ORACLE

Installing and Configuring Oracle Analytics Server 6.4 for use with Oracle Enterprise Manager Cloud Control

A technical brief for using OAS 6.4.0 with Enterprise Manager 13.4 and Enterprise Manager 13.5

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PURPOSE STATEMENT

This document provides an overview of the installation and configuration of Oracle Analytics Server 6.4.0 for use with Enterprise Manager 13.4 and 13.5. It is intended solely to help you assess the business benefits of upgrading to Enterprise Manager 13.4 and 13.5 and to plan your I.T. projects.

Oracle Analytics Server is a full featured reporting and analytics platform and is readily adaptable to utilize the rich data set that is available via Enterprise Manager.

This guide has been written and validated against Oracle Analytics Server 6.4.0.

THE NUMEROUS SCREEN SHOTS DISPLAYED IN THIS DOCUMENT ARE FROM ORACLE ANALYTICS SERVER 6.4.0.

DISCLAIMER

This document is for informational purposes only and is intended solely to assist you in planning for the implementation and upgrade of the product features described. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described in this document remains at the sole discretion of Oracle.

Due to the nature of the product architecture, it may not be possible to safely include all features described in this document without risking significant destabilization of the code.

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Preface

- For Enterprise Manager 13.5, BI Publisher is no longer installed nor configured alongside Enterprise Manager.
- Neither BI Publisher, nor Oracle Analytics Server, can be installed in the same WebLogic domain, nor on the same host system, as Enterprise manager 13.5.
- This guide is meant to be utilized as a supplement to, and not a replacement for, the existing Fusion Middleware Documentation Book Sets specific to Oracle Analytics Server and Oracle Analytics Publisher.
- The document provides specific details and instructions for an installation of Oracle Analytics Server 6.4.0,on a host separate system, to run BI Publisher Reports against the Enterprise Manager 13.4 and 13.5 repository database.

BEFORE BEGINNING THE PROCEDURES DOCUMENTED IN THIS HANDBOOK, DOWNLOAD ANY CUSTOMIZED BIP REPORTS FROM THE EMBEDDED BIP IN EM 13.4, USING THE BIP USER INTERFACE.

Background

1. BI Publisher is part of the on-premises product formerly known as Business Intelligence Enterprise Edition (BIEE).
2. BIEE has been re-branded Oracle Analytics Server (OAS).
3. BI Publisher has likewise been re-branded as Oracle Analytics Publisher Pixel Perfect Reporting.
4. OAS, to a certain extent, is an on-premises version of Oracle Analytics Cloud (OAC).

Design

For those customers who want to continue to use BI Publisher capabilities with Enterprise Manager, the licensing and support model included with Enterprise Manager 13.5 will continue to support this for Oracle Analytics Publisher.

However, installation and configuration of BI Publisher (BIP), now rebranded as Oracle Analytics Publisher (OAS), will be the responsibility of the customer.

Requirements

This guide provides a best practice for installation and configuration of OAS 6.4.0.

Enterprise Manager will continue to supply and support a set of feature-rich Oracle provided Out of Box reports designed and tested with Oracle Analytics Publisher 6.4.0.

Multiple copies of each set of these Out of Box Reports can easily be generated, to support execution against multiple Enterprise Manager Installations (when LDAP security store is utilized).

This guide is not meant to replace or otherwise supersede the large set of documentation books that are currently developed and available for Oracle Analytics Server, and Fusion Middleware as a whole, via the Oracle Help Center.

Where appropriate, screenshots and other pointers are being provided to help navigate these procedures.

References to specific documentation books in the OAS product library will also be referenced to provide further details.

The next section highlights some crucial details regarding the scope of this document.

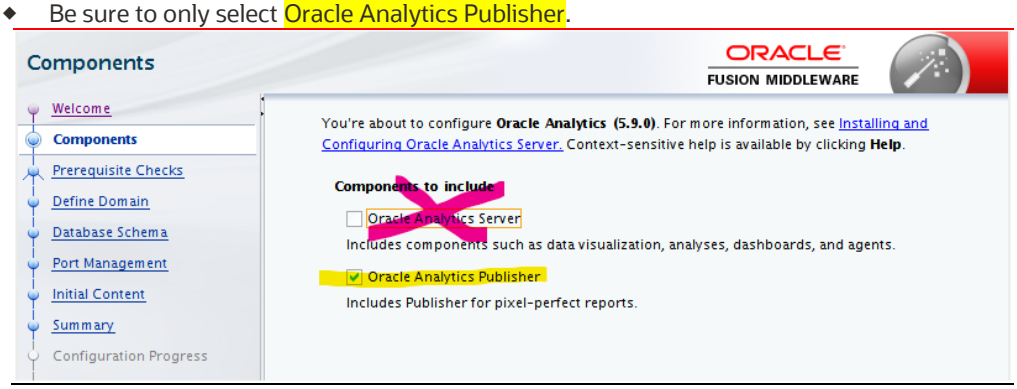
External References

Throughout this guide many footnotes are available that reference more detailed documentation books available for Oracle Analytics Server, Fusion Middleware Control, and other Oracle technologies.

These footnotes are cross referenced in ‘Chapter 21 References’.

Limited Scope

1. Configuration of the full Oracle Analytics Server component is beyond the scope of this guide.
   - This guide only addresses configurations including the Oracle Analytics Publisher component, and **not the full Oracle Analytics Server component.**
     - Further details can be found in 'section 8.7.2- Step 2 – Configuration'. This screen shot from that section is repeated below:
     - Be sure to only select Oracle Analytics Publisher.



   - As an alternative to this guide, utilize the standard Oracle OAS configuration documentation.[1]

2. High Availability configurations and/or Disaster Recovery solutions for OAS are beyond the scope of this guide.
   - Oracle Analytics Server fully supports Oracle's Maximum Availability Architecture (MAA).
     - The Oracle MAA architecture supports multiple Oracle Analytics Server systems as part of a single WebLogic cluster.
     - As an alternative to this guide, reference these documents:
       - Oracle® Analytics Enterprise Deployment Guide for Oracle Analytics Server.[2]
       - Oracle's Maximum Availability Architecture.[3]

3. A dedicated host system is required for the standalone Oracle Analytics Server.
   - It is theoretically possible to install and utilize OAS on the same host system as Enterprise Manager 13.5.
   - However, there are many disadvantages to this approach.
     - Out of the box, configuration of a standalone OAS on the same host system as Enterprise Manager will fail.
     - This is due to a limitation in the underlying WebLogic framework related to "Coherence Clusters".
   - If a customer managed to install and configure OAS on the same host system as EM 13.5, there could be unintended side effects that impact the operation of both EM 13.5 and OAS.

4. At some future date support for running OAS on the same host system as EM 13.5 *may* be documented.

Enhancement

A single OAS instance can be utilized to run reports against multiple Enterprise Manager installations.

- All Enterprise Manager Installations, along with the single OAS, must utilize the same LDAP configuration, with or without SSO.
- This implicitly requires that the same set of LDAP credentials be available on all Enterprise Manager installations, along with the standalone OAS.

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[1] (Configuring Oracle Analytics Server, 2021)
[2] (Oracle® Analytics Enterprise Deployment Guide for Oracle Analytics Server, 2020)
[3] (Oracle Maximum Availability Architecture, MAA, 2021)

Best Practice – Planning for a Fresh Installation of Enterprise Manager 13.5

Step A: Install and configure Enterprise Manager 13.5

1. Follow all documented procedures according to the official Enterprise Manager documentation set.
2. Do not proceed to step C until all relevant corporate internal requirements are met.

Step B: Follow the detailed steps in this workbook

1. Utilize this technical brief to install and configure a standalone OAS 6.4.0 installation on a separate, dedicated, host system.
2. Ensure that all relevant procedures up to and including chapter 15 are complete.

Step C: Update the standalone OAS installation for use with Enterprise Manager 13.5

1. Follow the procedures detailed in 'Chapter 18- Uploading Enterprise Manager Provided Reports':
2. Upload the updated set of Oracle Provided out of Box reports that are included with EM 13.5.
   - Utilize the standalone OAS User Interface to upload this new set of Oracle Provided Out-of-Box reports to OAS.

Best practice – Planning for an Upgrade of Enterprise Manager from EM 13.4 to EM 13.5

PREPARATION: DOWNLOAD ANY CUSTOMIZED BIP REPORTS FROM THE EMBEDDED BIP IN EM 13.4, USING THE BIP USER INTERFACE.

Step A: Follow the detailed steps in this workbook before upgrading to EM 13.5.

1. Install and configure the standalone OAS:
   - Utilize this technical brief to install and configure a standalone OAS 6.4.0 installation on a separate, dedicated, host system.
   - Ensure that all relevant procedures up to and including chapter 15 are complete.
     - Integrate the standalone OAS security configuration, as detailed, against an existing Enterprise Manager 13.4 installation(s).
2. Follow the procedures detailed in 'Chapter 16 -Migrating customized BIP reports to standalone OAS':
   - Utilize the existing Enterprise Manager 13.4 environment, and the embedded BI Publisher user interface, to download any customized reports to your local PC or desktop system.
   - Utilize the standalone OAS 6.4.0 user Interface to upload these same customized reports, from your local PC or desktop system to the standalone OAS.
   - Do not proceed to step B until all relevant internal corporate requirements are met.

Step B: Upgrade to Enterprise Manager 13.5

1. Follow all documented procedures according to the official Enterprise Manager documentation set.
2. Do not proceed to step C until all relevant corporate internal requirements are met.

Step C: Update the standalone OAS installation for use with Enterprise Manager 13.5

1. Follow the procedures detailed in 'Chapter 18- Uploading Enterprise Manager Provided Reports':
   - Upload the updated set of Oracle Provided out of Box reports that are included with EM 13.5.
     - Utilize the standalone OAS User Interface to upload this new set of Oracle Provided Out-of-Box reports to OAS.
2. Follow the procedures detailed in 'Chapter 19- Migrating BIP Schedules from EM 13.4':
   - Migrate the BIP report schedules, from the embedded BIP included in EM 13.4, to the standalone OAS.

Recommendation for the version of Oracle Analytics Server

Please note that there are currently two versions of this guide.

- This guide is specific to Oracle Analytics Server (OAS) version 6.4.0.
- The prior version of this guide was specific to Oracle Analytics (OAS) version 5.5.0.

Both versions of this guide have been written, developed, and tested by the Enterprise Manager Development organizations.

The implications of this development and testing are far reaching

The two versions of this guide provide far more than just simple certification of a given version of Oracle Analytics Server.

These guides have been written with the same rigor and diligence as any other Oracle software deliverable.

If the steps in this guide are followed exactly, a fully functional, standalone Oracle Analytics Server will be available with the same set of capabilities as the embedded BI Publisher included in Enterprise Manager 13.4.

Other Versions of Oracle Analytics Server are available today, such as OAS 5.9.0, and new versions of Oracle Analytics Server will be released over time.

Oracle's recommendation is to utilize the prior version of this guide, with OAS 5.5.0, or this version with OAS 6.4.0.

- Please note that all the screenshots in this version of the guide are from OAS 6.4.0.

Customer Impact

Enterprise Manager supports a rich set of architectural and security options, as does BI Publisher and Oracle Analytics Publisher.

In past releases of Enterprise Manager, prior to Enterprise Manager 13.5, all these Enterprise Manager options had been enhanced to incorporate BIP, in parallel, with the OMS.

Some examples include:

- Enterprise Manager Login using repository-based authentication (default configuration).
- Repository-based authentication is also utilized alongside Oracle RDBMS Enterprise User Security (EUS).
- Enterprise Manager Login using LDAP, based upon WebLogic Security Providers.
- Enterprise Manager Single Sign On.
- EM High Availability and Disaster Recovery.
- EM runtime tools (start, stop, status, etc.…)
- Deployment and management of Oracle Provided BIP Reports.
- The capability to patch EM with updated BIP reports.
- Target Level permissions (VPD) for BIP Report Execution.

All this automation has been removed in Enterprise Manager 13.5.

- The purpose of this document is to ease this transition from the integrated BIP to a standalone OAS installation.

Cross References to Relevant Oracle Documents

OAS supports all the same architectural and security options as was provided via the embedded BI Publisher.

However, lifecycle management for the standalone OAS product is via a rich, and complex, set of documentation books.

Beyond OAS, numerous other Oracle technologies and products are referenced and outlined within these pages.

References to relevant Oracle documentation are available throughout this guide, utilizing document footnotes.

All these foot notes are cross referenced to the complete set in the bibliography, located here:

- Chapter 21 - References

Organization of this Guide

STEP	DESCRIPTION	CROSS-REFERENCE
1	Basic installation and configuration of Oracle Analytics Server.	Chapter 8
2	Security configuration	Chapter 9 **OR** Chapter 10 And optionally Chapters 11, 12, 13
A	Oracle Analytics Server 6.4.0	Chapter 9
B1	**If Repository Based:** Enterprise Manager RDBMS Repository.	Chapter 10 ⇨ Skip to Chapter 14
B2	**else LDAP Based:** Fusion Middleware and Specific WebLogic Security Configurations.	Chapter 11 No SSO? ⇨ Skip to Chapter 14
i	Optional configuration of Oracle HTTP Server (OHS)	Chapter 12 No OAM? ⇨Skip to Chapter 14
ii	Optional configuration of Oracle Access Manager (OAM) Single Sign On.	Chapter 13
3	Configuration of required Oracle Analytics Server Datasource(s).	Chapter 14
4	Migrating any customized BIP reports from the embedded BIP to the standalone OAS.	Chapter 16
5	Installation of Oracle provided Out of Box Reports to the standalone OAS.	Chapter 18
6	Migrating schedules from the Enterprise Manager 13.4 embedded BIP.	Chapter 19
7	Updating the Enterprise Manager 13.5 WebLogic Domain target.	Chapter 20

Table 1. Outline of Guide

There is also a flow chart of the above table in 'Chapter 6 - Flow chart for all Procedures'.

CHAPTER 1. OVERVIEW OF BASE INSTALL AND CONFIGURATION OF OAS

There are three steps to get OAS installed and preliminarily configured.

All the binaries for the below items can be downloaded utilizing the standard Oracle eDelivery website.

1. Install Required JDK (JDK8 8u211 or higher)[4]
2. Install Fusion Middleware Control Infrastructure (do not configure).[5]
3. Installation of OAS 6.4.0.[6]
4. Application of the OWSM bundle patch: 12.2.1.4.211129. See patch ID 33618954
5. Application of the latest Oracle Fusion Middleware patch set update: See document ID 2817011.1
6. Configuration of OAS and associated Database Schema objects.

[4] (Java Platform, Standard Edition - Release 8, 2020)
[5] (Oracle® Fusion Middleware, 2020)
[6] (Configuring Oracle Analytics Server, 2021)

CHAPTER 2. OVERVIEW OF POST INSTALL STEPS FOR OAS

THE STEPS IN THIS DOCUMENT WERE SPECIFICALLY DEVELOPED AND TESTED AGAINST BOTH ENTERPRISE MANAGER 13.4 AND ENTERPRISE MANAGER 13.5

Below is an outline of the steps needed to be followed the successful base install and configuration of OAS.

It is important to follow these detailed steps against Enterprise Manager 13.4, prior to upgrading to Enterprise Manager 13.5

1. Configure the appropriate OAS security model and required roles.[7]
2. Configure the OAS Datasource(s), for use with the Enterprise Manager Repository database(s). [8]
3. Configure the EM repository database such that EM administrators have access to EM data, when logged into the standalone OAS.

After the Enterprise Manager 13.5 upgrade

1. Install and utilize the Oracle provided out-of-the-box Reports.
2. Upload any customized reports from the prior release of EM.
3. Migrate the BIP Report Schedules from the embedded BIP in Enterprise Manager 13.4 to the standalone OAS.[9]

[7] (OAS - About Alternative Security Options, 2021)
[8] (OAS - Set Up Data Sources, 2021)
[9] (Migrating Scheduler Jobs and Job History, 2021)

CHAPTER 3. OVERVIEW OF OAS SECURITY CONFIGURATIONS

Enterprise Manager is generally configured with one of the security configurations shown below. [10]

The standalone OAS can then to be configured to match, or map, to this same security configuration.

ENTERPRISE MANAGER SECURITY CONFIGURATION	CORRESPONDING OAS SECURITY MODEL	NUMBER OF EM INSTALLS PER OAS INSTALL	UNDERLYING SECURITY STORE

• Repository-based security:
  • Default, out-of-box EM security configuration.
	Database Security Model[11]	One	• Enterprise Manager Repository database system. (RDBMS):
			  • All users and roles defined in the RDBMS.

• LDAP, with or without SSO:
  • Configured utilizing standard `emctl` commands.
	Fusion Middleware[12]	One or more	• LDAP server (i.e., OID or AD):
			  • All users and groups defined in the LDAP server.

Table 2. Mapping of Enterprise Manager Security Configurations to OAS Configuration

The following chapter provided an overview of the two Enterprise Manager Security Configurations from the table above.

[10] (EM - Security Features : Supported Authentication Schemes, 2021)
[11] (OAS - Integrate with Oracle Database Security, 2021)
[12] (OAS - Configure Oracle Fusion Middleware Security Model, 2021)

CHAPTER 4. OVERVIEW OF ENTERPRISE MANAGER SECURITY

4.1 EM Repository based authentication

- Requirements:
  - OAS 'Database Security Model'[13]
  - Fallback 'SuperUser'
  - Create required DBMS roles.
  - Grant/Revoke these roles to appropriate Enterprise Manager administrator(s).
    - Note: Out of box, EM administrators have a corresponding DBMS user.
  - Create the JDBC Datasource EMREPOS for use with Enterprise Manager.

4.2 LDAP-based authentication

Requirements:

- OAS 'Fusion Middleware Security Model'[14]
- corresponding Fusion Middleware Configuration,
- Configuration steps are required, utilizing the Fusion Middleware Control that is bundled with OAS
- Additional manual steps involving editing of specific Fusion Middleware configuration files.
- If EM is also utilizing SSO, OAS is to be likewise configured:
  - Manual configuration of additional Fusion Middleware configuration files.
  - Installation of Oracle HTTP Server (OHS) into the same domain as OAS.
  - Configuration of OHS Webgate in the OAS domain by editing additional Fusion Middleware configuration files.
  - Additional configuration of OAS.
- Configure the JDBC Datasource(s) EMREPOS [, EMREPOS2 [, EMREPOS3 ...]] for use with Enterprise Manager.

[13] (OAS - Integrate with Oracle Database Security, 2021)
[14] (OAS - Configure Oracle Fusion Middleware Security Model, 2021)

CHAPTER 5. OVERVIEW OF REQUIRED OAS DATABASE REFERENCES

Oracle Analytics Server is configured with either 2 or 3 database references.

The number of databases references depends on which Enterprise Manager security model is being utilized, as discussed in the prior Chapter 4, Overview of Enterprise Manager Security.

The three database references are summarized in the below table:

DATABASE REFERENCE	OAS SECURITY MODEL	REFERENCED DATA
1. Oracle Analytics Server Schema	Common to Both	• Standard WebLogic schema. • OAS scheduler schema.
2. Enterprise Manager Repository	Common to Both	The actual Enterprise Manager Repository data that is rendered by Oracle Analytics Publisher Reports.
3. Enterprise Manager Repository	Database Security Model[15]	The credentials for all Enterprise Manager Administrators.

Note that the databases referenced can utilize any of the standard Oracle Databases (for example, pluggable databases).

5.1 Two Common Database References

4. Oracle Analytics Server Schema:
   - The Oracle Database that contains all the database objects required by Oracle Analytics Server:
   - This consists of the complete Oracle Analytics database schema, including the OAS scheduler schema.
   - This database is configured in 'section 8.7.5 - Step 5 - Database Schema'.
   - For further details on the OAS scheduler, see 'section Chapter 19-Migrating BIP Schedules from EM 13.4'.
5. Enterprise Manager Repository:
   - This is the complete Enterprise Manager Repository Database Schema.
   - This database is configured for use with OAS in 'Chapter 14 - Configuration of required OAS Datasource(s)'.
   - This database contains all the Repository data that is utilized to run Oracle Analytics Publisher reports.

5.2 Repository Based Authentication

6. Enterprise Manager Repository:
   - The Oracle Database that contains all required credentials of all Enterprise Manager Administrators.
   - This provides support for logging into OAS as Enterprise Manager Administrators, for use with OAS.

5.3 Relationship between Database References and JDBC Simple Connect Descriptor

For each of the above three possible database references, entry of a user supplied JDBC Simple Connect Descriptor is required.

Please consult 'Appendix J- Details on the JDBC Simple Connect ' for a complete discussion of this, and various tools for determining the correct Simple JDBC Connect Descriptor to use for the above 3 database references.

[15] (OAS - Integrate with Oracle Database Security, 2021)

CHAPTER 6. FLOW CHART FOR ALL PROCEDURES

Figure 1. Flow Chart – Overview of installation and configuration steps

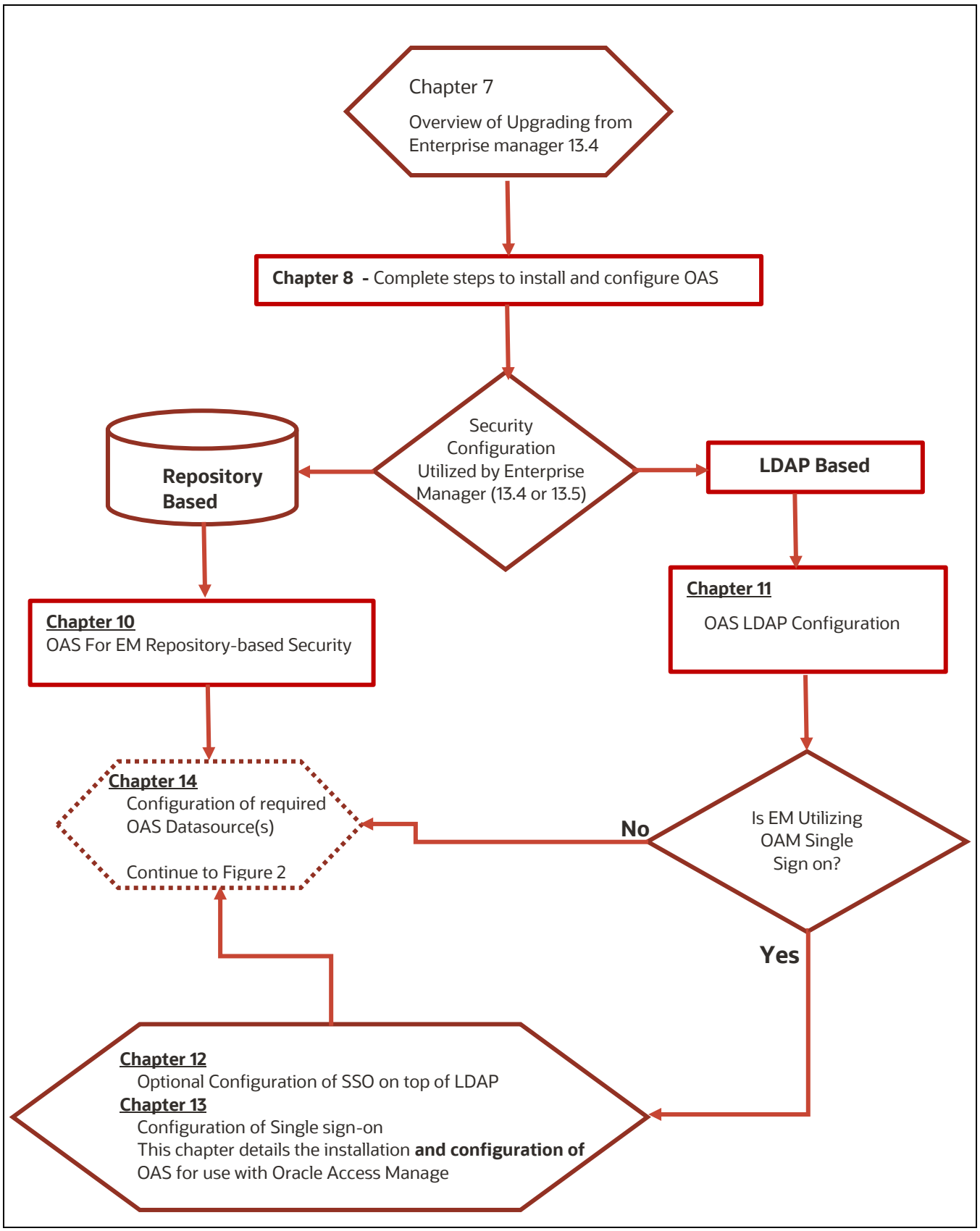
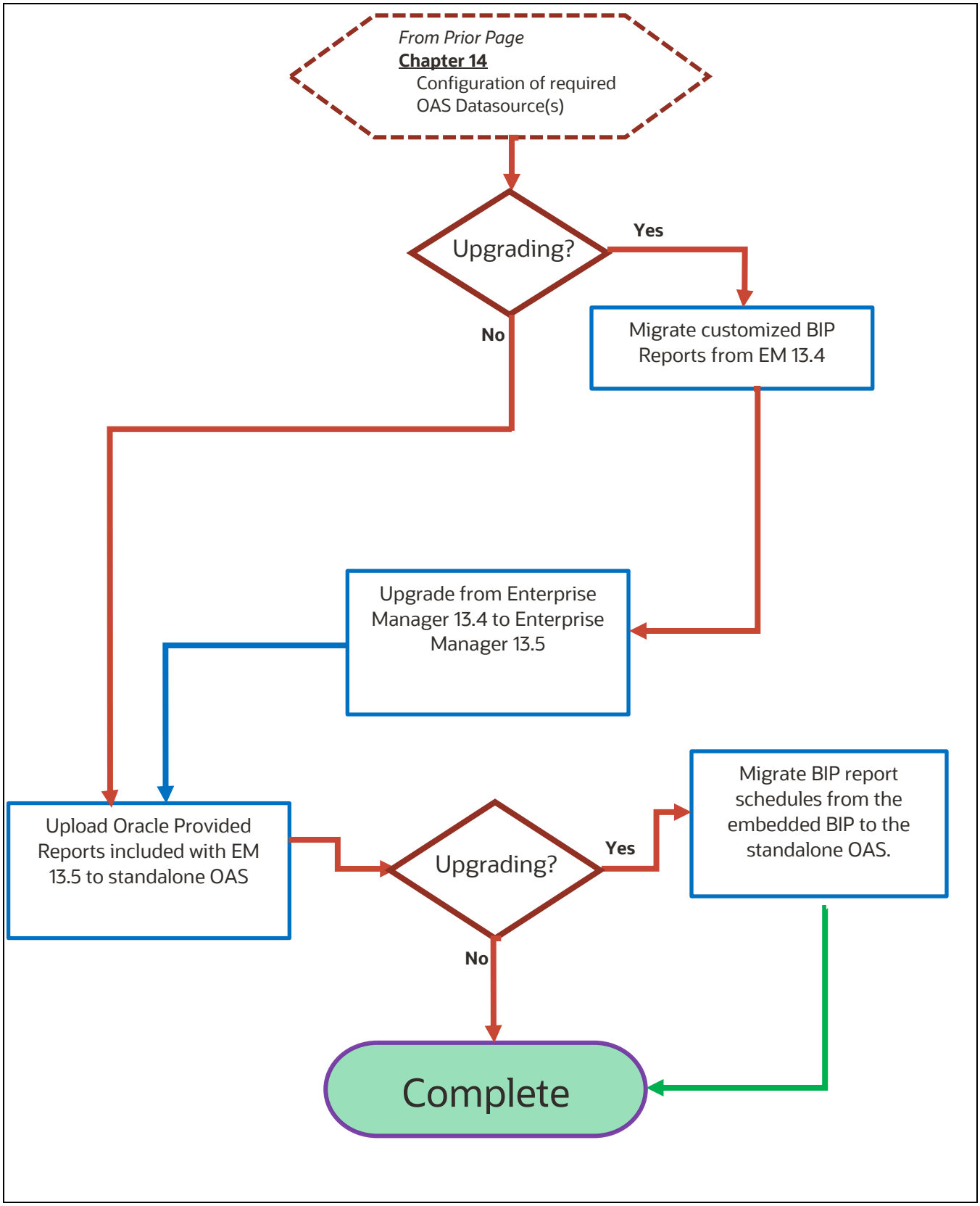


Figure 2. Flow Chart – Final steps - Continued from prior page



CHAPTER 7. OVERVIEW OF UPGRADING FROM ENTERPRISE MANAGER 13.4

BEFORE BEGINNING THE PROCEDURES DOCUMENTED IN THIS HANDBOOK, DOWNLOAD ANY CUSTOMIZED BIP REPORTS FROM THE EMBEDDED BIP IN EM 13.4, USING THE BIP USER INTERFACE.

