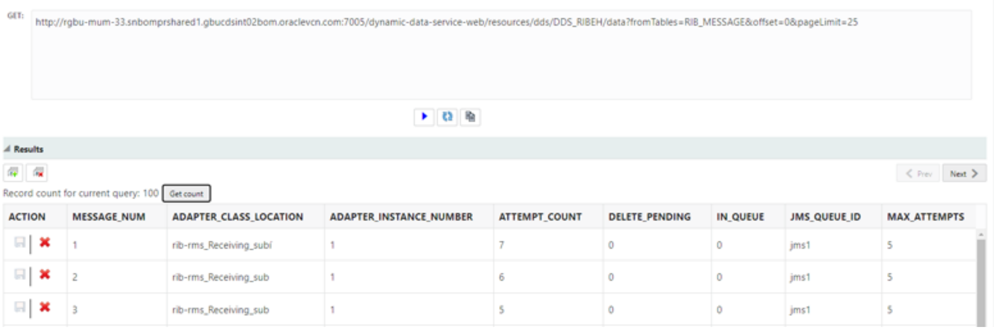
```
http://<dds_host>:<dds_port>/dynamic-data-service-web/resources/dds/<SELECTED_
TABLE>/data?fromTables=TABLE1 t0,TABLE2 t1,TABLE3
t2&columnFilter=t0.COLUMN1,t1.COLUMN1,t2.COLUMN1,t0.COLUMN2,t1.COLUMN2,t2.COLUMN2,
t0.COLUMN3,t1.COLUMN3,t2.COLUMN3&rowFilter=t0.COLUMN1=t1.COLUMN1 and
t1.COLUMN1=t2.COLUMN1 and t1.COLUMN2=t2.COLUMN3 and t1.COLUMN3 LIKE
'1'&offset=0&pageLimit=25
```

A `curl` equivalent of the above example:

```
curl "http://<dds_host>:<dds_
port>/dynamic-data-service-web/resources/dds/<SELECTED_
TABLE>/data?fromTables=TABLE1%20t0,TABLE2%20t1,TABLE3%20t2&columnFilter=t0.COLUMN1
,t1.COLUMN1,t2.COLUMN1,t0.COLUMN2,t1.COLUMN2,t2.COLUMN2,t0.COLUMN3,t1.COLUMN3,t2.C
OLUMN3&rowFilter=t0.COLUMN1=t1.COLUMN1%20and%20t1.COLUMN1=t2.COLUMN1%20and%20t1.CO
LUMN2=t2.COLUMN3%20and%20t1.COLUMN3%20LIKE%20'1'&offset=0&pageLimit=25" -u <dds_
user>:<dds_pass> -o filename.txt
```

Count of Records

DDS has the ability to fetch the count of records for a particular query. This can be used to fetch count of all records or a limited set of records based on conditions and parameters as required.



GET: http://rgbu-mum-33.snbomprshared1.gbucdsint02bom.oraclevcn.com:7005/dynamic-data-service-web/resources/dds/DDS_RIBEH/data?fromTables=RIB_MESSAGE&offset=0&pageLimit=25

Results

Record count for current query: 100

ACTION	MESSAGE_NUM	ADAPTER_CLASS_LOCATION	ADAPTER_INSTANCE_NUMBER	ATTEMPT_COUNT	DELETE_PENDING	IN_QUEUE	JMS_QUEUE_ID	MAX_ATTEMPTS
✖	1	rib-rms_Receiving_subí	1	7	0	0	jms1	5
✖	2	rib-rms_Receiving_sub	1	6	0	0	jms1	5
✖	3	rib-rms_Receiving_sub	1	5	0	0	jms1	5

A sample GET query with result is as follows:

```
http://<dds_host>:<dds_port>/dynamic-data-service-web/resources/dds/<SELECTED_
SCHEMA>/data?fromTables=TABLE1&offset=0&pageLimit=25
```

Note: The count query that actually runs is slightly different than the one displayed in GET box. The correct query is given below in the `curl` command equivalent.

A `curl` equivalent of the above example:

```
curl "http://<dds_host>:<dds_
port>/dynamic-data-service-web/resources/dds/<SELECTED_
SCHEMA>/data/count?fromTables=TABLE1&rowFilter=<CONDITIONS_AS_REQUIRED>" -u <dds_
user>:<dds_pass> -o filename.txt
```