There are several distinct requirements to successfully upgrade from a prior release of EM, with the embedded BI Publisher, to the standalone OAS.

It is crucial that planning for the upgrade to EM 13.5 begin **well prior to the upgrade.**

The most important considerations are:

- Ensuring any customized BIP reports are available in the standalone OAS.
- Ensuring any prior BIP report schedules are migrated to the standalone OAS.

CHAPTER 8. COMPLETE STEPS TO INSTALL AND CONFIGURE OAS

The following section details the standard installation and configuration of Oracle Analytics Server (OAS).

The below 4 steps are detailed in section 8.1 through 8.4.[16]

1. Section 8.1 - Installation of a supported Java Development Kit (JDK) [JDK8: u251 or newer].[17]
2. Section 8.2 - Installation of Fusion Middleware Infrastructure[18]
3. Section 8.3 - Installation of the OAS binaries into the existing WebLogic Middleware Home.[19]
4. Section 8.5.6- Configuration of OAS into the WebLogic Domain, along with the required Database schema objects.

The required installers for the 4 steps above can be downloaded from OTN or eDelivery, as appropriate.

STEP	FILENAME	DESCRIPTION
1	jdk-8u311-linux-x64.tar.gz	Latest JDK as of Nov. 10, 2021
2	fmw_12.2.1.4.0_infrastructure.jar	Required FMW for OAS
3	Oracle_Analytics_Server_Linux_6.4.0.jar	OAS 6.4.0 Installer

Table 3. Required OAS Installer

Throughout the rest of this document, example directories are color coded, as below:

NOTATION	COMMENTS
stagedir/OASMW	The ORACLE_HOME and MW_HOME for OAS
stagedir/java/jdk1.8.0_311	The JAVA_HOME
zipsdir	Location of all Shiphomes and ZIP files

Table 4. Key to directories used in examples

[16] OAS Quick Reference
[17] Java Platform, Standard Edition - Release 8, 2020)
[18] Oracle® Fusion Middleware
[19] OAS - Installing the Oracle Analytics Server Software

8.1 Install JDK (JDK8 8u311 or higher)

Choose the location for the JAVA HOME, and untar the appropriate distribution JDK.

```
# Create JAVA_HOME staging area
$ mkdir -p stagedir/java
$ cd stagedir/java
$ pwd
stagedir/java

# Set required environment
$ JAVA_HOME=stagedir/java/jdk1.8.0_311 ; export JAVA_HOME
$ echo $JAVA_HOME
stagedir/java/ jdk1.8.0_311

# Install Java bits
$ tar xzf zipsdir/jdk-8u311-linux-x64.tar.gz
$ ls jdk1.8.0_311
bin       include     lib       man
. . . .
$ cd $HOME
```

8.1.1 Confirm Correct Installation

```
$ PATH=$JAVA_HOME/bin:$PATH; export PATH
$ which java
stagedir/java/bin/java/jdk1.8.0_311

$ java -version
java version "1.8.0_311"
Java(TM) SE Runtime Environment (build 1.8.0_311-b11)
Java HotSpot(TM) 64-Bit Server....
```

8.2 Install Fusion Middleware Infrastructure

NOTE: FMW is always a software-only install.

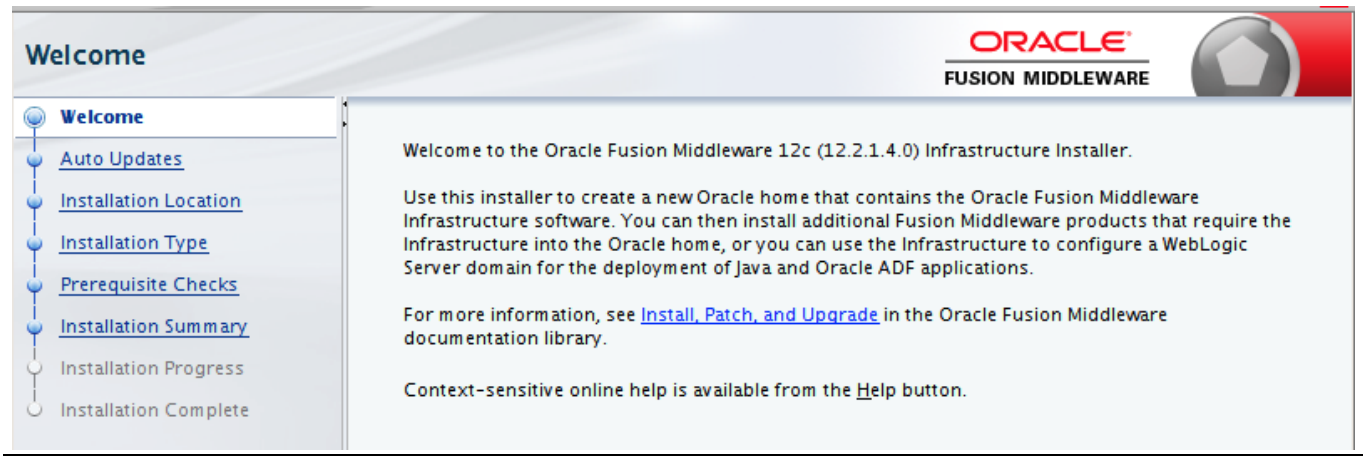
```
# Confirm correct java version and path
$ which java
stagedir/java/bin/java/jdk1.8.0_311
$ java -version
java version "1.8.0_311"
Java(TM) SE Runtime Environment (build 1.8.0_311-b11)
Java HotSpot(TM) 64-Bit Server....

# Setup MW_HOME
$ MW_HOME=stagedir/OASMW ; export MW_HOME
$ mkdir -p $MW_HOME
$ cd $MW_HOME

# Execute installer
$ java -jar zipsdir/fmw_12.2.1.4.0_infrastructure.jar
Launcher log file is /tmp/...
Extracting the installer . . Done
Checking if CPU speed is above 300 MHz...    Passed
Checking monitor: must be configured...    Passed
Checking swap space: must be greater ... Passed
Checking if this platform requires a 64-bit JVM.... Passed ...
Checking temp space: must be greater ... Passed
Preparing to launch the Oracle Universal Installer from /tmp/...
```

If this is the first Oracle product being installed on this system

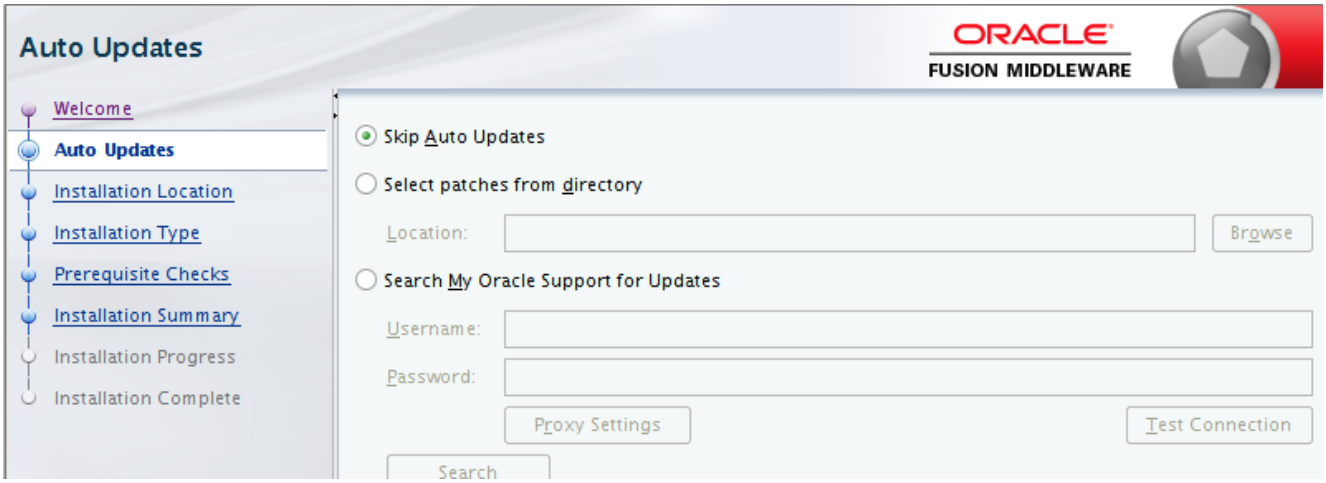
A preliminary screen is presented for the first Oracle Product Installed on a System:

1. Enter the directory location for Oracle Inventory files.
2. Enter the operating system group for Oracle Inventory files.

8.2.1 Step 1 – Welcome

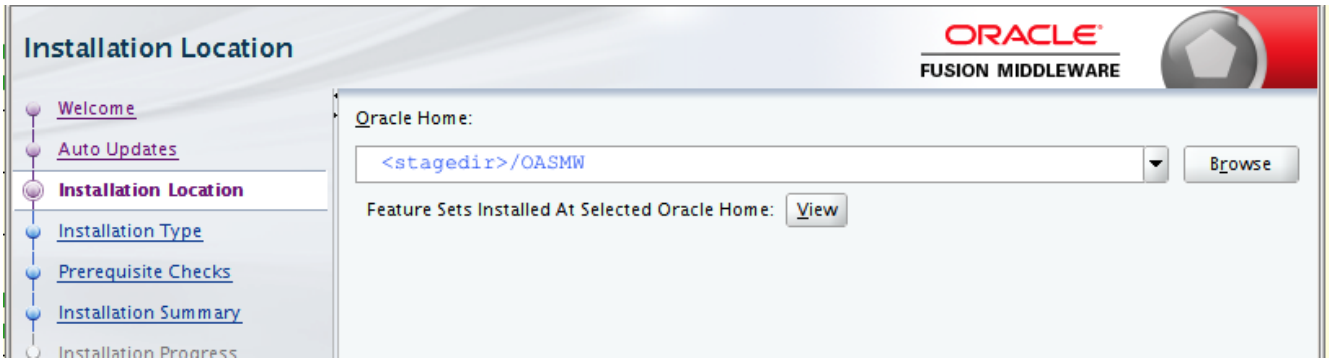


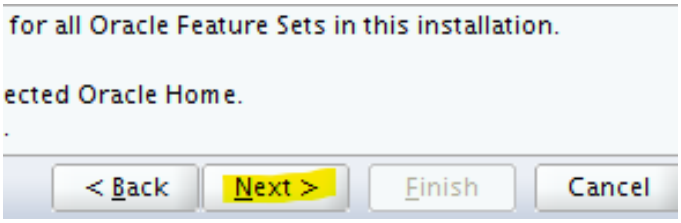
8.2.2 Step 2 – Auto Updates



8.2.3 Step 3 – Installation Location

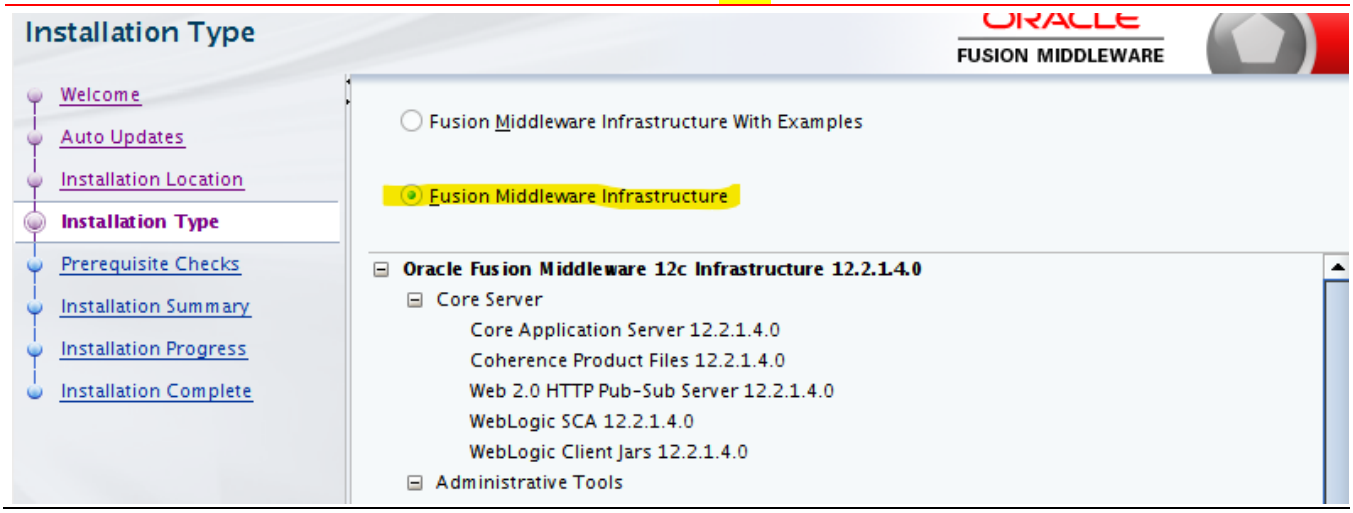
- For **Oracle Home**, choose the MW_HOME location from above (i.e., `stagedir /OASMW`)
- Click Next





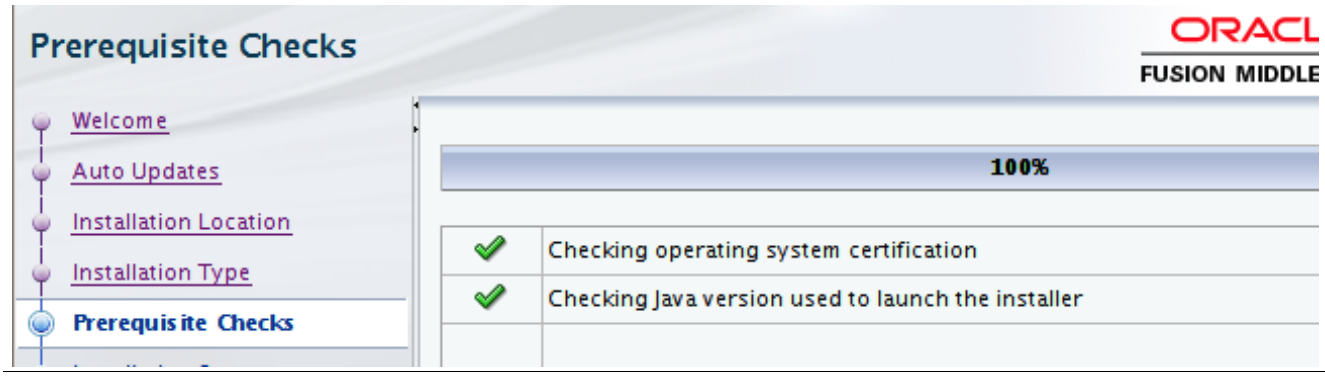
8.2.4 Step 4 – Installation Type

- Choose 'Fusion Middleware Infrastructure' and then click Next



8.2.5 Step 5 – Prerequisite Checks

- Review the results of the prerequisite steps and click Next.

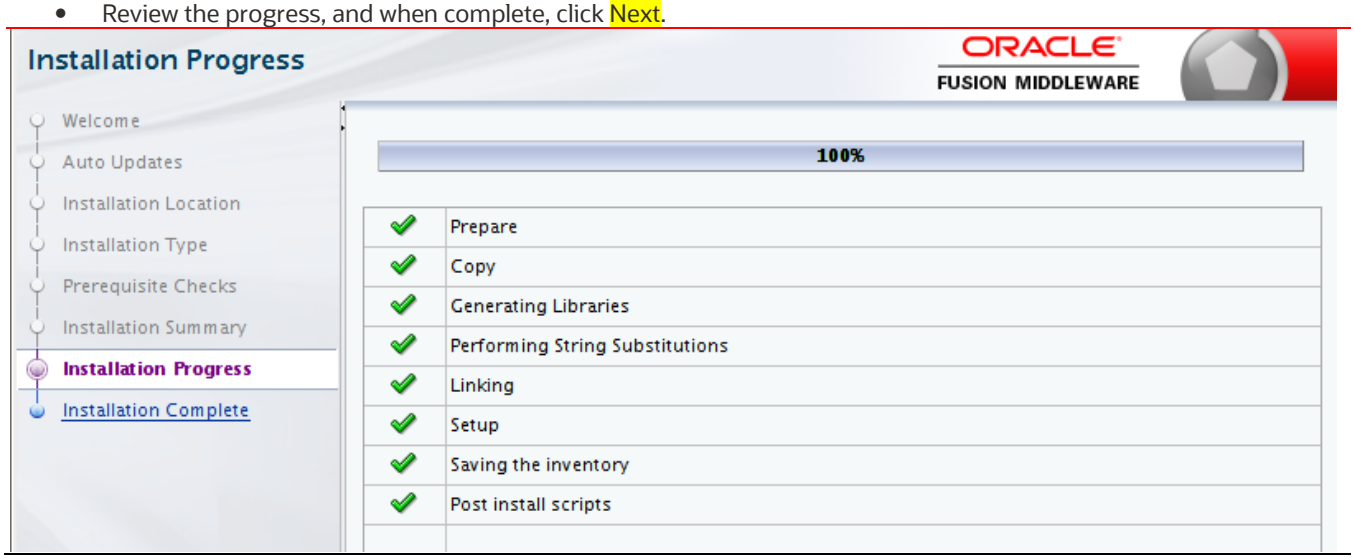


8.2.6 Step 6 - Installation Summary

- Review the installation summary and click Install.

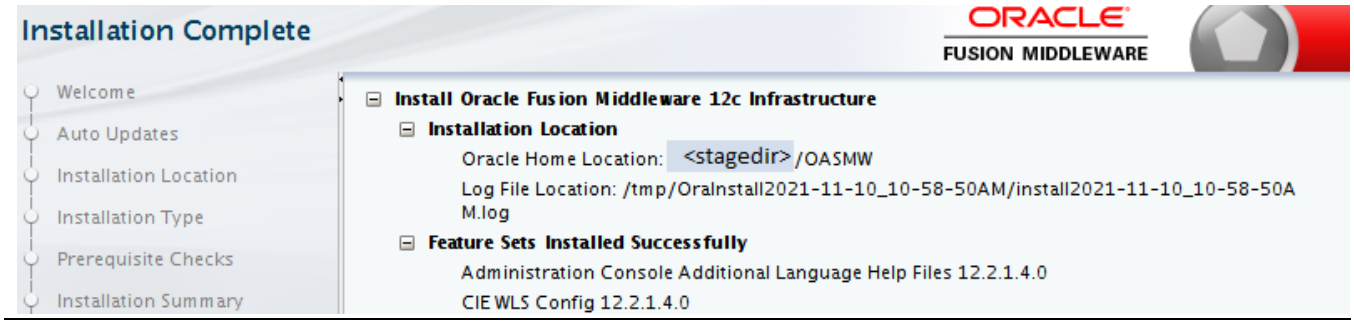
8.2.7 Step 7 – Installation Progress

- Review the progress, and when complete, click Next.



8.2.8 Step 8 – Installation Complete

- Click Finish



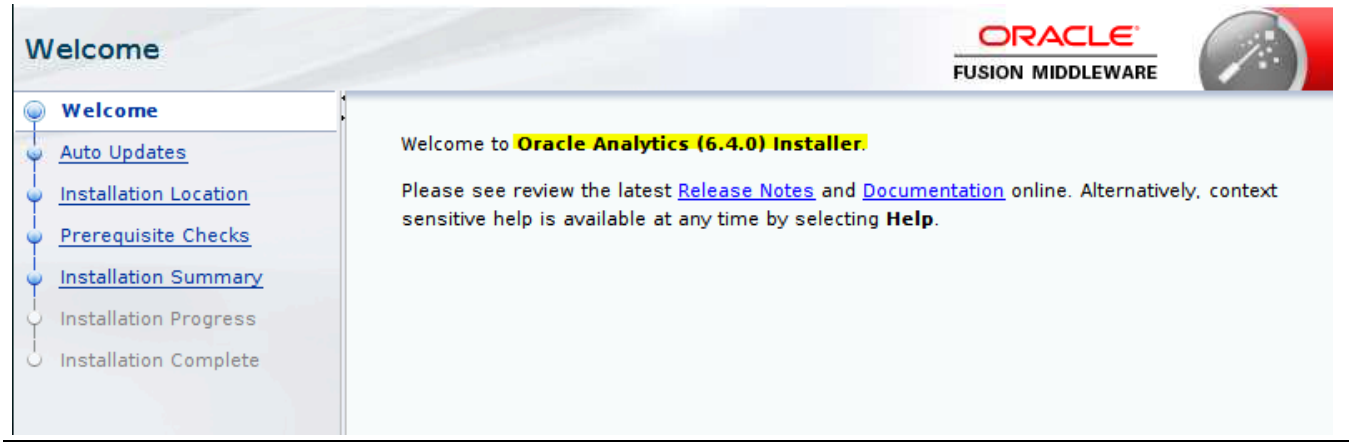
NOTE: *OAS comes with its own configuration tools,* ***do not run*** `$MW_HOME/oracle_common/common/bin/config.sh`

8.3 Install OAS

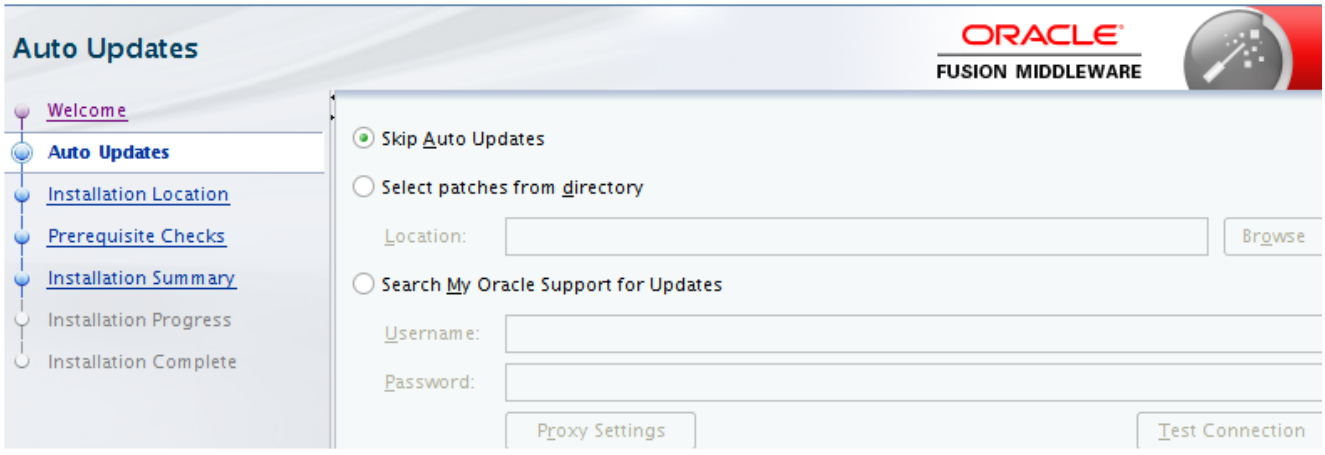
- Start the installer

```
# Confirm correct java and path
$ which java
stagedir/java/bin/java/jdk1.8.0_311
$ java -version
java version "1.8.0_311"
Java(TM) SE Runtime Environment (build 1.8.0_311-b11)
Java HotSpot(TM) 64-Bit Server....

# Setup MW_HOME
$ MW_HOME=stagedir/OASMW ; export MW_HOME
$ mkdir -p $MW_HOME
$ cd $MW_HOME

# Execute installer
$ java -jar  zipsdir/Oracle_Analytics_Server_Linux_6.4.0.jar
Launcher log file is /tmp/OraInstall...
Extracting the installer . . . .
```

8.3.1 Step 1 – Welcome

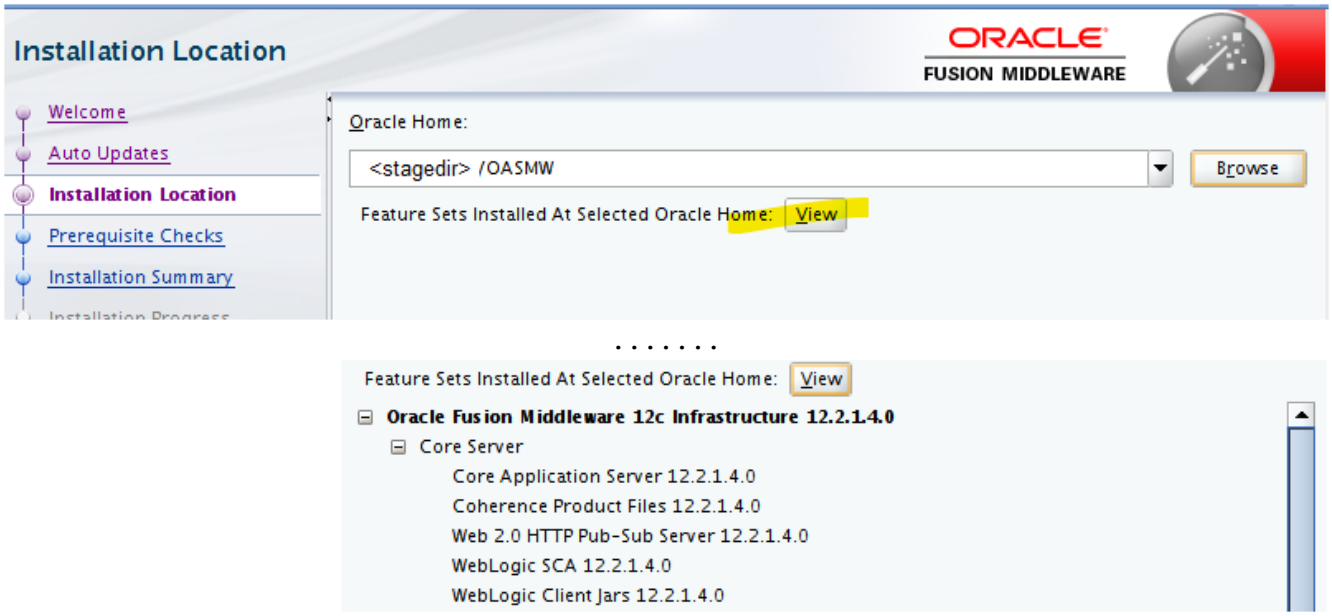


8.3.2 Step 2 – Auto Updates



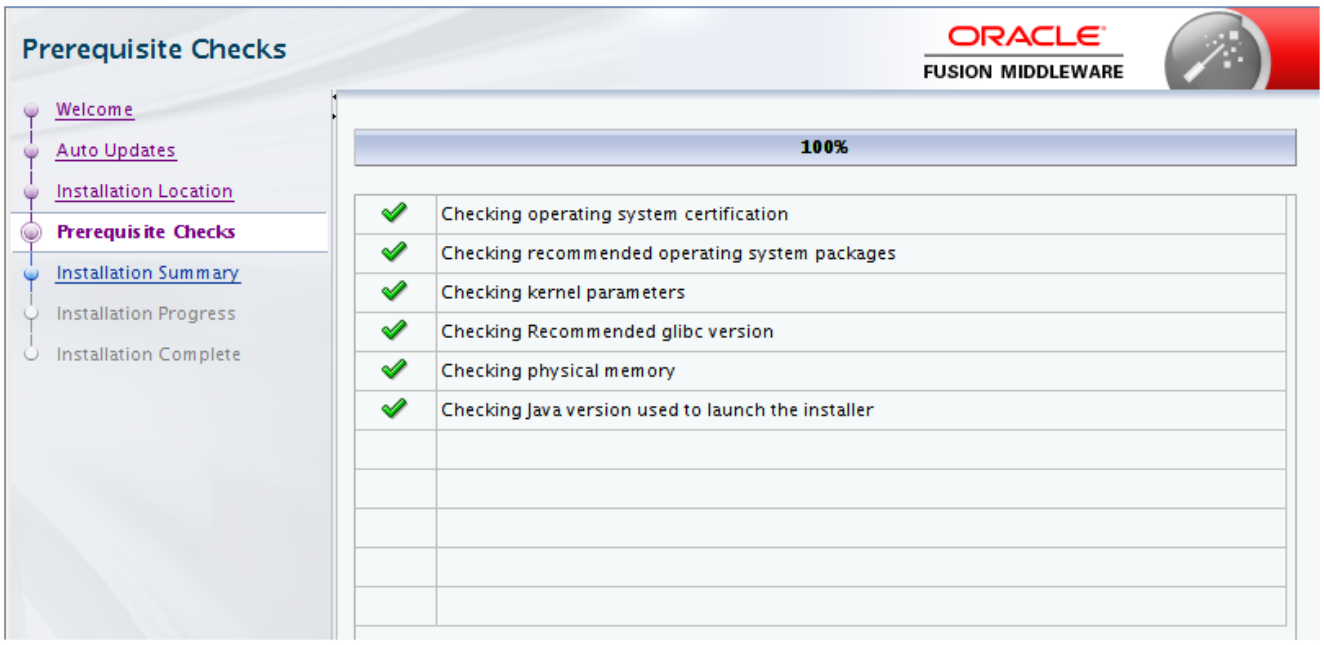
8.3.3 Step 3 – Choose Oracle Home

- Enter the same value here as was chosen for Fusion Middleware in 'section 8.2.3Step 3 – Installation Location'.
- Confirm this wit the View button.



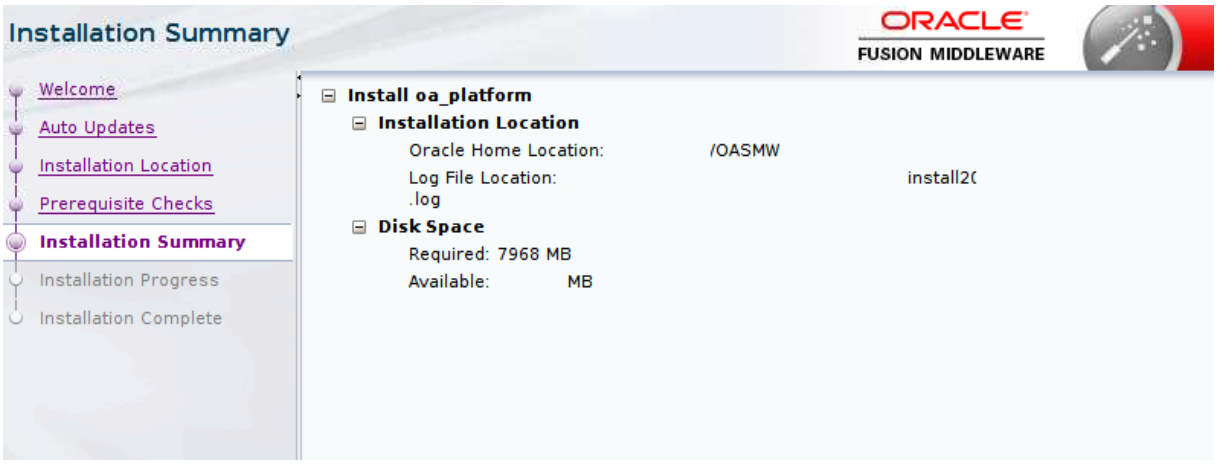
8.3.4 Step 4 – Pre-requisite Checks

- Once the checks have all passed, click Next

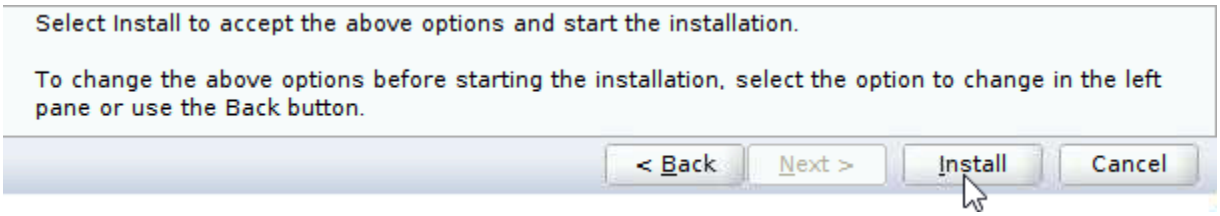


8.3.5 Step 5 – Installation Summary

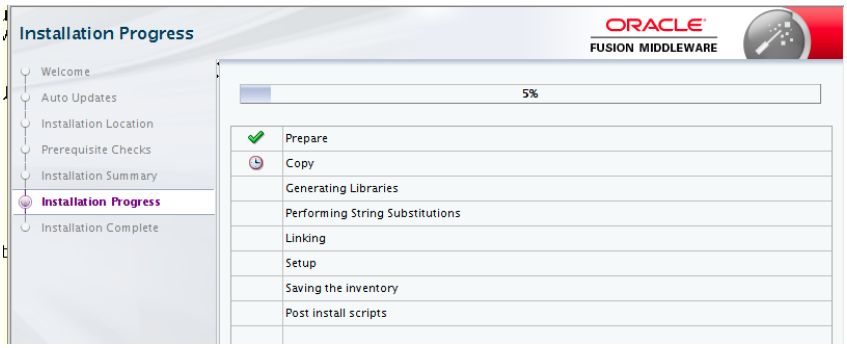
- Click Install.



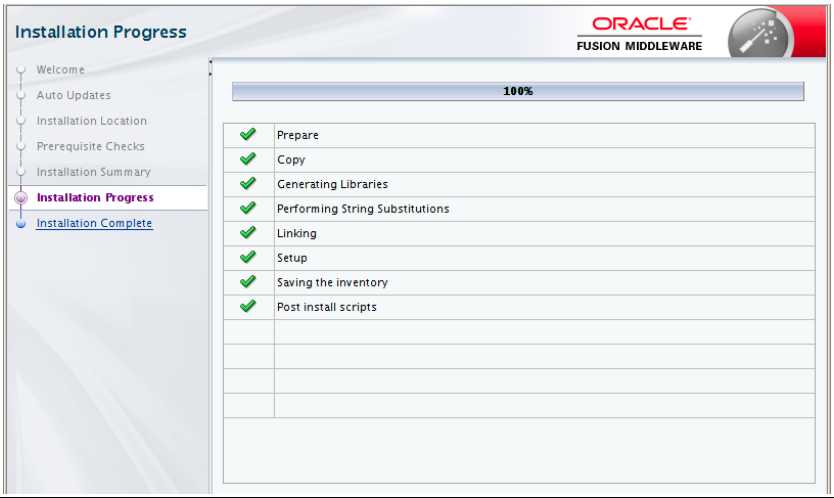
. . . . . .



8.3.6 Step 6 – Installation Progress

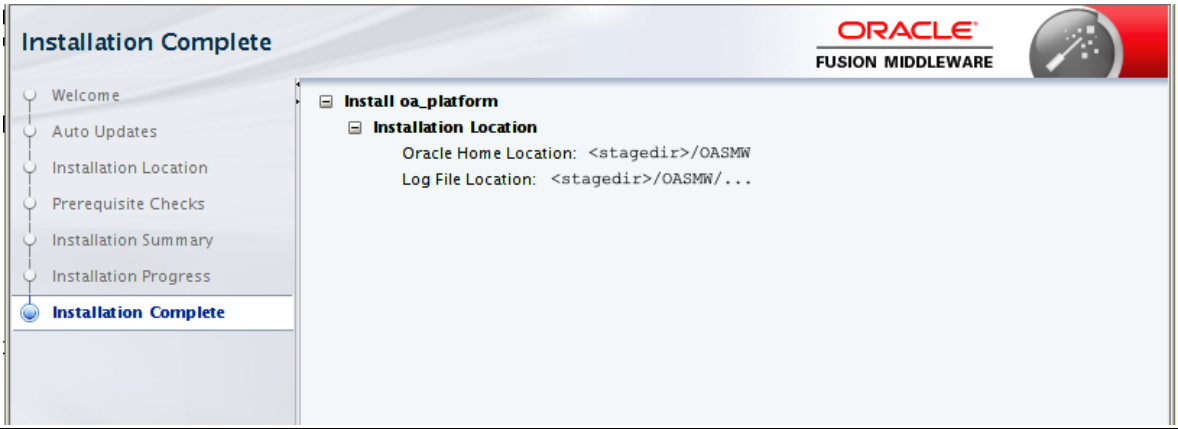


. . . . . .



8.3.7 Step 7 – Installation Complete

- Click Finish



8.4 Installation of required patch sets

There are two sets of patch steps that need to be followed.

Each of these steps contain several sub-steps.

The exact set of sub-steps are associated with the ongoing delivery of relevant CPUs (Critical Patch Updates).

Due to the nature of CPUs, this is a bit of moving target, and it best to follow the appropriate flows, as documented in the two below support notes.

1. Application of the OWSM bundle patch: 12.2.1.4.211129. See patch ID 33618954
2. Application of the latest Oracle Fusion Middleware patch set update: See document ID 2817011.1

For convenience, as of June 2022, the complete set of sub steps are shown below.

It is best to no rely on this specific set, but these are outlined to show the general progression of the patch application.

Required Patches as of August 30, 2022:

- - To be applied, in order, after the OAS installation, and prior to OAS configuration:

#	Size	File	Description	Patch #
1	4.5M	p33618954_122140_Generic.zip	Required WSM Bundle Patch	33618954
2	454M	p18143322_1800_Linux-x86-64.zip	Java JDK-8u333	18143322
3	517M	p34080315_122140_Generic.zip	WLS_SPB_12.2.1.4.220418	34080315
4	2M	p33735326_12214220105_Generic.zip	Required WLS Overlay Patch	33735326
5	1.1M	p33791665_12214220105_Generic.zip	Required WLS Overlay Patch	33791665
6	34M	p33958532_122140_Generic.zip	Required ADF patch	33958532
7	20M	p34044738_122140_Generic.zip	Required third party CPUs	34044738
8	237K	p32784652_122140_Generic.zip	Required OPSS Patch	32784652
9	24K	p30613424_122140_Generic.zip	Required FMW Control Patch	30613424
10	6.2M	p33281560_122140_Generic.zip	Required Web Center Patch	33281560

```
Review the following for more OPatch information:
Doc ID 1587524.1 Using OUI NextGen OPatch 13 for Oracle Fusion Middleware 12c
https://support.oracle.com/rs?type=doc&id=1587524.1
```

SPECIAL NOTE REGARDING THE JDK-8U333 PATCH UPDATE (ITEM 2 IN THE TABLE ABOVE) - ADDITIONAL PATCH REQUIRED

- Enterprise Manager Fusion Middleware Control Login Fails after Installing or Upgrading to Java 8u331 (or later - April 2022 CPU or later) (Doc ID 2865508.1)

#	Size	File	Description	Patch #
11	145K	p34065178_122140_Generic.zip	Required FMW Control Patch	34065178

8.5 Pre-requisites for all the above patches

8.5.1 Ensure that ORACLE_HOME is set properly.

```
$ export ORACLE_HOME=$MW_HOME
```

8.5.2 Verify OPatch is 13.9.4 or later

```
$ $MW_HOME/OPatch/opatch version
OPatch Version: 13.9.4.2.1
OPatch succeeded.
```

8.5.3 Validate the OUI inventory with the following commands:

```
$ $MW_HOME/OPatch/opatch lsinventory -jre $ORACLE_HOME/oracle_common/jdk/jre
Oracle Interim Patch Installer version 13.9.4.2.1
Copyright ...
Oracle Home       : .../OASMW
Central Inventory : .../app/oraInventory
   from           : .../OASMW/oraInst.loc
OPatch version    : 13.9.4.2.1
OUI version       : 13.9.4.0.0
Log file location : .../OASMW/cfgtoollogs/opatch/opatch.....
OPatch detects the Middleware Home as ".../oracle/OASMW"
lsinventory Output file location : .../oracle/OASMW/cfgtoollogs/opatch/lsinv/lsinventory...

--------------------------------
Local Machine Information::
Hostname: oas.example.com
ARU platform id: ...
ARU platform description:: ...
```

8.5.4 For each patch, follow these standard Oracle patch procedures:

Create a location for storing the unzipped patch:
This location will be referred to later in the document as PATCH_TOP.
Installation Instructions
1. Unzip the patch zip file into the PATCH_TOP.
$ unzip -d PATCH_TOP p******.zip
2. Set your current directory to the directory where the patch is located.
$ cd PATCH_TOP/33618954
3. Run OPatch to apply the patch.
$ opatch apply

8.5.5 If the version of Opatch being used is no longer valid

```
$ $MW_HOME/OPatch/opatch apply
Oracle Interim Patch Installer version 13.9.4.2.1
Copyright (c) 2022...
Oracle Home       : .../OASMW
Central Inventory : .../app/oraInventory
   from           : /u01/oracle/OASMW/oraInst.loc
OPatch version    : 13.9.4.2.1
OUI version       : 13.9.4.0.0
Log file location : .../OASMW/cfgtoollogs/opatch/opatch...
OPatch detects the Middleware Home as ".../OASMW"
erifying environment and performing prerequisite checks...
Prerequisite check "CheckMinimumOPatchVersion" failed.
The details are:
The OPatch being used has version 13.9.4.2.1 while the following patch(es) require higher
versions:
Patch 33618954 requires OPatch version 13.9.4.2.5.
Please download latest OPatch from My Oracle Support.
UtilSession failed: Prerequisite check "CheckMinimumOPatchVersion" failed.
Log file location: /u01/oracle/OASMW/cfgtoollogs/opatch/opatch...
OPatch failed with error code 73
```

8.5.6 Updating to latest Opatch

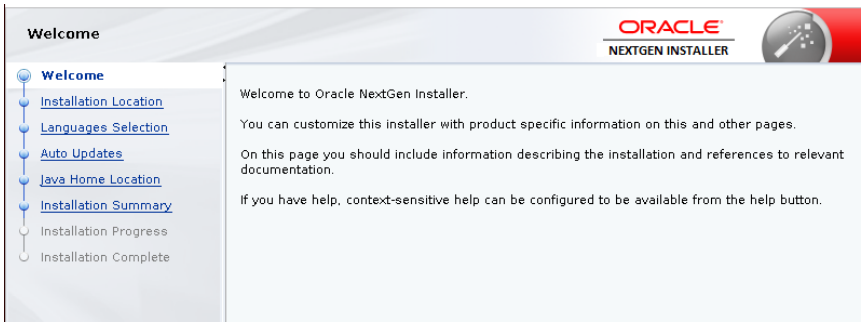
```
$ cd OPATCH/
$ unzip ../p28186730_139428_Generic.zip
Archive:  ../p28186730_139428_Generic.zip
   creating: 6880880/
  inflating: 6880880/README.txt
  inflating: 6880880/opatch_generic.jar
  inflating: 6880880/version.txt
$ cd 6880880/
[oracle@emdev-secfwk2 6880880]$ ls -CF
opatch_generic.jar*  README.txt*  version.txt*
$ more README.txt
PATCH 28186730 - OPATCH 13.9.4.2.8 FOR ...
......
```

8.5.7 Follow the instructions in the rest of the README.txt

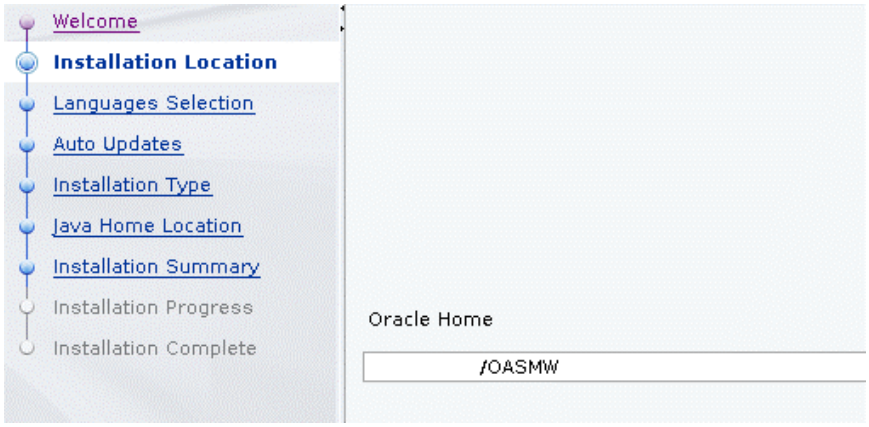
```
$ java -jar opatch_generic.jar
Launcher log file is ...
Extracting the installer . . . . . Done
Checking if CPU speed is above 300 MHz   Actual 2935.235 MHz                    Passed
Checking monitor: ...     to display at least 256 colors.   Actual 16777216    Passed
Checking swap space: must be greater than 512 MB.   Actual 15257 MB           Passed
Checking if this platform requires a 64-bit JVM. Actual 64                    Passed
                                                              (-d64 flag is not required)
Checking temp space: must be greater than 300 MB.   Actual 38870 MB           Passed
Preparing to launch the Oracle Universal Installer from ...
```

8.5.8 Utilize the Next Gen Installer to update Opatch

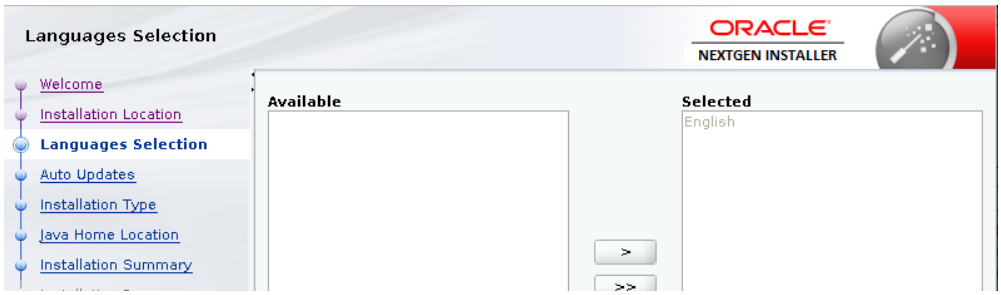
8.5.8.1 Step 1 – Welcome



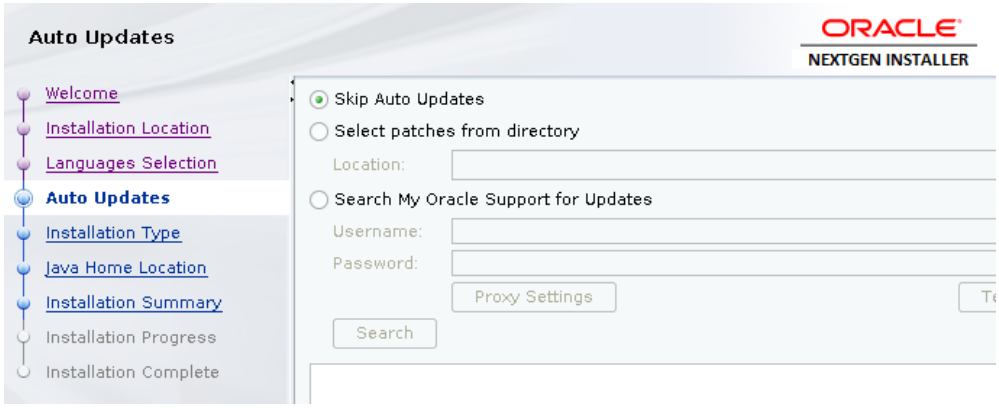
8.5.8.2 Step 2 – Choose Oracle Home



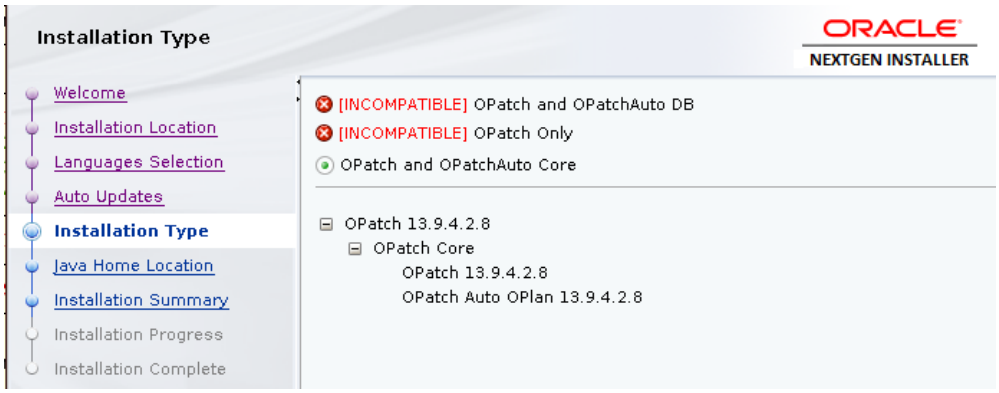
8.5.8.3 Step 3 – Language Selection



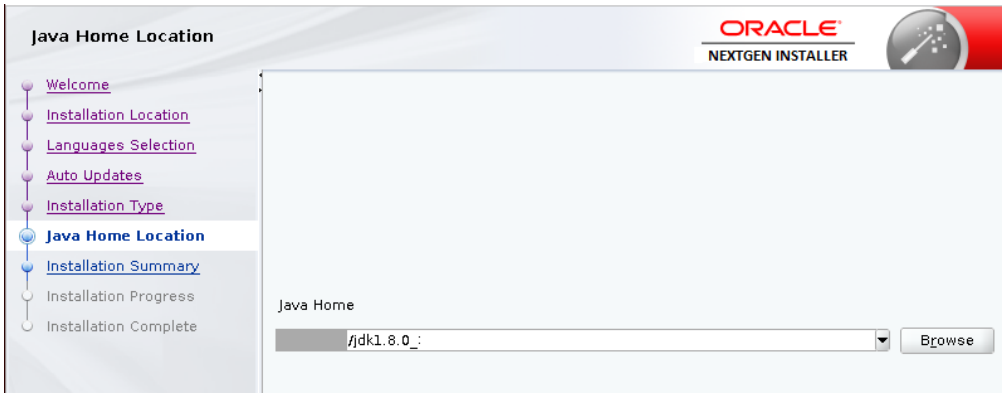
8.5.8.4 Step 4 – Skip Auto Updates



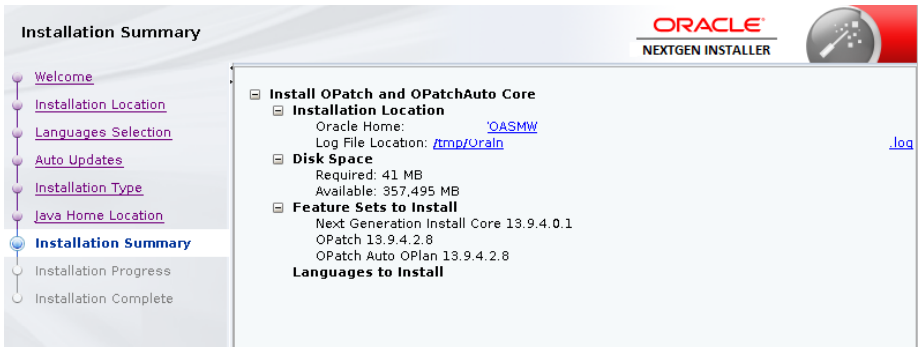
8.5.8.5 Step 5 – Installation Type



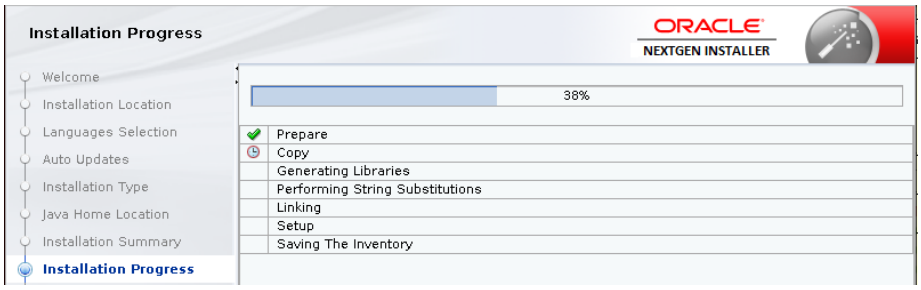
8.5.8.6 Step 6 – Java Home Location



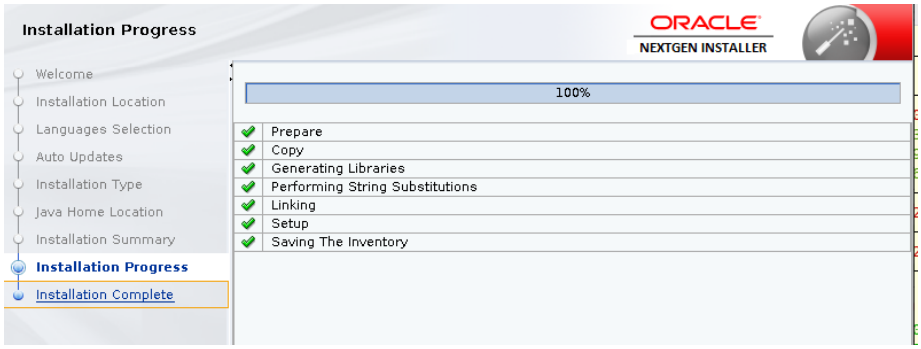
8.5.8.7 Step 7 – Installation Summary



8.5.8.8 Step 8 – Installation Progress



....



...

8.5.8.9 Step 9 – Installation Complete

8.6 Proceed with Individual Patches

8.6.1 Patch 1: p33618954_122140_Generic.zip - Required WSM Bundle Patch - 33618954

```
$ export ORACLE_HOME=$MW_HOME
$ cd ...../33618954
$ $MW_HOME/OPatch/opatch apply
Oracle Interim Patch Installer version 13.9.4.2.8
Copyright (c) ...
Oracle Home       : .../OASMW
Central Inventory : .../app/oraInventory
   from           : .../OASMW/oraInst.loc
OPatch version    : 13.9.4.2.8
OUI version       : 13.9.4.0.0
Log file location : .../OASMW/cfgtoollogs/opatch/opatch...
OPatch detects the Middleware Home as ".../OASMW"
Verifying environment and performing prerequisite checks...
OPatch continues with these patches:   33618954
Do you want to proceed? [y|n] y
User Responded with: Y
All checks passed.
Please shutdown Oracle instances running out of this ORACLE_HOME on the local system.
(Oracle Home = '.../OASMW')
Is the local system ready for patching? [y|n] y
User Responded with: Y
Backing up files...
Applying interim patch '33618954' to OH '/u01/oracle/OASMW'
Patching component oracle.wsm.common, 12.2.1.4.0...
Patching component oracle.wsm.common, 12.2.1.4.0...
Patching component oracle.wsm.pmlib, 12.2.1.4.0...
Patching component oracle.osdt.core, 12.2.1.4.0...
Patching component oracle.wsm.jrf, 12.2.1.4.0...
Patching component oracle.wsm.agent.wls, 12.2.1.4.0...
Patch 33618954 successfully applied.
Log file location: .../OASMW/cfgtoollogs/opatch/opatch...
OPatch succeeded.
$
```

8.6.2 Patch 2: p18143322_1800_Linux-x86-64.zip - Java JDK-8u333 - 18143322

```
$ export ORACLE_HOME=$MW_HOME
$ cd ...../p18143322/
$ ls -CF
jdk-8u333-linux-x64.rpm*     jre-8u333-linux-x64.rpm*     readme.txt*
jdk-8u333-linux-x64.tar.gz*  jre-8u333-linux-x64.tar.gz*  server-jre-8u333-linux-x64.tar.gz*
$ more readme.txt
...
Note:
Installation instructions and Documentation is available with the JDK readme.
#
# ➔ Proceed to install updated java using local operating system
# ➔ conventions (for example, /usr/local/java, rpm, etc...)
# You should install the full JDK (i.e. "jdk-8u333-linux-x64")
...
...
...
$ java -version
java version "1.8.0_333"
Java(TM) SE Runtime Environment (build 1.8.0_333-b26)
Java HotSpot(TM) 64-Bit Server VM (build 25.333-b26, mixed mode)
$ javac -version
javac 1.8.0_333
```

8.6.3 Patch 3: p34080315_122140_Generic.zip - WLS_SPB_12.2.1.4.220418 – 34080315

8.6.3.1 Execute required precheck phase and correct any errors encountered.

```
$ export ORACLE_HOME=$MW_HOME
$ cd ...../33618954
$ #
$ # Study the README.html
$ #   Oracle recommend using SPBAT automation.
$ #       NOTE: By default SPBAT needs write access to the current directory.
$ #             Therefore, ensure you have a local copy of this whole
$ #             directory hierarchy.
$
$
$ ./spbat.sh -phase precheck -oracle_home $ORACLE_HOME
SPBAT Release Version: 2.0.2
The current patching user oracle matches with the product install user oracle
-log_dir value is not set, defaulting it to
..../p34080315/WLS_SPB_12.2.1.4.220418/tools/spbat/generic/SPBAT/logs
...
...
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
PRECHECK SUMMARY:
No Of FAILURES: 0
No Of WARNINGS: 0
[2022-06-16_10-20-23] Log file : .../tools/spbat/generic/SPBAT/logs/...
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
SPBAT precheck phase has completed successfully
Time Taken to run precheck phase:  00 hours 03 min 52 secs
```

8.6.3.2 Execute apply phase

```
$ ./spbat.sh -phase apply -oracle_home $ORACLE_HOME
SPBAT Release Version: 2.0.2
The current patching user oracle matches with the product install user oracle
-log_dir value is not set, defaulting it to ...
Do not close this terminal as SPBAT apply phase is currently executing...
...
[2022-07-05_10-53-44] Middleware OPatch Version : 13.9.4.2.8
[2022-07-05_10-53-44] SPB OPatch version : 13.9.4.2.8
[2022-07-05_10-53-52] The environment already has the supported version of OPatch installed
[2022-07-05_10-54-01] List of patches present in the Oracle Home: ...../oracle/OASMW
33618954;OWSM BUNDLE PATCH 12.2.1.4.211129
31555397;One-off
31032676;One-off
30657796;One-off
[2022-07-05_10-54-01] Patch compatibility check with the environment is in progress...
[2022-07-05_10-55-18] CheckForNoOpPatches has Completed on /u01/oracle/OASMW Home
[2022-07-05_10-55-26] PATCH 33868012 APPLY WILL BE SKIPPED AS IT IS NOT APPLICABLE FOR THIS ENVIRONMENT
[2022-07-05_10-55-27] PATCH 34012040 IS #NOT APPLIED# IN THE ENVIRONMENT
[2022-07-05_10-55-27] PATCH 34080360 IS #NOT APPLIED# IN THE ENVIRONMENT
[2022-07-05_10-55-28] PATCH 1221413 IS #NOT APPLIED# IN THE ENVIRONMENT
[2022-07-05_10-55-28] PATCH 32647448 IS #NOT APPLIED# IN THE ENVIRONMENT
[2022-07-05_10-55-28] PATCH 33093748 IS #NOT APPLIED# IN THE ENVIRONMENT
[2022-07-05_10-55-29] PATCH 34077658 IS #NOT APPLIED# IN THE ENVIRONMENT
[2022-07-05_10-55-29] PATCH 32720458 IS #NOT APPLIED# IN THE ENVIRONMENT
[2022-07-05_10-55-29] Patch conflict check is in progress ...
[2022-07-05_10-55-40] Patch conflict check has completed on ..../oracle/OASMW Home
PRECHECK SUMMARY:
No Of FAILURES: 0
No Of WARNINGS: 0
[2022-07-05_10-57-23] Log file : ..../spbat-apply-emdev-secfwk2-2022-07-05_10-53-05.log
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
[2022-07-05_10-57-28] Application of patches is in progress ...
... NOTE: The application process takes a significant amount ot time...
[2022-07-05_11-04-41] SUCCESSFUL - OPatch napply has completed for wls Home
```

```
[2022-07-05_11-04-41] Opatch Napply Exit Status - 0
[2022-07-05_11-04-41] COMPLETED : Performing SPBAT Binary patching on wls Home
[2022-07-05_11-04-45] STARTED : Performing SPBAT binary audit on wls Home
[2022-07-05_11-04-55] NoOp patch#33868012# detected in Environment.Skipping Audit for the same
[2022-07-05_11-04-55] SUCCESSFUL - SPB PATCH 34012040 IS #APPLIED#
[2022-07-05_11-04-56] SUCCESSFUL - SPB PATCH 34080360 IS #APPLIED#
[2022-07-05_11-04-56] SUCCESSFUL - SPB PATCH 1221413 IS #APPLIED#
[2022-07-05_11-04-57] SUCCESSFUL - SPB PATCH 32647448 IS #APPLIED#
[2022-07-05_11-04-57] SUCCESSFUL - SPB PATCH 33093748 IS #APPLIED#
[2022-07-05_11-04-58] SUCCESSFUL - SPB PATCH 34077658 IS #APPLIED#
[2022-07-05_11-04-58] SUCCESSFUL - SPB PATCH 32720458 IS #APPLIED#
[2022-07-05_11-05-08] List of patches present in the Oracle Home: .../oracle/OASMW
34080360;WLS STACK PATCH BUNDLE 12.2.1.4.220418 (Patch 34080315)
34077658;RDA release 22.2-20220307 for OFM SPB
34012040;WLS PATCH SET UPDATE 12.2.1.4.220329
33093748;One-off
32720458;JDBC 19.3.0.0 FOR CPUJAN2022 (WLS 12.2.1.4, WLS 14.1.1)
32647448;Bug 31544353 - ADR FOR WEBLOGIC SERVER 12.2.1.4.0 JULY CPU 2020 for WebLogic Server SPB
1221413;Bundle patch for Oracle Coherence Version 12.2.1.4.13
33618954;OWSM BUNDLE PATCH 12.2.1.4.211129
31555397;One-off
31032676;One-off
30657796;One-off
[2022-07-05_11-05-08] Log file : ..../spbat-apply-emdev-secfwk2-2022-07-05_10-53-05.log
SPBAT apply phase has completed successfully
Time Taken to run apply phase:  00 hours 12 min 03 secs
Perform the post install actions as documented in the SPB README.txt
```

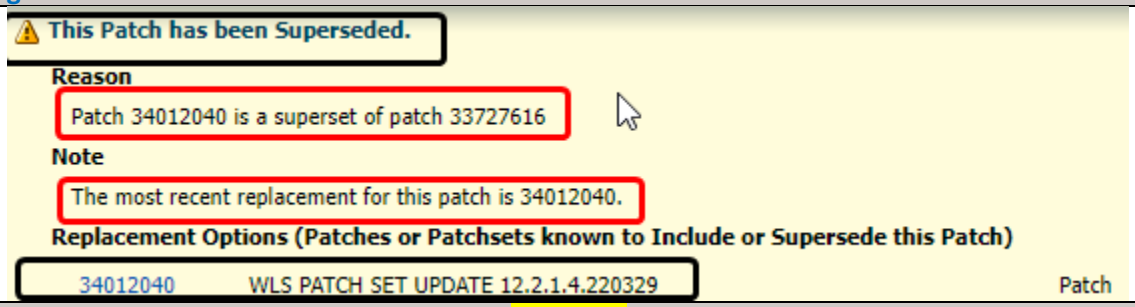
8.6.3.3 Post Installation Steps - Verify SPB Patches in ORACLE_HOME inventory

```
$ # the most popular generic installation will have a minimum of:
$ #     the WLS PSU
$ #     Coherence
$ #     ADR patches
$ $ORACLE_HOME/OPatch/opatch lspatches
34080360;WLS STACK PATCH BUNDLE 12.2.1.4.220418 (Patch 34080315)
34077658;RDA release 22.2-20220307 for OFM SPB
34012040;WLS PATCH SET UPDATE 12.2.1.4.220329
33093748;One-off
32720458;JDBC 19.3.0.0 FOR CPUJAN2022 (WLS 12.2.1.4, WLS 14.1.1)
32647448;Bug 31544353 - ADR FOR WEBLOGIC SERVER 12.2.1.4.0 JULY CPU 2020 for WebLogic Server SPB
1221413;Bundle patch for Oracle Coherence Version 12.2.1.4.13
33618954;OWSM BUNDLE PATCH 12.2.1.4.211129
31555397;One-off
31032676;One-off
30657796;One-off
OPatch succeeded.
```

8.6.4 Patch 4: p33735326_12214220105_Generic.zip - Required WLS Overlay Patch

```
$ cd ...../33735326
$ $MW_HOME/OPatch/opatch apply
This will fail, and indicate that patch 33727616 is to be applied.
```

We can ignore the failure:



We have applied the required patch 34012040 in 'section 8.6.3 - Patch 3: p34080315_122140_Generic.zip - WLS_SPB_12.2.1.4.220418 – 34080315'

```
[2022-07-05_11-04-55] SUCCESSFUL - SPB PATCH 34012040 IS #APPLIED#
```

8.6.5 Patch 5: p33791665_12214220105_Generic.zip - Required WLS Overlay Patch

```
$ export ORACLE_HOME=$MW_HOME
$ cd .../33791665/
$ $MW_HOME/OPatch/opatch apply
```

```
Same Error as in prior section.
Can be ignored
```

8.6.6 Patch 6: p33958532_122140_Generic.zip - Required ADF patch

```
$ export ORACLE_HOME=$MW_HOME
$ cd ...../33958532
$ $MW_HOME/OPatch/opatch apply
OPatch detects the Middleware Home as ".../oracle/OASMW"
Verifying environment and performing prerequisite checks...
OPatch continues with these patches:   33958532
Do you want to proceed? [y|n] Y
All checks passed.
Please shutdown Oracle instances running out of this ORACLE_HOME on the local system.
Is the local system ready for patching? [y|n] Y
User Responded with: Y
Backing up files...
Applying interim patch '33958532' to OH '/u01/oracle/OASMW'
ApplySession: Optional component(s) [ oracle.ide.usages.tracking, 12.2.1.4.0 ] , [
oracle.jdeveloper.fmw.internal.tools, 12.2.1.4.0 ] , [ oracle.ide.groovy, 12.2.1.4.0 ] , [
oracle.ide.help.extras, 12.2.1.4.0 ] , [ oracle.ide.modeler, 12.2.1.4.0 ] , [
oracle.ide.diagram, 12.2.1.4.0 ] , [ oracle.jdeveloper.studio, 12.2.1.4.0 ] , [
oracle.jdeveloper.studio, 12.2.1.4.0 ] , [ oracle.ide.webservice.analyzer, 12.2.1.4.0 ] , [
oracle.ide.java, 12.2.1.4.0 ] , [ oracle.ide.db.connection, 12.2.1.4.0 ] , [
oracle.ide.rescat2, 12.2.1.4.0 ] , [ oracle.ide.vhv, 12.2.1.4.0 ] , [ oracle.ide.fcp,
12.2.1.4.0 ] , [ oracle.ide.fcp, 12.2.1.4.0 ] , [ oracle.jdeveloper.spring, 12.2.1.4.0 ] , [
oracle.jdeveloper.bi.internal.tools, 12.2.1.4.0 ]  not present in the Oracle Home or a higher
version is found.
Patching component oracle.jrf.adfrt, 12.2.1.4.0...
Patching component oracle.org_dom4j_dom4j, 2.1.1.0.0...
Patching component oracle.org_dom4j_dom4j, 2.1.1.0.0...
Patch 33958532 successfully applied.
Log file location: ..../opatch2022-07-05_11-47-11AM_1.log
OPatch succeeded.
```

8.6.7 Patch 7: p34044738_122140_Generic.zip - Required third party CPUs

```
$ $MW_HOME/OPatch/opatch apply
Oracle Home       : ...
...
OPatch detects the Middleware Home as ".../oracle/OASMW"
Verifying environment and performing prerequisite checks...
OPatch continues with these patches:   34044738
Do you want to proceed? [y|n] y
User Responded with: Y
All checks passed.
Please shutdown Oracle instances running out of this ORACLE_HOME on the local system (Oracle Home='oracle/OASMW')
Is the local system ready for patching? [y|n] y
User Responded with: Y
Backing up files...
Applying interim patch '34044738' to OH '/u01/oracle/OASMW'
ApplySession: Optional component(s) [ oracle.org.springframework.spring.orm.vrelease,
4.3.20.0.0 ] , [ oracle.org.springframework.spring.orm.vrelease, 4.3.20.0.0 ] , [
oracle.org.springframework.spring.context.support.vrelease, 4.3.20.0.0 ] , [ ...
Patching component oracle.org.springframework.spring.aop.vrelease, 5.1.3.0.0...
...
...
Patching component oracle.org.springframework.spring.context.vrelease, 5.1.3.0.0...
Patch 34044738 successfully applied.
Log file location: .../oracle/OASMW/cfgtoollogs/opfatch/opatch.....log
OPatch succeeded.
```

8.6.8 Patch 8: p32784652_122140_Generic.zip - Required OPSS Patch

```
$ cd ...../32784652
$ $MW_HOME/OPatch/opatch apply
Oracle Interim Patch Installer version...
OPatch detects the Middleware Home as ".../oracle/OASMW"
Verifying environment and performing prerequisite checks...
OPatch continues with these patches:   32784652
Do you want to proceed? [y|n] y
User Responded with: Y
All checks passed.
Please shutdown Oracle instances running out of this ORACLE_HOME on the local system. (Oracle Home = '.../oracle/OASMW')
Is the local system ready for patching? [y|n] y
User Responded with: Y
Backing up files...
Applying interim patch '32784652' to OH '/u01/oracle/OASMW'
Patching component oracle.jrf.iau, 12.2.1.4.0...
Patching component oracle.jrf.iau, 12.2.1.4.0...
Patching component oracle.opss.core, 12.2.1.4.0...
Patch 32784652 successfully applied.
Log file location: /u01/oracle/OASMW/cfgtoollogs/opatch/opatch.....log
Patch succeeded.
```

8.6.9 Patch 9: p30613424_122140_Generic.zip - Required FMW Control Patch

```
$ cd ...../30613424
$ $MW_HOME/OPatch/opatch apply
Oracle Interim Patch Installer version 13.9.4.2.8
...
OPatch detects the Middleware Home as ".../oracle/OASMW"
Verifying environment and performing prerequisite checks...
OPatch continues with these patches:   30613424
Do you want to proceed? [y|n] y
User Responded with: Y
All checks passed.
Please shutdown Oracle instances running out of this ORACLE_HOME on the local system.(Oracle Home = '../oracle/OASMW')
Is the local system ready for patching? [y|n] y
User Responded with: Y
Backing up files...
Applying interim patch '30613424' to OH '/u01/oracle/OASMW'
Patching component oracle.sysman.fmw.core, 12.2.1.4.0...
lPatch 30613424 successfully applied.
Log file location: /u01/oracle/OASMW/cfgtoollogs/opatch/opatch2022-07-06_11-44-29AM_1.log
OPatch succeeded.
```

8.6.10 Patch 10: p33281560_122140_Generic.zip - Required Web Center Patch

```
$ export ORACLE_HOME=$MW_HOME
$ cd ...../33281560
$ $MW_HOME/OPatch/opatch apply
Oracle Interim Patch Installer...
OPatch detects the Middleware Home as ".../oracle/OASMW"
Verifying environment and performing prerequisite checks...
OPatch continues with these patches:   33281560
Do you want to proceed? [y|n] y
User Responded with: Y
All checks passed.
Please shutdown Oracle instances running out of this ORACLE_HOME on the local system.(Oracle Home = '/u01/oracle/OASMW')
Is the local system ready for patching? [y|n] y
User Responded with: Y
Backing up files...
Applying interim patch '33281560' to OH '/u01/oracle/OASMW'
Patching component oracle.webcenter.wccore, 12.2.1.4.0...
Patching component oracle.webcenter.wccore, 12.2.1.4.0...
Patch 33281560 successfully applied.
Log file location: ..../oracle/OASMW/cfgtoollogs/opatch/opatch2022-07-06_12-02-49PM_1.log
OPatch succeeded.
```

8.6.11 Patch 11: p34065178_122140_Generic.zip – Required FMW Patch due to JDK Update

```
$ export ORACLE_HOME=$MW_HOME
$ cd ...../34065178
$ $MW_HOME/Opatch/opatch apply
Oracle Interim Patch Installer...
OPatch detects the Middleware Home as "..../oracle/OASMW"
Verifying environment and performing prerequisite checks...
OPatch continues with these patches:   34065178
Do you want to proceed? [y|n] y
User Responded with: Y
All checks passed.
Please shutdown Oracle instances running out of this ORACLE_HOME on the local system.(Oracle Home = '.../oracle/OASMW')
Is the local system ready for patching? [y|n] y
User Responded with: Y
Backing up files...
Applying interim patch '34065178' to OH '/u01/oracle/OASMW'
Patching component oracle.ids.core, 12.2.1.4.0...
Patch 34065178 successfully applied.
Log file location: ..../oracle/OASMW/cfgtoollogs/opatch/opatch2022-08-30_11-48-03AM_1.log
OPatch succeeded.
```

8.7 Configure OAS – Ensure only to configure 'Oracle Analytics Publisher'

For full details, see (Configuring Oracle Analytics Server, 2021) reference

```
$ cd $MW_HOME/bi/bin
$ ./config.sh
```

» Some highlighted Requirements:

» Ensure to use the default domain name (**bi**).

» Make sure no other Fusion Middleware products are running on the same physical host.

» By convention, the schema prefix for the OAS required database schema shall be '**oas'.**

A NOTE ON THE REQUIREMENT OF A SEPARATE SYSTEM FOR ORACLE ANALYTICS SERVER

As part of the development of this guide, specific research on the system requirements for the standalone Oracle Analytics Server was undertaken.

The result of this research is a requirement for a separate system for Oracle Analytics Server, distinct from any system(s) that may be hosting Enterprise Manager.

Some of the details uncovered are:

- There are complexities involved in running multiple WebLogic applications on the same physical host.
  - This is true even if these WebLogic applications are installed into separate Oracle Homes and separate WebLogic Domains.
  - The main incompatible interaction is related to the Coherence Cluster Unicast TCP/IP Listen Port.
  - A WebLogic domain is created with a hard-coded, default value, for this port.
    - This is true for any Fusion Middleware Product.
    - This includes both Enterprise Manager and Oracle Analytics Server.
  - As a result, one, or both, of these extremely undesirable consequences are evident:
    - Oracle Analytics Server **configuration** will fail.
    - Enterprise Manager will fail to start, or restart.
- Beyond these specific issues, there is a larger issue associated with **best practice** system design.
- Of note, hosting two distinct products on the same system:
  - Greatly complicates life cycle management of Enterprise Manager.
  - Differing High availability requirements between Enterprise Manager and Oracle Analytics Server.

- It is imperative that in 'step 2 – configuration', shown on the next page, only the 'Oracle Analytics Publisher' component is configured.
- If the 'Oracle Analytics Server' product is also configured, it will not be possible to login to OAS an an Enterprise Manager administrator (when using the database security model).
- There will also be issues in running any reports, since the target-level privilege model will not function as intended.

OAS Configuration Screenshots

8.7.1 Step 1 - Welcome Screen

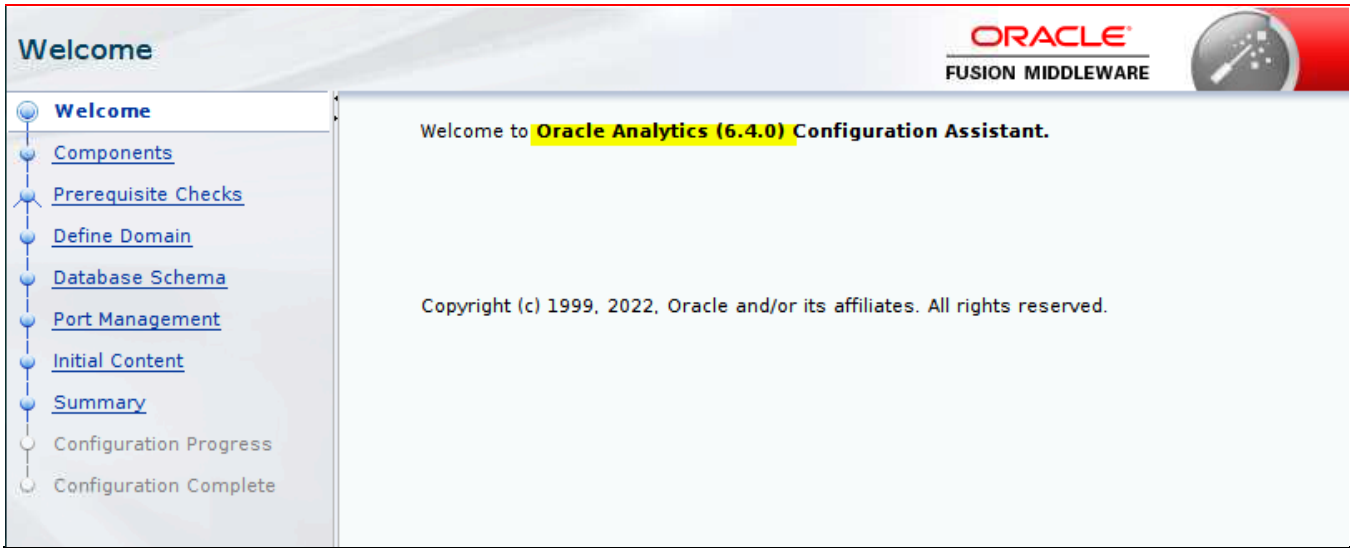


Figure 3. Step 1 of 10: Start OAS Configuration

8.7.2 Step 2 – Configuration

- Be sure to only select Oracle Analytics Publisher.

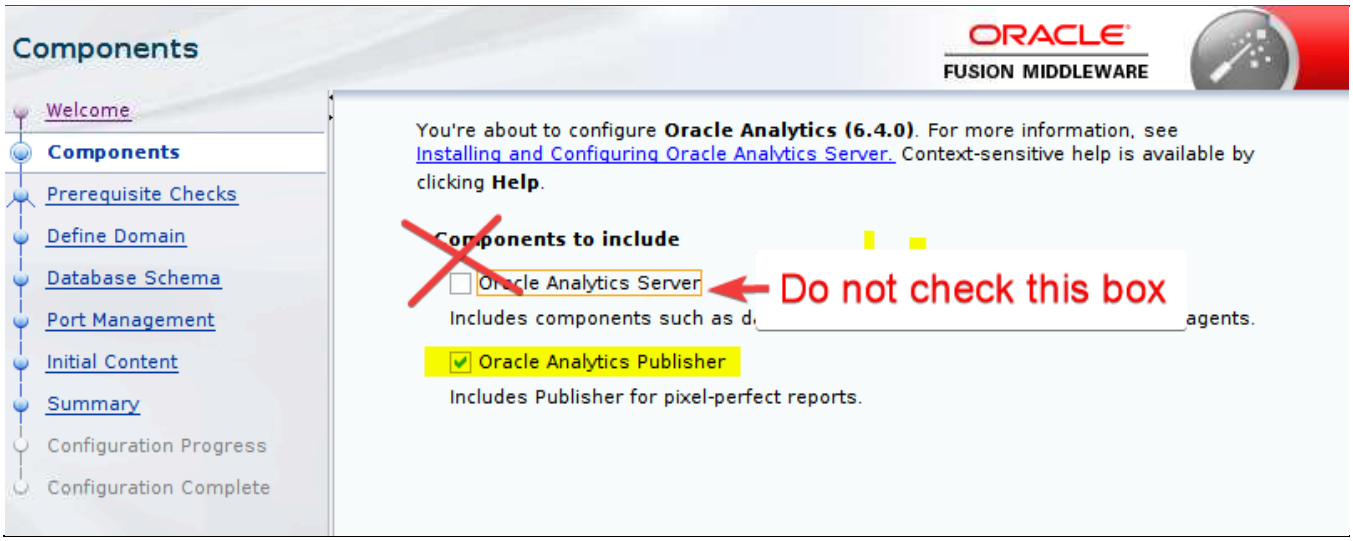


Figure 4. Step 2 of 10: Only configure Oracle Analytics Publisher

*NOTE: It is extremely important to only select "**Oracle Analytics Publisher**"*

8.7.3 Step 3 - Prerequisite Checks

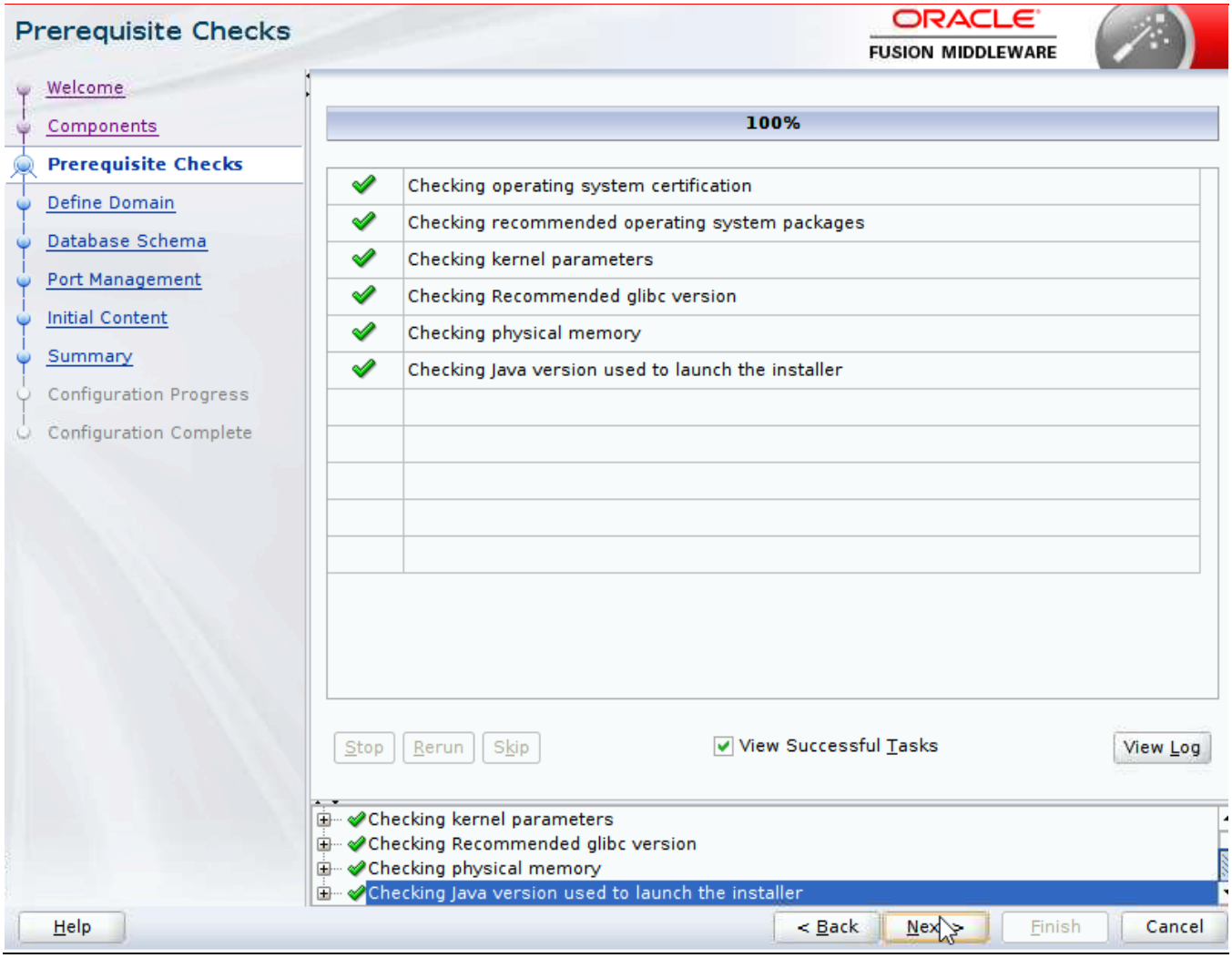


Figure 5. Step 3 of 10: Prerequisite Checks

» Make sure that all Prerequisite checks pass.

» Click next

8.7.4 Step 4 - Define Domain

- For this example, the MW_HOME for OAS is chosen as:
  `<stagedir>/OASMW`
- The domain is chosen as:
  `bi`
- And the domain is chosen as:
  `<stagedir>/OAS/user_projects/domains/bi`
- Provide the required domain credential:
  Username: `weblogic`
  Password: `*******`
- Click next

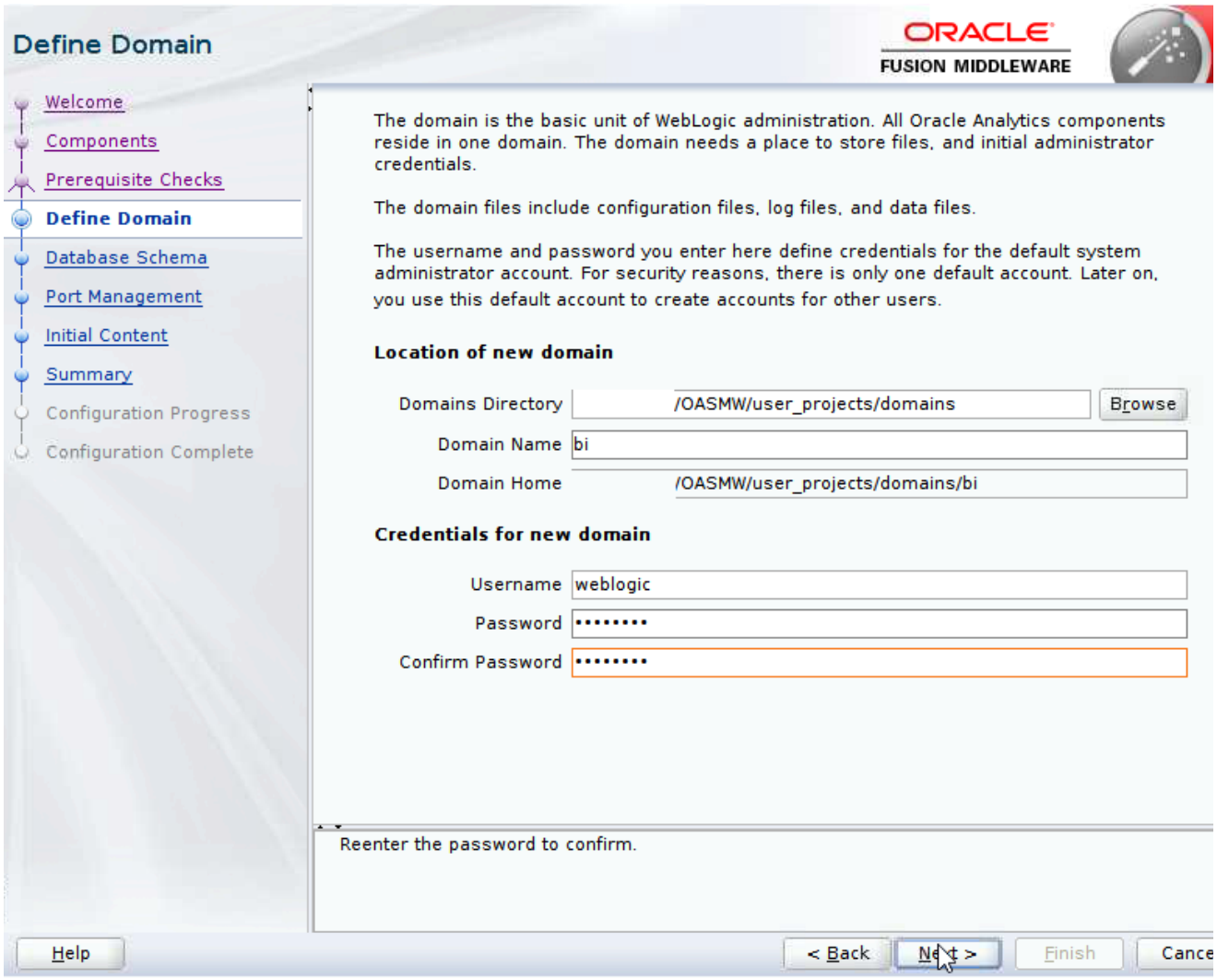


Figure 6. Step 4 of 10: Define Domain

8.7.5 Step 5 - Database Schema

- The best practice is to choose the schema prefix:
  `oas`
- The OAS schema can be installed either on a dedicated Oracle RDBMS or co-located on the same database, or pluggable database, utilized for the Enterprise Manager Repository.
  - An Example of a dedicated OAS DBMS connect descriptor:
    `oasrepos.example.com:1521:orclpdb.us.oracle.com`
- It can be challenging to enter the correct syntax for the Simple connect string.

> *Please consult relevant Oracle DBMS documentation, as well as Oracle Analytics documentation.* [20]

- Please consult 'Appendix J - Details on the JDBC Simple Connect for more details.

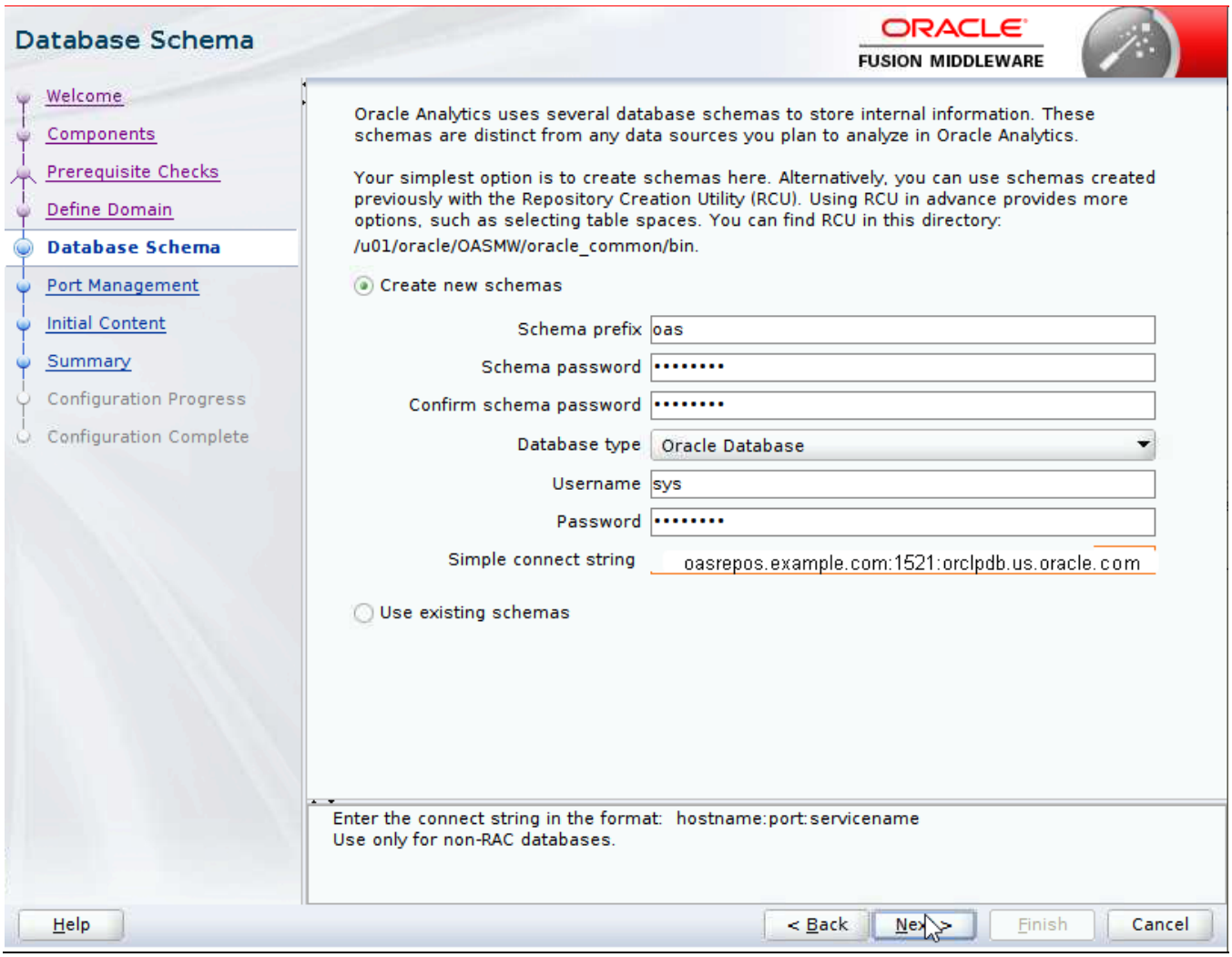


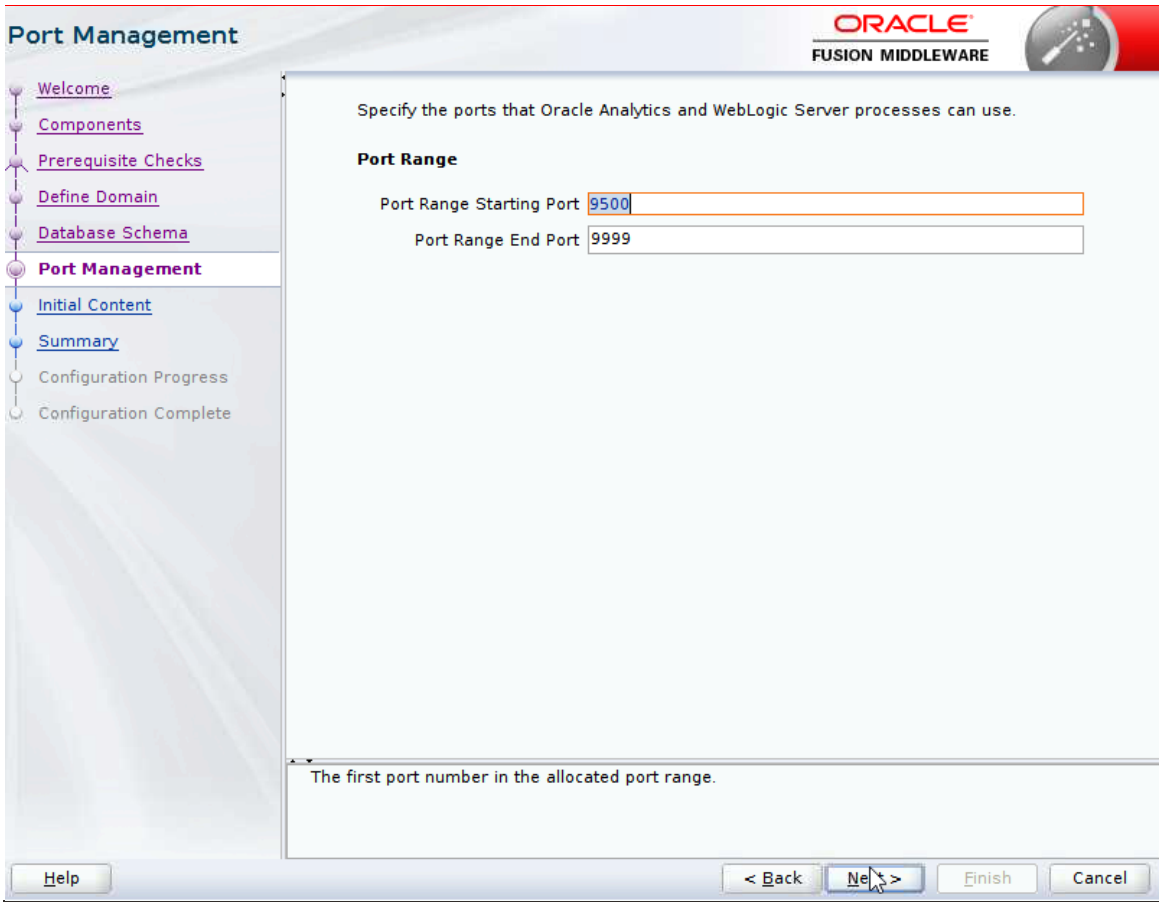
Figure 7. Step 5 of 10: Database Details

[20] Configuring the Oracle Analytics Server Domain with the Configuration Assistant

8.7.6 Step 6 - Port Management

- This guide uses the default ports:

```
Port Range Starting Port:9500

Port Range End Port:9999
```



» The default ranges from 9500 to 9999 should be adequate.

Figure 8. Step 6 of 10: Port management

8.7.7 Step 7 - Initial Application

- Make sure to leave the default setting of clean installation (default)

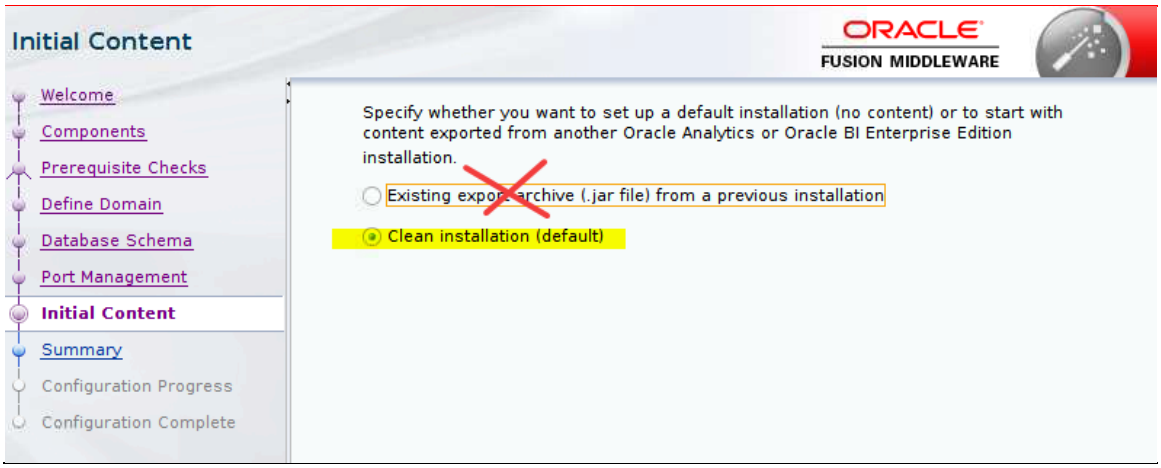


Figure 9. Step 7 of 10: Initial Application

8.7.8 Step 8 – Summary

- Make sure that just Oracle Analytics Publisher is shown for the Components being configured.

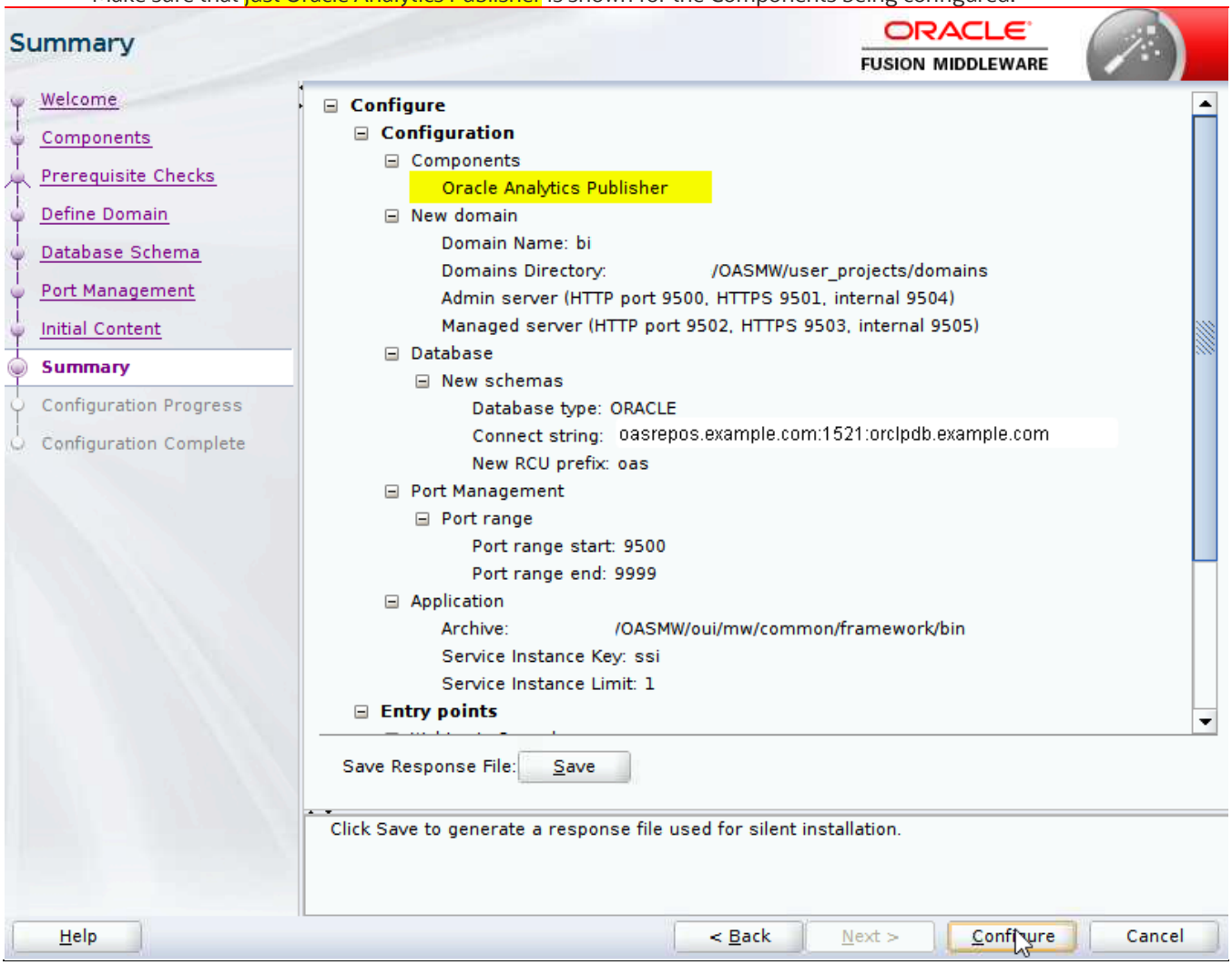
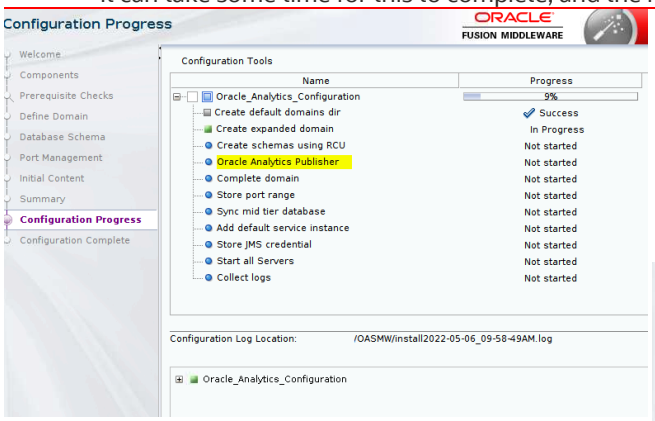


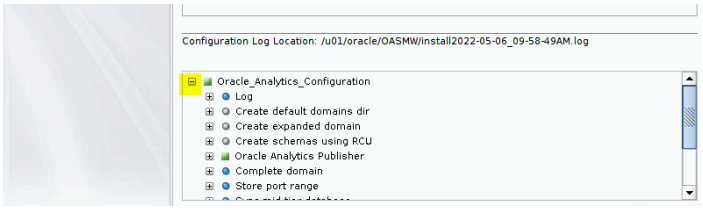
Figure 10. Step 8 of 10: Summary

- As soon as the **Configure** button is pressed, the configuration process begins.

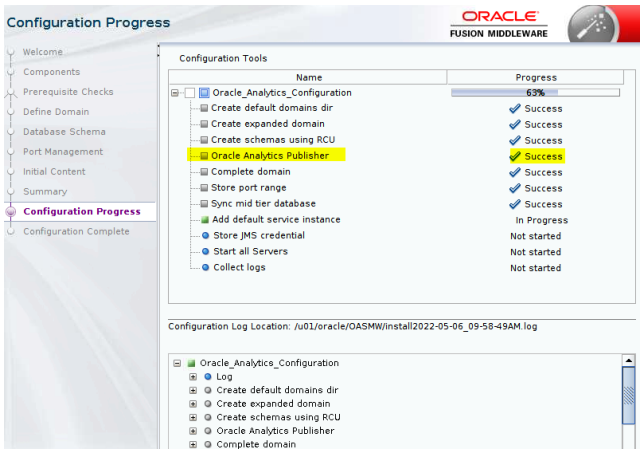
8.7.9 Step 9 - Configuration Progress

- It can take some time for this to complete, and the real-time status can be monitored, as shown below.





• • •



• • •

```
$ cd $MW_HOME
$ ls -CF
bi/                    ...   jlib ......  config2022...
$ cd config2022...
$ tail -f startallservers.log
NodeManager started
Reading domain...
/Servers/AdminServer/ListenPort=9500
Accessing admin server using URL
t3://oas1.example.com:9500
Starting AdminServer ...
nmStart(AdminServer) succeeded
Storing encrypted AdminServer credentials: adminServerUserConfig...
Setting restart interval for all system components to default 3600...
Starting all servers ...
Starting bi_server1 (Original State:SHUTDOWN) ...
NMProcess: ...oracle.dms.cam.metrics.LocalDmsChannel ...
NMProcess: INFO: DMS... DMS ...
Started bi_server1
Set runtime log level...
Setting oracle.wsm ...WARNING:1 for server: bi_server1
Finished starting servers
^C
```

• • •

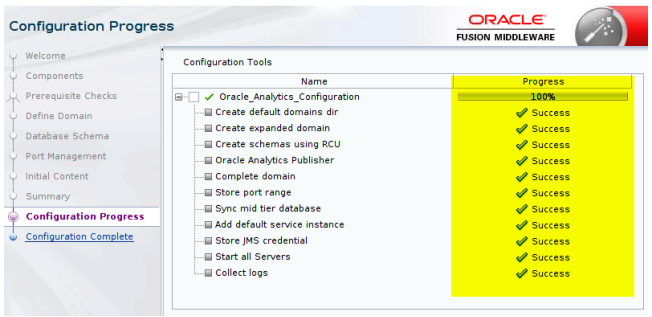


Figure 11. Step 9 of 10: Configuration Progress

8.7.10 Step 10 - Configuration Complete

When the configuration is complete, details of the environment are presented below.

- Please take note of these, as they are required in order to utilize OAS.
- The key items to verify are outlined, and are shown below:
  - Components: Oracle Analytics Publisher
  - Domain Name: bi
  - Admin Server: HTTP Port 9500
    - http://oashost.example.com:9500/em
    - http://oashost.example.com:9500/console
  - Managed Server: HTTP Port 9502
    - http://oashost.example.com:9502/xmlpserver/servlet/home
  - Connect String: oasrepos.example.com:1521:orcl.example.com
- New RCU prefix: oas

Once verified, click Finish

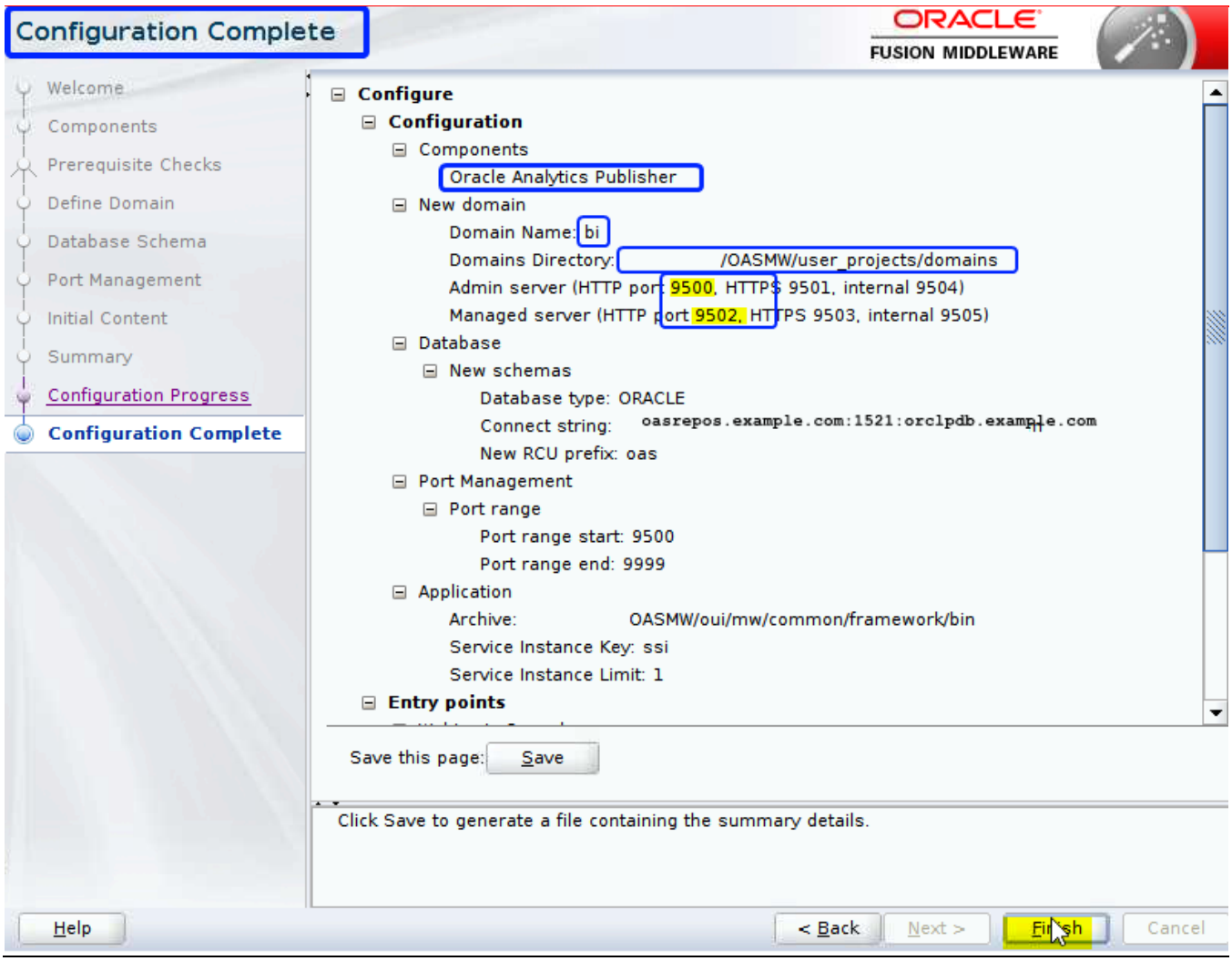


Figure 12. Step 10 of 10: Configuration Complete

CHAPTER 9. OAS SECURITY CONFIGURATION

This chapter provides an overview of the remaining configuration steps, which are somewhat complex.

BEFORE BEGINNING THE PROCEDURES DOCUMENTED IN THIS HANDBOOK, DOWNLOAD ANY CUSTOMIZED BIP REPORTS FROM THE EMBEDDED BIP IN EM 13.4, USING THE BIP USER INTERFACE.

There are two distinct OAS security models that are fully documented below.

Each of these two OAS security models map directly to a corresponding Enterprise Manager Security Configuration.

- A single installation of OAS can only support one of the two security models below at any given time.

EM SECURITY CONFIGURATION	OAS SECURITY MODEL AND ADDITIONAL REQUIRED STEPS
1. Enterprise Manager Repository-based security ▪ Out of box configuration	OAS Database Security Model ▪ Additional steps: 1. Configure OAS for Database Security Model. 2. On EM Repository DBMS, perform DBMS role assignments.
2. LDAP ~~a.~~ Without ~~Single Sign On~~ (SSO) b. With Single Sign On (SSO)	OAS Fusion Middleware Security Model ▪ Additional steps: 1. Ensure OAS is configured for Fusion Middleware Security Model. 2. On OAS WebLogic Domain: a. WebLogic Authentication Provider configuration. b. Fusion Middleware Control Application Role assignments. c. Edits to Java Platform Services (JPS) configuration file. 3. Further configuration Steps for SSO on OAS WebLogic Domain: a. Additional WebLogic Authentication provider configuration. b. Installation of Oracle HTTP Server (OHS). c. Configuration of OHS with Oracle Webgate. d. Oracle Access Manager (OAM) configuration. e. Ensure OAS is a partner OAM application. f. Edits to OHS Configuration files.

Table 5. OAS Security Configuration Steps

In order to change the OAS Security Model, access to the OAS **Administration** link, and the subsequent **Administration screens**, as shown in 'Figure 17 - Administration Screens and Security Center. Needed for Security Configuration', it is necessary to login to OAS as a user with the required permissions to access these pages.

When OAS is initially installed, the **OAS Fusion Middleware security model** is configured by default.

In this configuration, the **weblogic** user will always be available, with the password that was chosen during OAS configuration. See 'section 8.7.4 - Step 4 - Define Domain'.

Additionally, the **weblogic** user will by default have the required permissions to access the **Administration screens**.

If mistakes are made, and login to OAS using standard procedures is unavailable, or no user has the required permissions to access to the **Administration** link (and subsequent **Administration screens)**, then there is no way to resolve issues using the OAS user interface and manual edits to XML configuration files would be required.

Given this, it is strongly recommended to enable the internal **Superuser** during these initial configuration steps.

This special **Superuser** does not rely on any underlying OAS security model, but instead utilizes the simpler file-based security model that is built-in to OAS.

For simplicity and proper management of OAS, ensure that the username chosen for this internal OAS Super User does not overlap with a *real* Enterprise Manager (or LDAP) user.

For example, do not use the name **sysman.**

9.1 Oracle Analytics Publisher Authentication and Report Execution Flow

There are four main interactions that all Enterprise Manager Administrators will utilize when Oracle Analytics Publisher is accessed.

1. Oracle Analytics Server Authentication
2. Oracle Analytics Server User Interface Capabilities.
3. Oracle Analytics Server Catalog Access.
4. Oracle Analytics Server Report Execution.

9.1.1 OAS Authentication

As specified above, for Enterprise Manager 13.5, two main mechanisms for user authentication are provided:

1. Enterprise Manager Repository-based Security
2. LDAP, with or without SSO, based upon Fusion Middleware Security Providers.

9.1.2 OAS User Interface Privileges

OAS supports three hierarchical levels of User Interface Privileges.

As the levels below are followed, they are additive.

All capabilities from level 1 are available in level 2, and all capabilities from level 1 and level 2 are available in level 3, and all capabilities from levels 1,2, and 3, are available in level 4.

#	DESCRIPTION	DBMS ROLE EM REPOSITORY BASED	LDAP ROLE WITH OR WITHOUT SSO
1	View and execute OAS Reports.	MGMT_USER	BI Consumer
2	Schedule OAS Reports	XMLP_SCHEDULER	BI Consumer: *Includes*
3	Author OAS Reports (and manipulate catalog objects, see next table).	XMLP_DEVELOPER	BI Author
4	Administer OAS ○ Manage and maintain the OAS Security Model. ○ Manage and maintain the OAS Data Source Configuration (i.e., EMREPOS, EMREPOS2, etc.) ○ Manage and maintain the OAS Scheduler. ○ General OAS System Administration.	XMLP_ADMIN	BI Administrator

Table 6. OAS Privileges

9.1.3 OAS Server Catalog Access

The same Role Names specified above are also utilized to provide varying levels of access to each OAS Catalog Object (reports, Datamodels, folders).

Typically, these Role Names are applied in a similar hierarchical manner as User Interface Level Access.

This works out as below:

#	DESCRIPTION	DBMS ROLE EM REPOSITORY BASED	LDAP ROLE LDAP, WITH OR WITHOUT SSO
1	• View Reports, and corresponding Datamodels. • Expand Folder Nodes. • Execute Reports (not applicable to Datamodels).	MGMT_USER	BI Consumer
2	• Schedule OAS Reports.	XMLP_SCHEDULER	*BI Consumer* *(There is no separate FMW Scheduler Role by default)*
3	• Edit, Cut/Copy/Paste/Delete OAS Catalog Objects (i.e., Reports, Datamodels, and folders).	XMLP_DEVELOPER	BI Author
4	• Full Capabilities on all Catalog Objects	XMLP_ADMIN	BI Administrator

Table 7. OAS Catalog Permissions

9.1.4 OAS Report Execution

Once an Enterprise Manager Administrator is logged into OAS, and has access to an OAS Report, the report itself can be executed (or scheduled).

When an OAS Report Executes, the execution model from Enterprise Manager 13.4 is maintained.

That is, for a given user logged into OAS, OAS Reports will only have target-level access to those Enterprise Manager Targets that that EM Administrator normally would have access to.

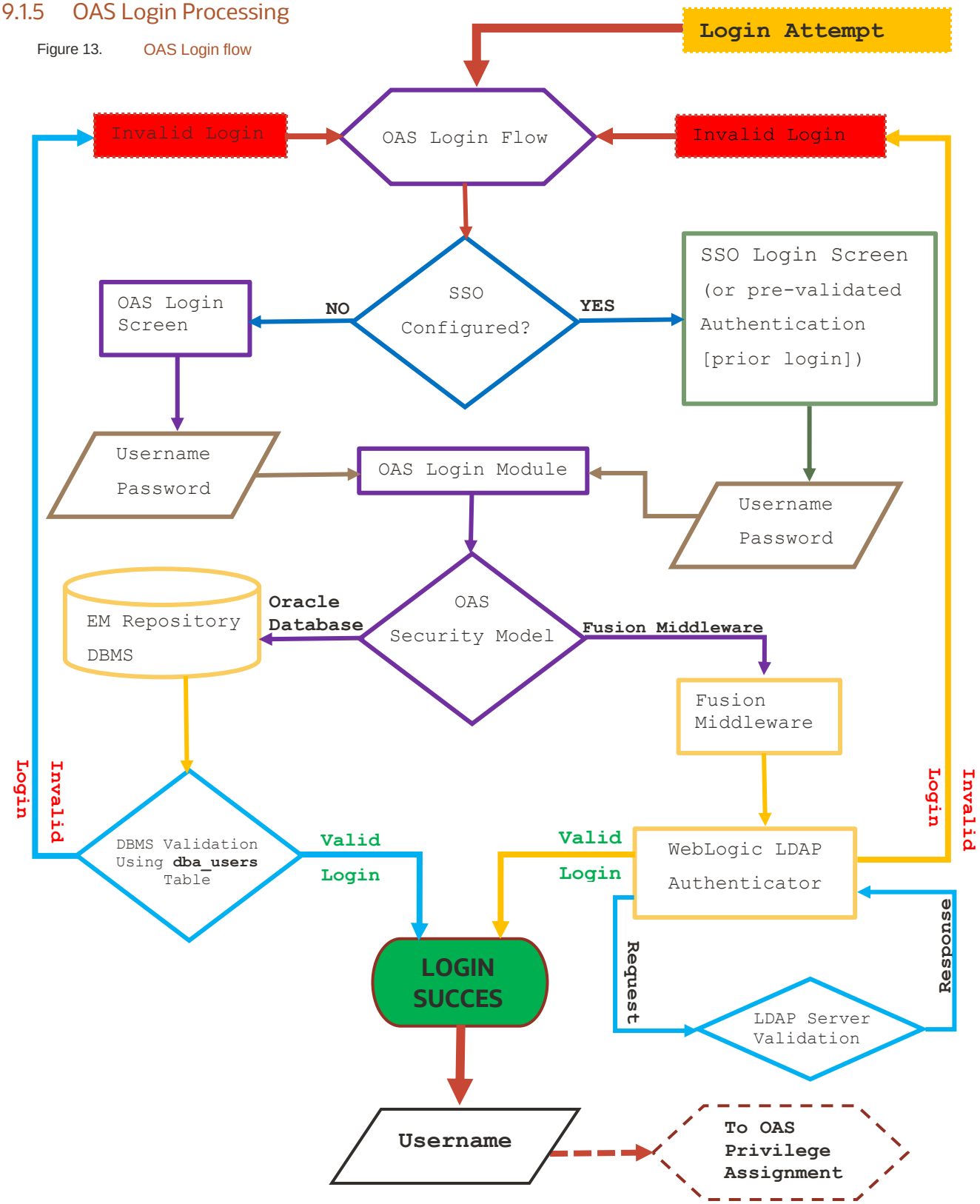
In this way, EM Data can be viewed inside of OAS with the same visibility as when utilizing the Enterprise Manager Console directly.

The following two sections provide a flow chart of the two main components of OAS Report Execution.

1. OAS Login Flow – Valid or invalid credentials provided.
2. OAS *privilege* assignment – If a user is valid, associate roles.

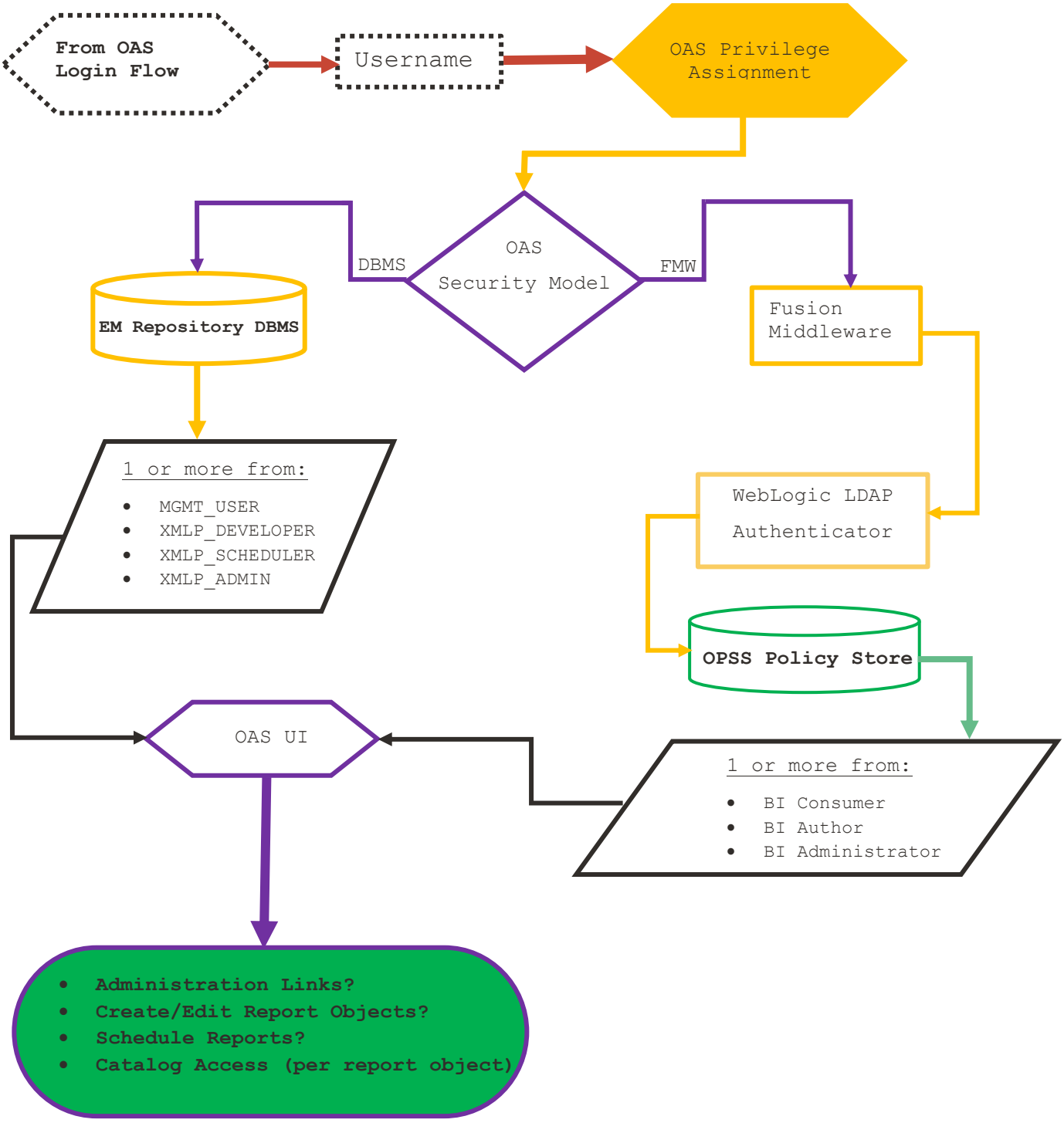
9.1.5 OAS Login Processing

Figure 13. OAS Login flow



9.1.6 OAS Privilege Assignment

Figure 14. OAS Privilege Assignment flow



CHAPTER 10. OAS FOR EM REPOSITORY-BASED SECURITY

As discussed earlier, the standalone OAS is to be configured either using OAS Database Security Model or the OAS Fusion Middleware Security Model.

This chapter details the steps for the OAS Database Security Model. If utilizing the Fusion Middleware Security Model, skip to 'Chapter 11 - OAS LDAP Configuration – Enterprise Manager parity'.

From this point forward, the required steps are complex, and somewhat error prone.

This chapter details configuration of the standalone OAS against an Enterprise Manager Installation using the default security configuration of 'Repository based Authentication'.

For this configuration of EM, the OAS '**Database Security Model**' is utilized.

The referenced database for iem 3 above will not necessarily be the same as items 1 and 2.

10.1 Create required DBMS roles and grant to required EM administrators.

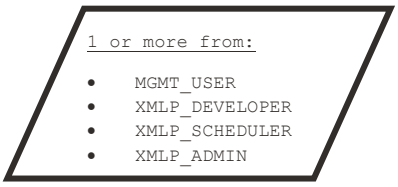
Create the required roles, and minimal role grants, on the Enterprise Manager repository database:

```
$ sqlplus sys/●●●●●● as sysdba
sql> REM Create base roles
sql> create role XMLP_ADMIN;
sql> create role XMLP_DEVELOPER;
sql> create role XMLP_SCHEDULER;
sql>
sql> REM Create Role Hiearchy
sql> grant XMLP_DEVELOPER to XMLP_ADMIN;
sql> grant XMLP_SCHEDULER to XMLP_ADMIN;
sql> grant MGMT_USER to XMLP_ADMIN;
sql>
sql> grant XMLP_SCHEDULER to XMLP_DEVELOPER;
sql> grant MGMT_USER to XMLP_DEVELOPER;
sql>
sql> REM Sysman gets super admin
sql> grant XMLP_ADMIN to sysman;
sql> exit;
```

When additional Enterprise Manager users need OAS permissions beyond basic report viewing, one or more of the above roles will need to be granted to them. For example:

```
$ sqlplus sys/●●●●●● as sysdba
sql> REM Grant any required roles to individual EM Administrators
sql> grant XMLP_DEVELOPER to USER1;
sql> grant XMLP_SCHEDULER to USER2;
sql> exit;
```

These roles form the basis of the termination in the flow chart from section 9.1.6 - OAS Privilege Assignment:



For full details on this process, consult (OAS - Integrate with Oracle Database Security, 2021) *Database Security.*

10.2 Preparation for upload of Oracle Provided Reports

In preparation for the upload of the Oracle Provided Reports, detailed in Chapter 15 - prepare for Oracle Provided Out of Box Reports, the following set of role grants should be created.

```
$ sqlplus sys/●●●●●● as sysdba
REM Create base EMBIP roles
create role EMBIPADMINISTRATOR;
create role EMBIPAUTHOR;
create role EMBIPSCHEDULER;
create role EMBIPVIEWER;

REM Create Role Mapping
grant XMLP_ADMIN to EMBIPADMINISTRATOR;
grant XMLP_DEVELOPER to EMBIPAUTHOR;
grant XMLP_SCHEDULER to EMBIPSCHEDULER;
grant MGMT_USER to EMBIPVIEWER;

Rem Ensure SYSMAN is an OAS Super Administrator
grant EMBIPADMINISTRATOR to SYSMAN;
```

10.3 Allowing access to Oracle Provided Reports for Individual EM users

The Oracle provided reports are installed with the four `EMBIP`* roles shown above.

For complete and proper access to these Oracle Provided Reports, ensure that the respective EMBIP* role(s) are assigned to the individual Enterprise Manager users.

- *If there are many EM users to process, a small SQL script can be written for this purpose.*

```
REM Setup an EMCC Report Author 'USER1'
grant EMBIPAUTHOR to USER1

REM Setup an EMCC Report Viewer 'USER2'
grant EMBIPVIEWER to USER2
```

10.4 Configure OAS for 'Database Security Model'

The complete set of steps are outlined below, followed by example screenshots.

10.4.1 Step 1 - Login to OAS

» For first time configuration, login to OAS as the **weblogic** user.

» If OAS is already configured for the 'Database Security Model', login as an Enterprise Manager Super Administrator, for example 'SYSMAN'.

» If neither of these logins are possible, and the instructions to setup a local SuperUser were followed, login as this local 'SuperUser'.

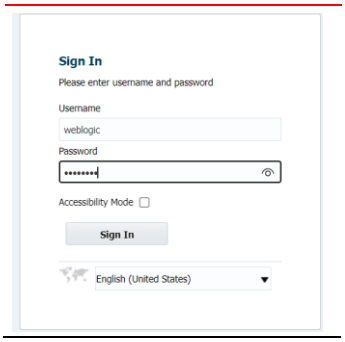


Figure 15. Login to OAS as the **weblogic** user (or the local SuperUser)

10.4.2 Step 2 - Click on the Administration link

In the far right-hand side of the OAS user interface, just to the right-hand side of the **Open** link, single click on the user icon. In the drop-down menu that is shown, choose Administration.

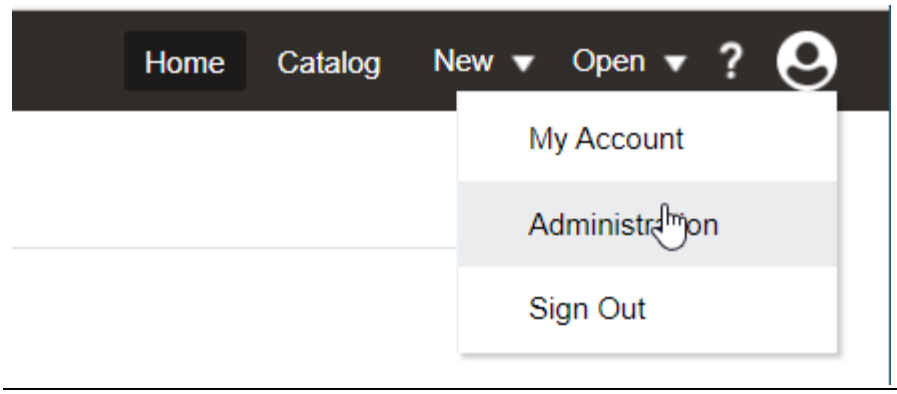


Figure 16. Click on the **Administration** link underneath **My Account**

10.4.3 Step 3 - Security Configuration (located under Security Center)

After the **Administration** link is pressed, the **Administration** screen below should be shown.

- Underneath the Security Center label, choose Security Configuration.

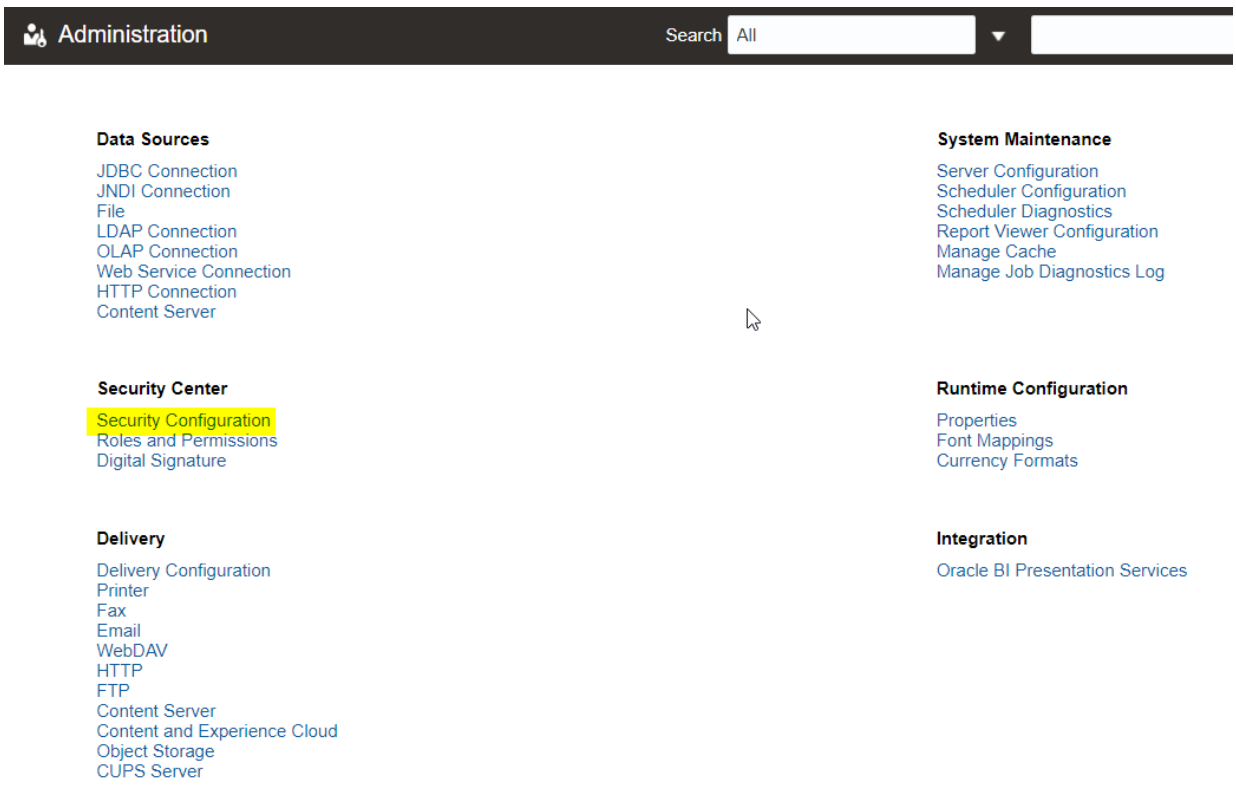


Figure 17. Administration Screens and Security Center. Needed for Security Configuration

10.4.4 Step 4 - Enable the local Superuser

Due to the complexities associated with these steps, and the possibility of accidentally locking yourself out of OAS, it is highly recommended to temporarily enable the local SuperUser:

This *special* account is not designed to be utilized for running or scheduling reports, but only to administer OAS.

Proceed with these steps to enable this *special* account:

- Click the check-box next to **Enable Local Superuser**.
- Enter a username and password, for example:
  - User: SuperUser
  - Password: ●●●●●●●●●

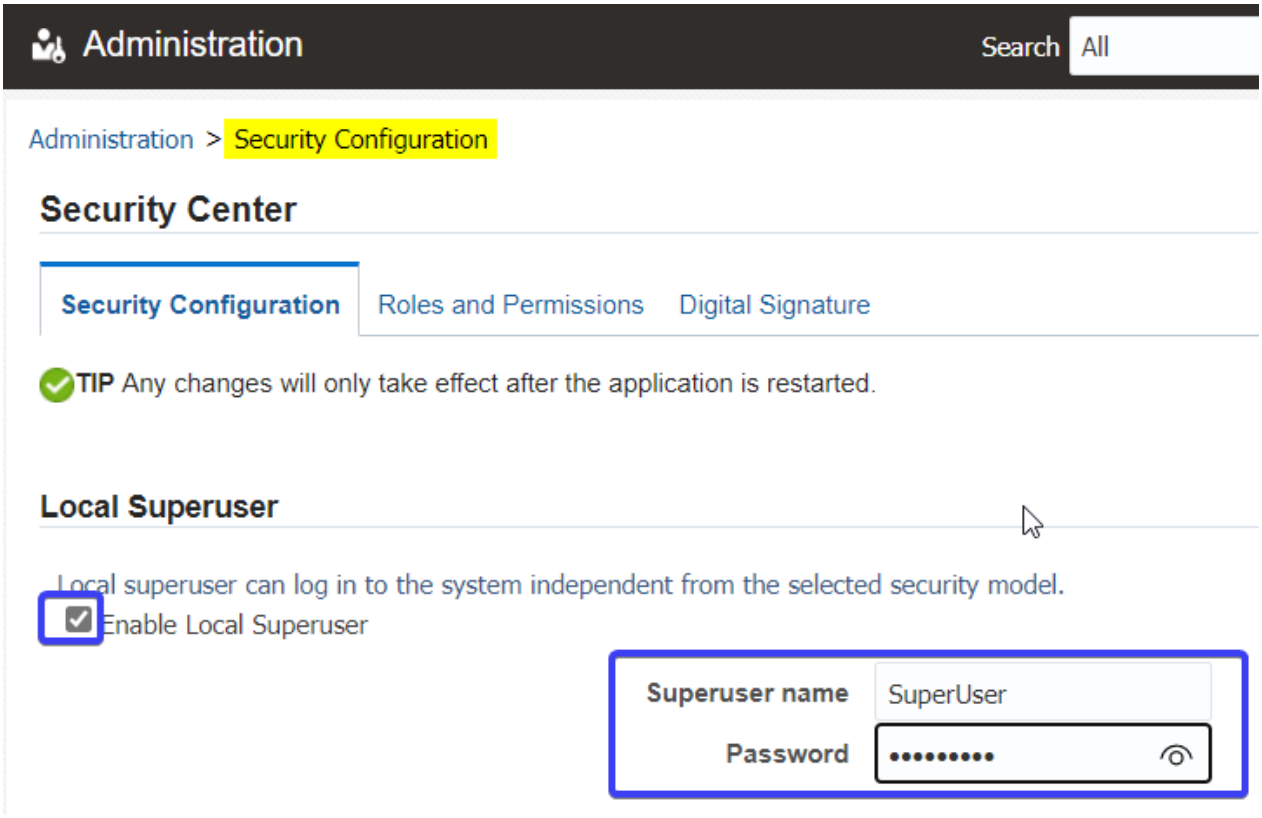


Figure 18. Enable local **Superuser**

10.4.5 Step 5 – Configuring the OAS Database Security Model

Configuration settings for the OAS Database Security Model are somewhat error prone.

- Detailed instructions follow and can be found in the standard OAS documentation set.[21]

10.4.5.1 Step 5, Part 1 - Determining the proper value for the JDBC Simple Connect Descriptor

It can be challenging to enter the correct syntax for the Simple connect string.

> *Please consult relevant Oracle DBMS documentation, as well as Oracle Analytics documentation.* [22]

Please consult 'Appendix J - Details on the JDBC Simple Connect ' for more details and tools that can be utilized to determine the correct values to enter below.

A trivial example is shown below:

- `jdbc:oracle:thin:@emrepos.example.com:1521/orclpdb.example.com`

10.4.5.2 Step 5, Part 2 - Determining the Administrator Username and Password

The Administrator username and password are straightforward. They are simply **'sysman'** and the sysman password.

10.4.5.3 Step 5, Part 3 - Example values

Security Model: **`Oracle Database`**

Connection String: `jdbc:oracle:thin:@//emrepos.example.com:1521:orclpdb.example.com`

Administrator Username: **`sysman`**

Administrator Password: ●●●●●●

Database Driver Class: `oracle.jdbc.driver.OracleDriver`

---

[21] Integrate with Oracle Database Security

[22] Configuring the Oracle Analytics Server Domain with the Configuration Assistant

10.4.6 Step 6 - Setting the OAS Security Model to “Oracle Database”

Scroll down to the Authorization section and fill in the appropriate fields.

- Make sure that ‘Use LDAP’ is not checked.
- Make sure that the Security Model is set to Oracle Database
- Fill in the appropriate connect descriptor for the Enterprise Manager Repository DBMS.
- Ensure to provide the sysman credentials.

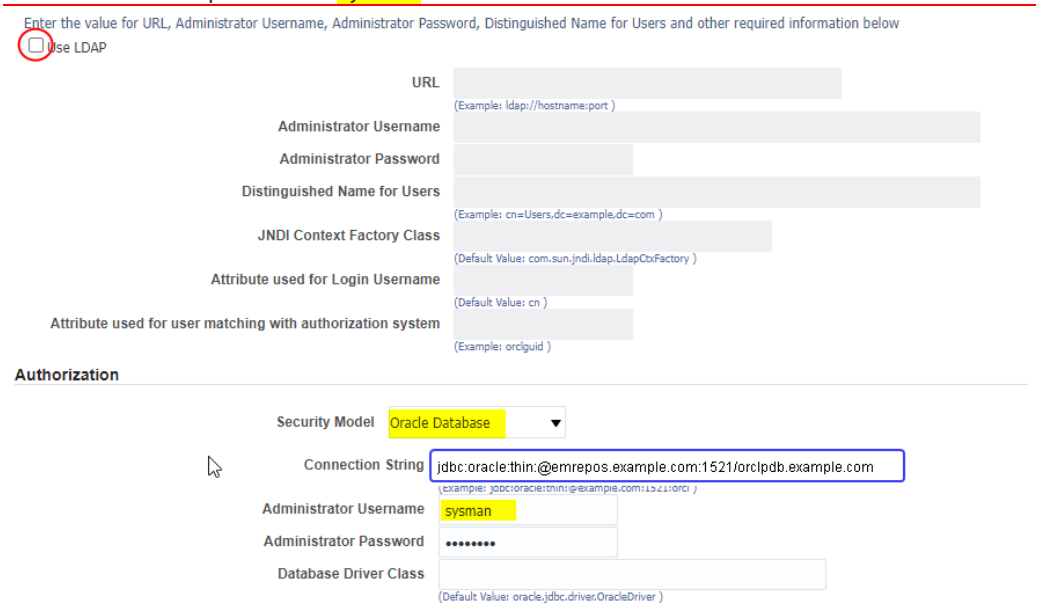


Figure 19. Configure OAS for **Oracle Database** Security Model

*NOTE: The database connection string and credentials are for the **EM Repository** database, and **not** for the OAS database.*

10.4.7 Step 7 - Hit apply

Figure 20. Apply Security Model Changes

10.4.8 Step 8 - Notice that a restart of the application is required

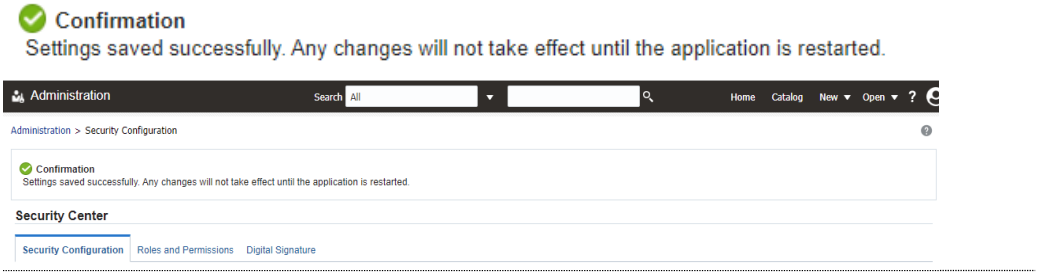


Figure 21. Required Restart of OAS

10.4.9 Step 9 - Shutdown OAS

Use the instructions in Appendix F - Stopping the full OAS stack.

10.4.10 Step 10 - Startup OAS

Use the instructions Appendix E - Starting the full OAS stack.

10.4.11 Step 11 - Monitor the bipublisher.log file for errors

In case the connect descriptor was entered incorrectly, monitor the bipublisher.log during the startup process.

```
$ cd $MW_HOME/user_projects/domains/bi/servers/bi_server1/logs
$ tail -f bi_server1.outXXXX
...
...
java.sql.SQLRecoverableException: Listener refused the connection with the following error:
ORA-12514, TNS:listener does not currently know of service requested in connect descriptor

       at oracle.jdbc.driver.T4CConnection.logon(T4CConnection.java:855) ...
       at oracle.xdo.security.OraValidator.validate(OraValidator.java:117) ...
       at oracle.xdo.servlet.security.ORCLDBSecurityHandler...
         at oracle.xdo.servlet.security.ORCLDBSecurityHandler.getPrincipal ...
...
...
```

10.4.12 Step 12 – Confirm success

If no errors are encountered, you can proceed to login to OAS using the SYSMAN account and credentials.

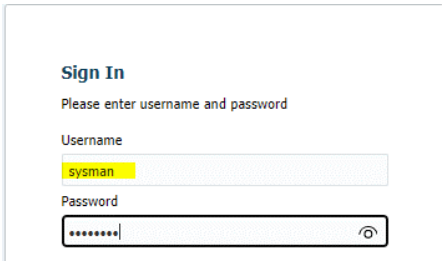


Figure 22. Login to OAS as the SYSMAN User

10.4.13 Confirm the correct OAS Group Assignments

Figure 23. Confirm Database Security Model

10.5 Proceed to next steps in the guide

Once all the steps in this chapter are completed, proceed to Chapter 14 - Configuration of required OAS Datasource(s).

CHAPTER 11. OAS LDAP CONFIGURATION – ENTERPRISE MANAGER PARITY

As discussed earlier, the standalone OAS is to be configured either using OAS Database Security Model or the OAS Fusion Middleware Security Model.

This chapter details the steps for the Fusion Middleware Security Model.

If utilizing the OAS Database Security Model, and chapter 10 has been completed successfully, skip to 'chapter Chapter 14 - Configuration of required OAS Datasource(s)'. Otherwise, continue with this chapter.

If Enterprise Manager is configured with LDAP alone, or LDAP along with Single Sign-on, the steps in this chapter are a required step to for the OAS configuration to match the Enterprise Manager configuration.

For this configuration of EM, the default OAS '**Fusion Middleware Security Model**' is utilized.

There are four steps to achieve this required configuration for OAS. These three steps are required whether OAS is to be configured with Single Sign-on (SSO) or not.

1. Configure the OAS Security Model:
   - Section 11.1- OAS Security Model Configuration – OAS Administration Steps:
     - Utilizing the OAS Administration screens.
     - requires either the **SYSMAN**, **weblogic**, or **SuperUser** credentials, as appropriate for the existing OAS Security Model).
2. Configure the OAS WebLogic Domain:
   - Section 11.2- OAS WebLogic Domain Configuration – Using the WebLogic Console UI
     - Utilizing the WebLogic console UI.
     - Requires the **weblogic** credentials.
3. Configure the OAS WebLogic Domain's Java Platform Services (JPS):
   - Section 11.3 - Configuration of Java Platform Services (JPS)
     - Utilizing the command-line.
     - Requires Operating System privileges to the OAS WebLogic domain's filesystem.
4. Grant OAS Fusion Middleware Application roles to EM LDAP Users and/or LDAP Groups:
   - Section 11.4 - Mapping Fusion Middleware Application roles to EM LDAP Users
     - Utilizing Fusion Middleware Control.
     - Requires the **weblogic** user's credentials.

If SSO is required, on top of LDAP, there are several more steps, making for a possible total of 11 steps.

5. Install Oracle HTTP Server (OHS).
6. Extend the OAS WebLogic Domain with the collocated OHS using the **config.sh** script.
7. Configure OHS for OAS using Fusion Middleware Control.
8. Configure Oracle Webgate, running on top of OHS.
9. Configure and add the OAM Identity Asserter to the list of WebLogic Security Providers.
10. Reorder the WebLogic Authentication Providers.
11. Perform the OAS Required Steps.
12. Edit **ServerName** directive in **httpd.conf**.

These additional steps are fully documented in 'Chapter 12 - Optional Configuration of SSO on top of LDAP'

11.1 OAS Security Model Configuration – OAS Administration Steps

- Due to possible user errors locking out access to OAS, a fallback '**Super User**' is highly recommended.

11.1.1 Step 1 - Login to OAS

- For first time configuration, login to OAS as the **weblogic** user.
- If OAS is already configured for the 'Database Security Model', login as an Enterprise Manager Super Administrator, for example 'SYSMAN'.
- If neither of these logins are possible, and the instructions to setup a local SuperUser were followed, login as this local 'SuperUser'

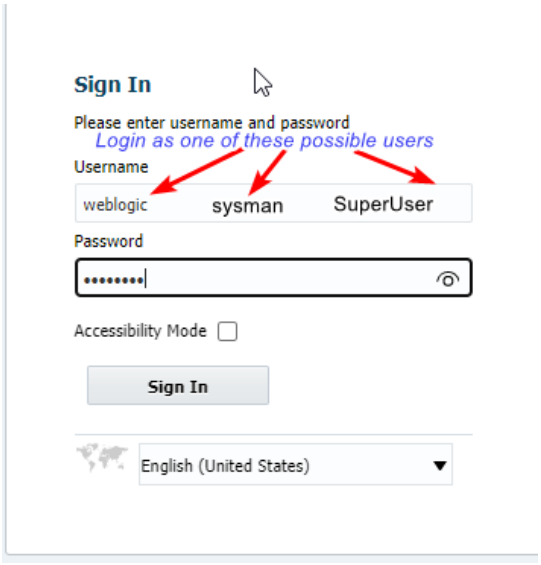
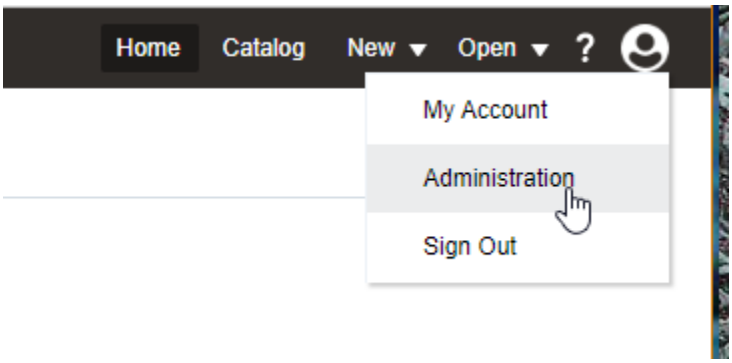


Figure 24. Login to OAS as the **weblogic** user (or local **superuser)**

11.1.2 Step 2 - Click on the Administration link underneath My Account

Towards the top right-hand section of the OAS user interface, above the **Open** link, and to the left of the **Help** link, click on the **Administration** link.



11.1.3 Step 3 - Security Configuration (located under Security Center)

After the **Administration** link is pressed, the **Administration** screen below should be shown.

- Underneath the Security Center label, choose Security Configuration.

Figure 25. Administration Screens and Security Center. Needed for Security Configuration

11.1.4 Step 4 - Enable the local SuperUser

Due to the complexities associated with these steps, and the possibility of accidentally locking yourself out of OAS, it is highly recommended to temporarily enable the local SuperUser:

- This *special* account is not designed to be utilized for running or scheduling reports, but only to administer OAS.

Proceed with these steps to enable this *special* account:

- Click the check-box next to **Enable Local Superuser**.
- Enter a username and password, for example:
  - User: SuperUser
  - Password: ••••••

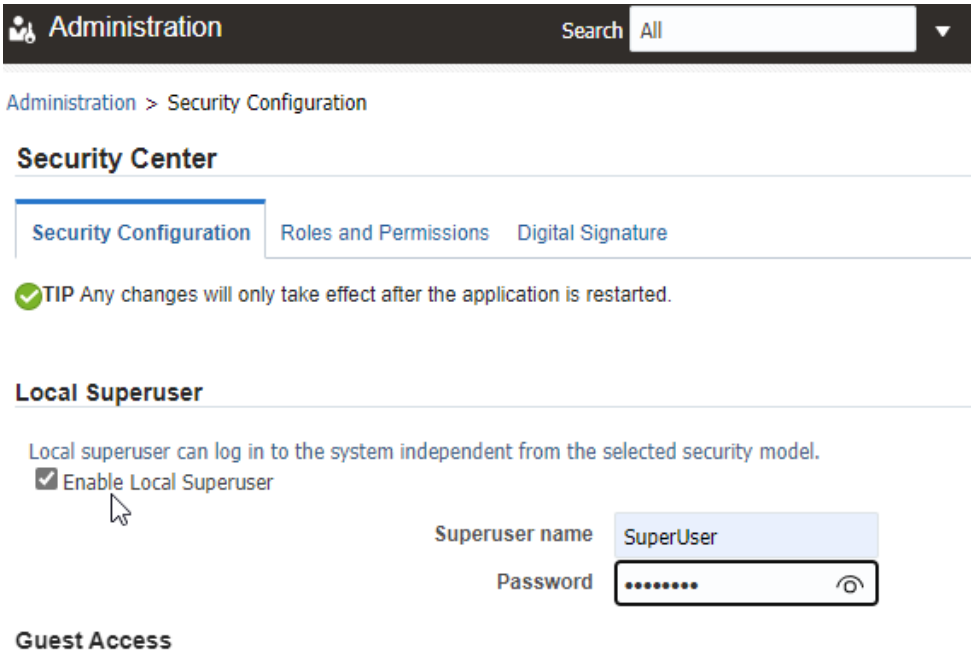


Figure 26. Enable local **Superuser**

11.1.5 Step 5- Confirm correct configuration of 'Fusion Middleware Security Model'

- For the first LDAP configuration, without Single Sign-On, make sure that **Use Single Sign-On** is not checked.
  - For subsequent configuration of Single Sign-on, the steps are outlined in 'Chapter 12 - Optional Configuration of SSO on top of LDAP'.
  - LDAP configuration is a pre-requisite for Single Sign-On, but do not set that option at this stage.
- Make sure that 'Allow Guest Access' is not checked.
- Make sure that 'Use Single Sign-On' is not checked.
- Make sure that 'Use LDAP' is not checked.
- Make sure that the 'Security Model' is set to Oracle Fusion Middleware.
- Make that 'Fusion Apps Security' is not checked.

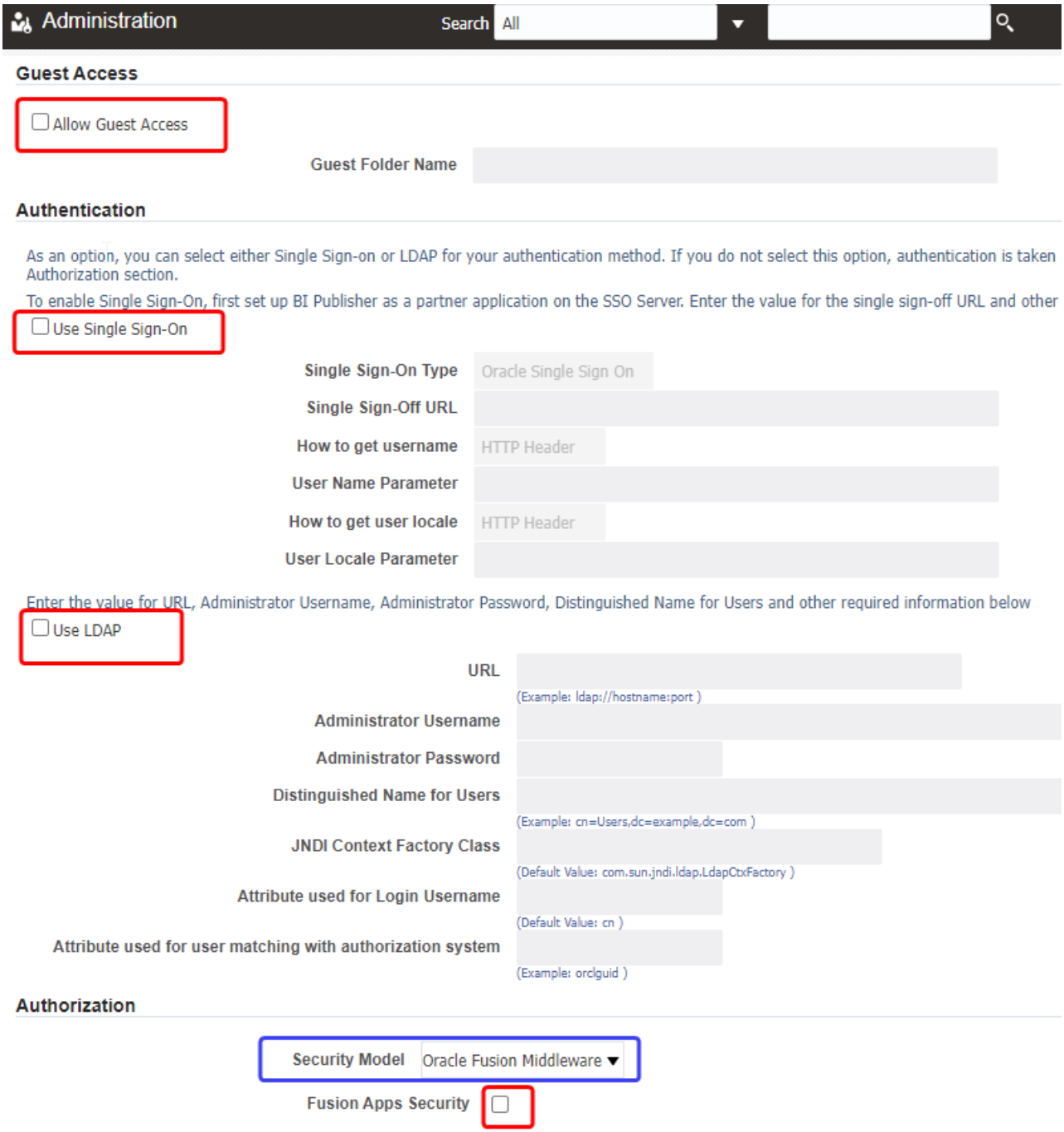


Figure 27. Ensure that **Oracle Fusion Middleware** Security Model is configured correctly.

11.2 OAS WebLogic Domain Configuration – Using the WebLogic Console UI

The overall goal of these sections is to configure the OAS WebLogic domain's Security Configuration in such a way that it is functionally identical to Enterprise Manager's WebLogic domain Security Configuration.

config.xml

Inspection of specific details of the WebLogic domain(s) can be found in the **config.xml** file, for the respective WebLogic domains (i.e., the Enterprise Manager WebLogic Domain and/or the standalone OAS WebLogic Domain).

- Under no circumstances should the **config.xml** file be directly edited or manipulated directly.
- Ensure that all inspection of the **config.xml** is done in read-only mode (i.e., using the command-line tools [`more, less, view, vi -r`].
- Editing the **config.xml**, even if backups are made beforehand, can result in corruption of the WebLogic domain.

Approved Fusion MiddleWare Tools

Throughout the rest of these sections, all examples will utilize the below WebLogic tools.

- WebLogic Console
- Fusion Middleware Control
- WLST Scripting tool

The screenshots will consistently display the OAS WebLogic console on the left-hand side of the screenshot, and the EM WebLogic console is on the right-hand side of the screenshot.

The easiest approach for implementing the screenshots on the following pages is to bring up the WebLogic console for the EM domain side-by-side with the OAS WebLogic domain.

Due to certain limitations in the WebLogic console's user interface, it is necessary to utilize two separate browser sessions.

Our approach is to use a specific browser for each of the WebLogic consoles (i.e., Chrome for EM, and Firefox for OAS).

Preliminary Steps

For each WebLogic console, it is necessary to get to the **Authentication Providers** screen.

To navigate to the **Authentication Providers** screen, on both WebLogic consoles, follow the four steps below (screen shots are on the next page).

- Login to the WebLogic console as the **weblogic** user
- On the left-hand side of the browser window, underneath the **Domain Structure**, click on the link for **Security Realms.**

» The list of security realms is shown. There should just be one realm, named **myrealm**.

- Click on **myrealm**.

The settings for **myrealm** are shown.

- Click on the tab for **Providers**.

Remember, these four steps must be performed for each WebLogic console.

The OAS console should be on the left-hand side of your desktop, and EM on the right-hand side.

If the above four steps are performed correctly, then you will see screens similar to what is shown in either Figure 31 - Comparison of WebLogic Security Configurations – Oracle Internet Directory, or in Figure 32 - Comparison of WebLogic Security Configurations – Microsoft Active Directory.

11.2.1 Step 1 - Login to WebLogic console

- http://oas.example.com:9500/console

Figure 28. Step 1: Logic to WebLogic Consoles

11.2.2 Step 2- Click on Security Realms

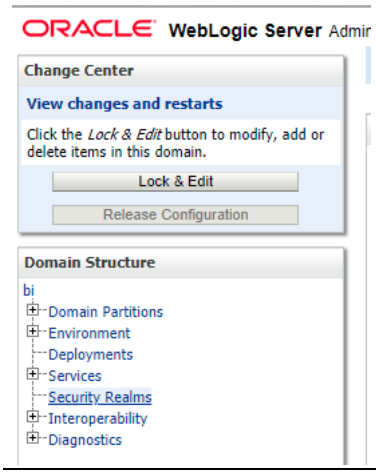


Figure 29. Step 2: Click on **Security Realms** for each WebLogic console

11.2.3 Step 3 - Click on myrealm and then the Providers tab

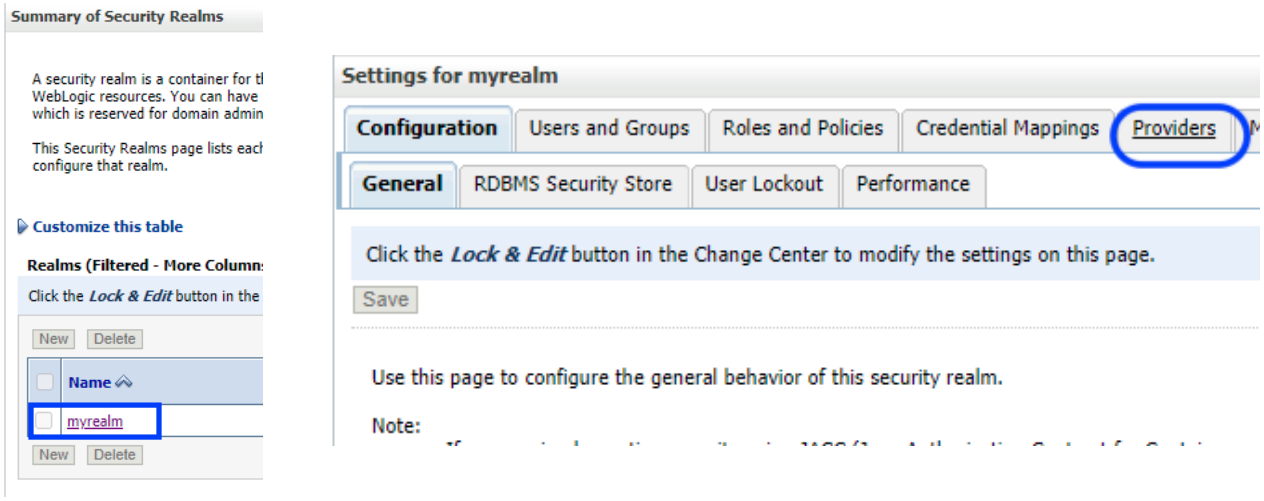


Figure 30. Step 3: Click on **myrealm** and then the Providers tab in each WebLogic console

11.2.4 Step 4 - Duplicating Enterprise Manager's LDAP configuration

In the screenshots below, the default WebLogic Security Configuration for OAS is shown on the left.

The WebLogic Security Configuration for an Enterprise Manager that is configured to utilize Oracle Internet Directory (OID), and Microsoft Active Directory, respectively, as the LDAP store, is shown on the right.

11.2.4.1 Step 4 - Topic 1 - Comparison of WebLogic Security between EM and OAS

Please note that these Enterprise Manager Screenshots are from sites with either OID or AD, but without SSO.

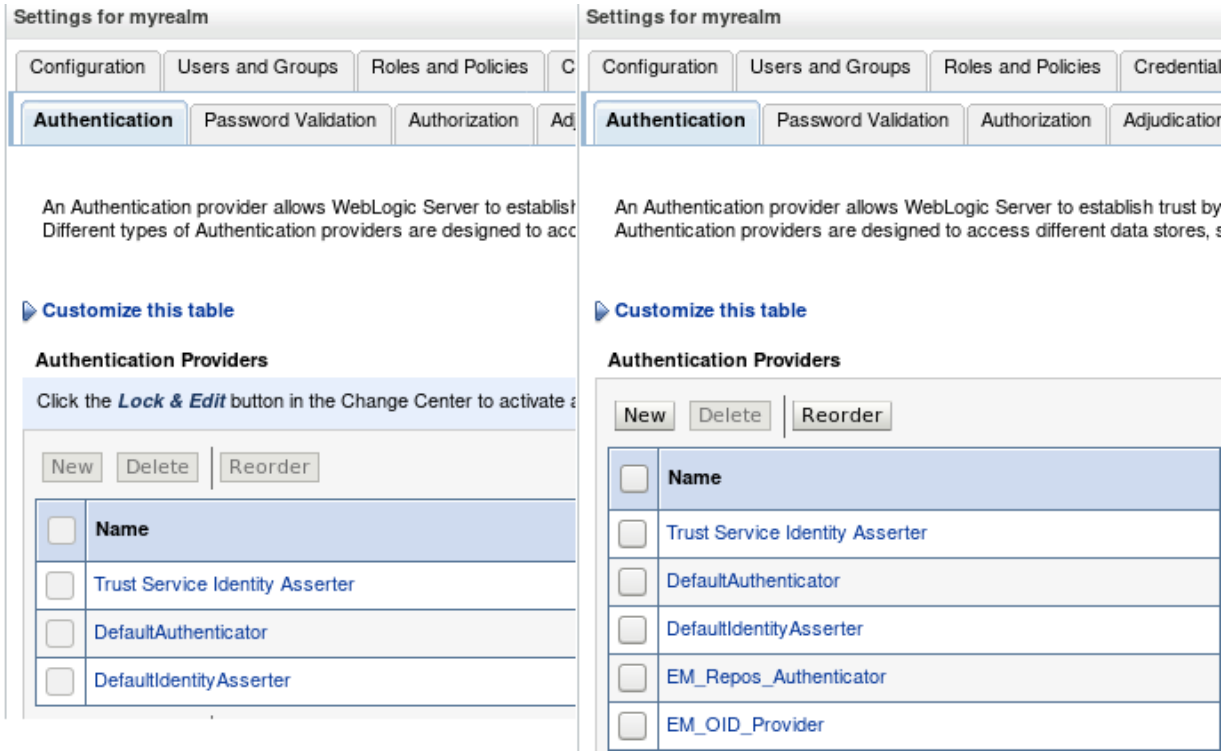


Figure 31. Comparison of WebLogic Security Configurations – Oracle Internet Directory

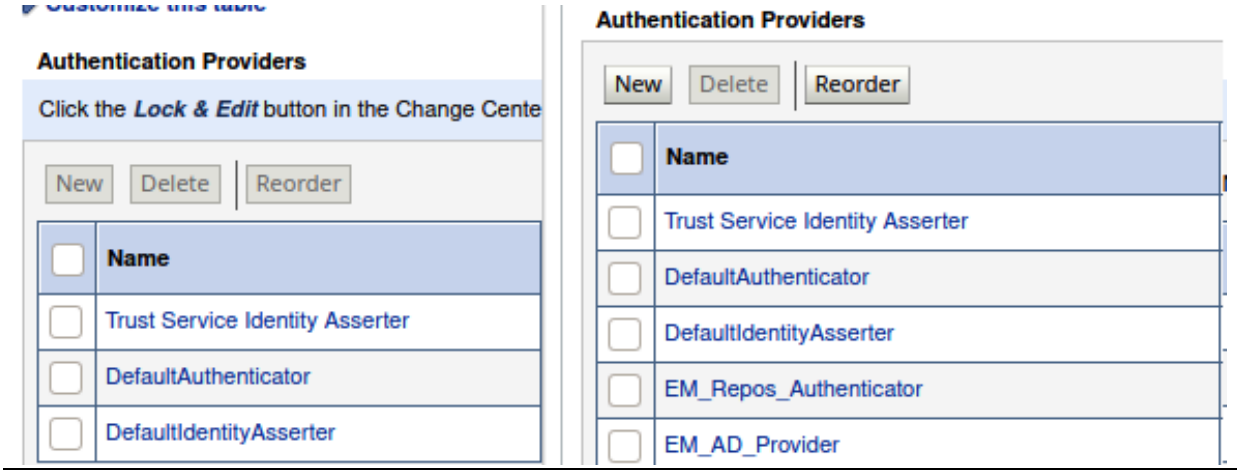


Figure 32. Comparison of WebLogic Security Configurations – Microsoft Active Directory

The following two screenshots provide some more details of the two separate domains.

11.2.4.2 Step 4 - Topic 2 - WebLogic Security Configuration for OAS

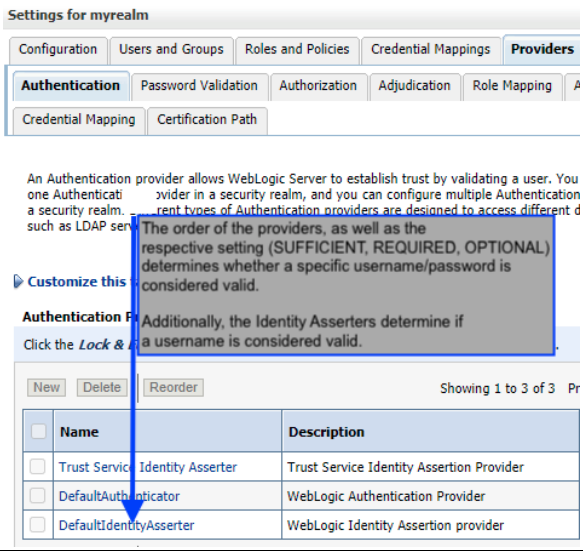


Figure 33. WebLogic Security Configuration for OAS

11.2.4.3 Step 4 - Topic 3 - WebLogic Configuration for EM with OID (without SSO)

Figure 34. WebLogic Security Configuration for EM when using LDAP (OID based)

In the end, the overall goal is to configure the OAS WebLogic domain to process authentication requests in a similar manner as EM.

For more details on the WebLogic Authentication Architecture, please refer to 'Appendix K - WebLogic Authentication Providers'

11.2.5 Overview of steps to configure OAS identically to EM

In summary, the overall goal of configuring OAS for LDAP security, is such that the OAS WebLogic domain is configured with the same overall architectural configuration as Enterprise Manager.

When we begin this procedure, the two WebLogic domains are shown below, with the default WebLogic security configuration for OAS is on the left, and the default WebLogic security configuration for EM, configured with LDAP, on right.

Note: We are not modifying or changing anything in the EM WebLogic Domain, but simply using it to assist in the configuration of the OAS WebLogic Domain.

11.2.5.1 Comparison at start of procedures

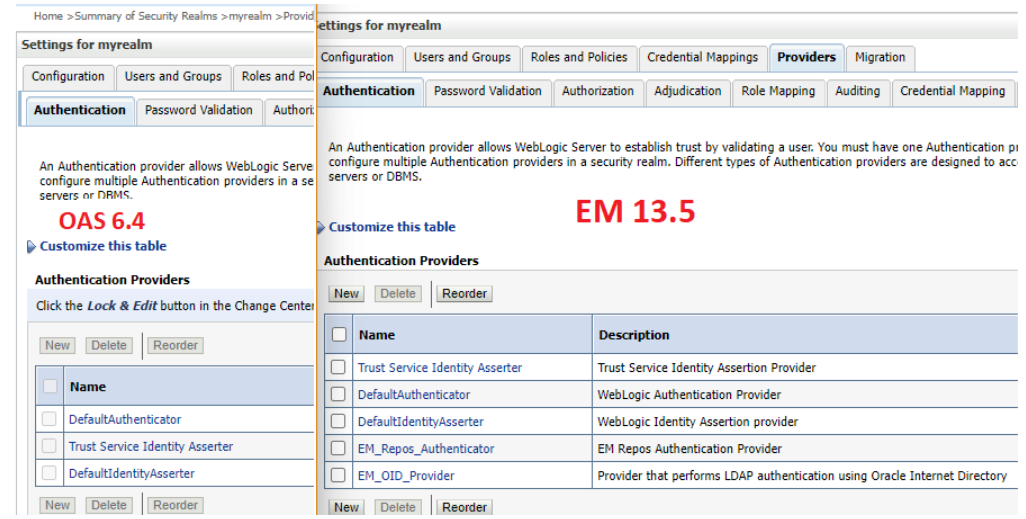


Figure 35. Comparison of OAS WebLogic Domain to EM WebLogic domain at beginning of procedures

11.2.5.2 Comparison at end of procedures

At the end of the series of steps on the following pages, the results will look like the below screen shot (without SSO).

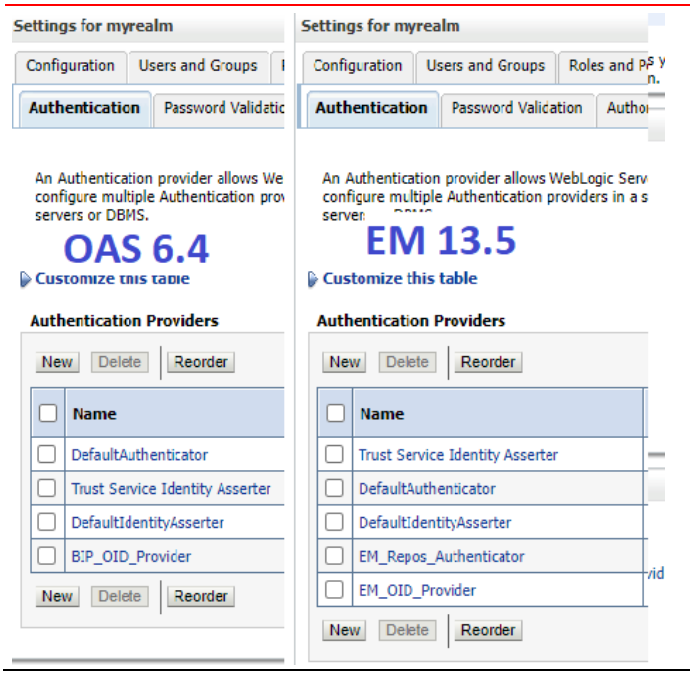


Figure 36. Comparison of OAS WebLogic Domain to EM WebLogic Domain - Completed

11.2.5.3 Detailed Steps for Configuration of OAS for LDAP

Returning to the earlier discussion, the easiest approach to achieving parity between the OAS WebLogic Domain, and EM's WebLogic Domain, is to use a specific browser for each of the WebLogic consoles (i.e. Chrome for EM, and Firefox for OAS).

For this example, the WebLogic console UI for the EM domain is brought up side-by-side with the WebLogic console UI for OAS.

The screenshots in the remainder of this section assume that the OAS WebLogic console is on the left-hand side of the desktop, and the EM WebLogic console is on the right-hand side.

For each WebLogic console, it is necessary to get to the **Authentication Providers**.

To navigate to this screen, on both WebLogic consoles, follow these four steps:

1. Login to the WebLogic console as the **weblogic** user
2. On the left-hand side of the browser window, underneath the **Domain Structure**, click on the link for **Security Realms.**
   - The list of security realms is shown.
   - There should just be one realm, named **myrealm**.
3. Click on **myrealm**.
   - The settings for **myrealm** are shown.
4. Click on the tab for **Providers**.

Screenshots for each of these steps are shown in Sections 11.2.1, 11.2.2, and 11.2.3.

- Remember, these four steps must be performed for each WebLogic console.
- To reiterate, the OAS WebLogic console UI will be on the left-hand side of your desktop, and EM WebLogic console UI will be on the right-hand side.

If the above four steps are performed correctly, then you will see WebLogic console similar to what is shown in Figure 35 - Comparison of OAS WebLogic Domain to EM WebLogic domain at beginning of procedures.

There are a total of 10 steps for this set of configuration items.

11.2.5.3.1 Step 1 – Edit the runtime configuration of the OAS WebLogic Domain

To perform editing operations on a **Production** WebLogic Domain (the default):

- Login to the OAS WebLogic Console UI as the **weblogic** user.
- In the top left-hand corner of the UI, click on **Lock & Edit**.

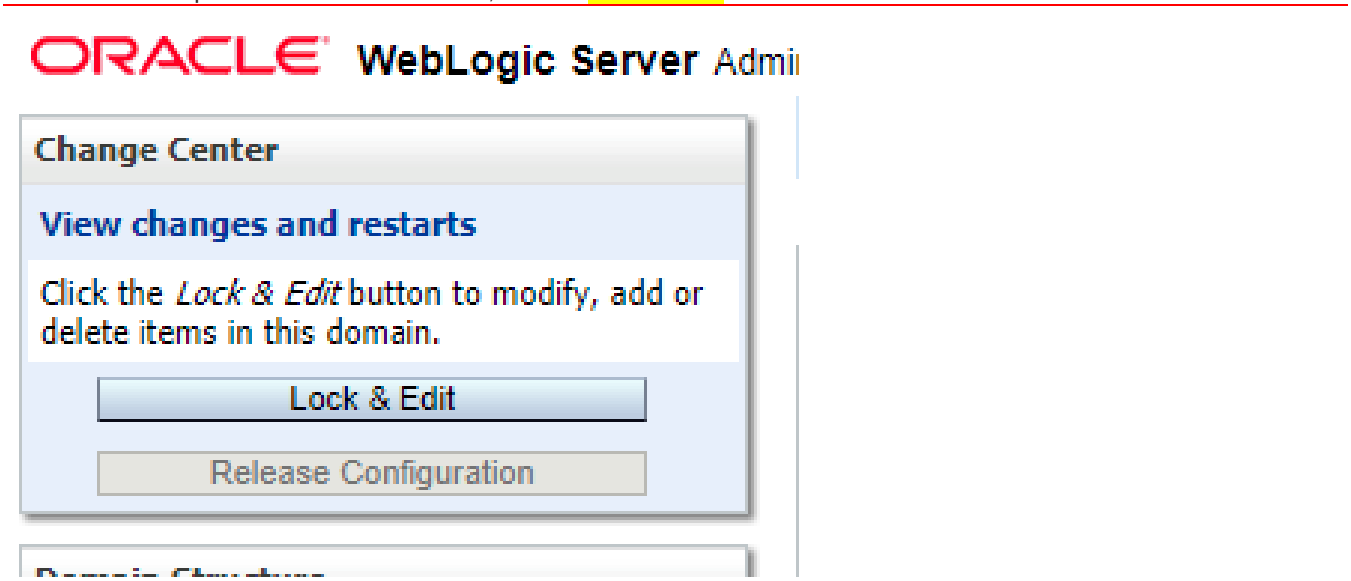


Figure 37. Lock & Edit OAS WebLogic Domain Configuration

11.2.5.3.2 Step 2 - Configure WebLogic Provides

The next steps add a new WebLogic Authentication Provider:

- One of the below:
  - Oracle Internet Directory (OID) **or**
  - Microsoft Active Directory.

Ensure that you have navigated correctly to the **settings** for **myrealm**.

Ensure that the first tab **Authentication** is in focus.

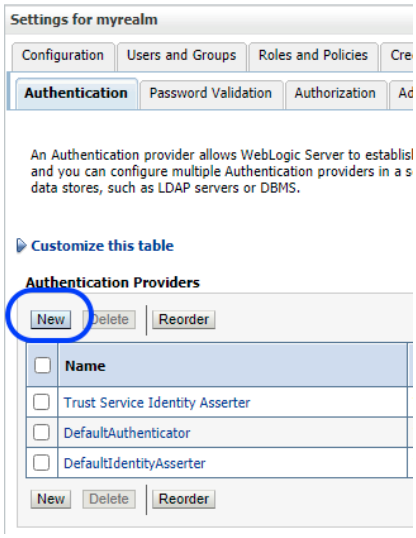
Steps:

1. Click on the **New** button.
2. In the text box for the **Name**: field, choose a name as appropriate:
   - **BIP_OID_Provider** or **BIP_AD_Provider**
3. In the drop-down for the Type: **field**, scroll down, and choose as appropriate:
   - **OracleInternetDirectoryAuthenticator**

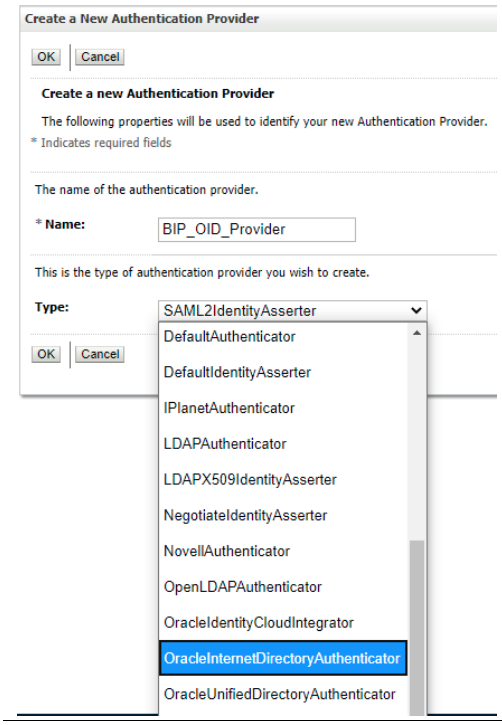
Or:

- **ActiveDirectoryAuthenticator**

Click on the **OK** button.



Oracle Internet Directory



Microsoft Active Directory

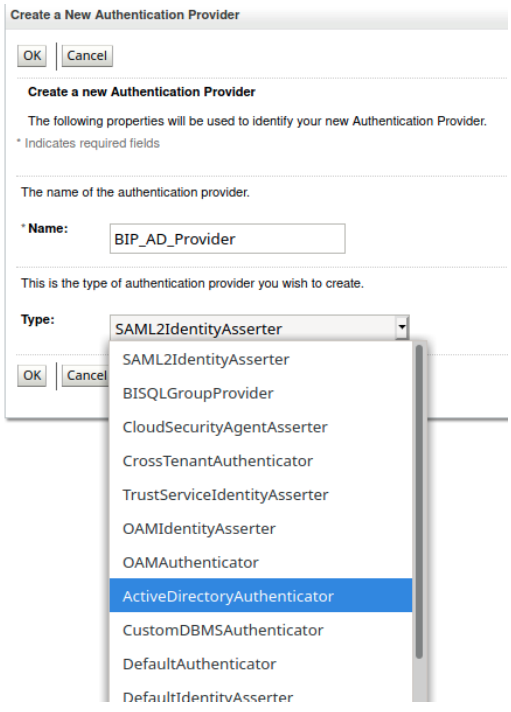


Figure 38. Add the BIP_OID_Provider or BIP_AD_Provider to OAS WebLogic Domain

11.2.5.3.3 Step 3 - Re-order the providers – Enterprise Manager 13.5 no longer requires this

11.2.5.3.4 Step 4 – Confirm correct ordering of providers

Confirm that the ordering matches the screenshots below:

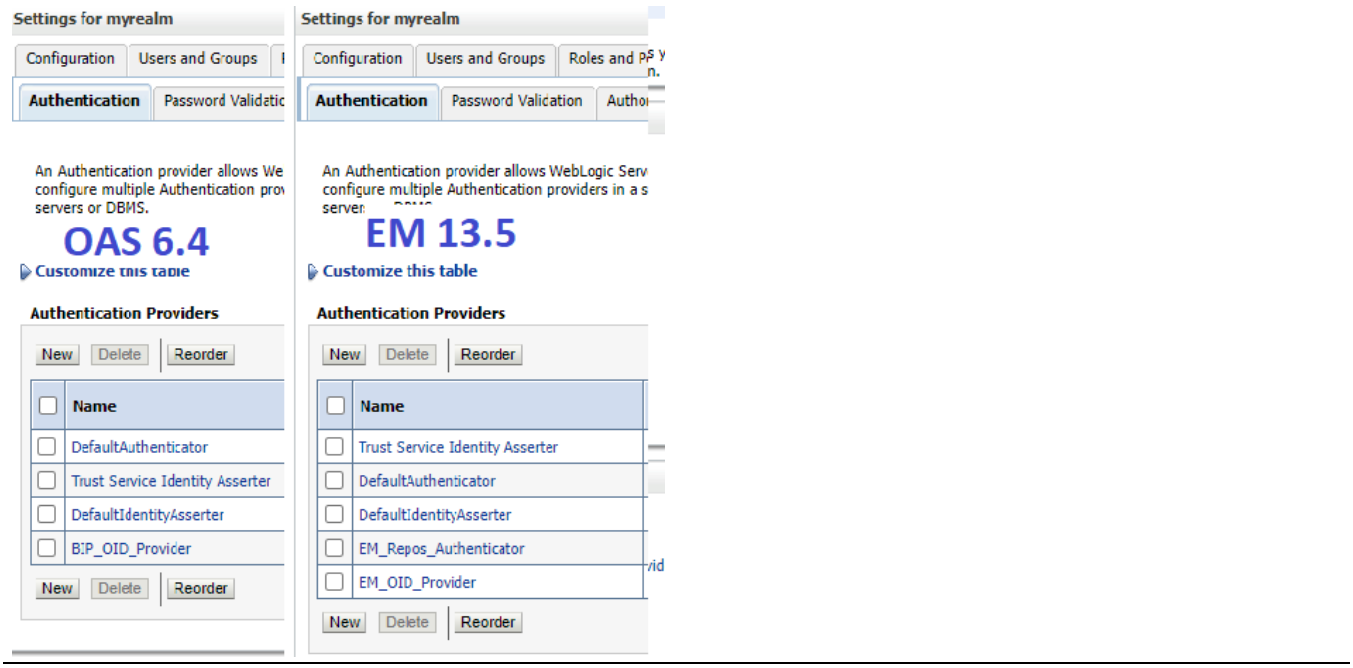


Figure 39. Correct order of WebLogic Authentication Providers – Oracle Access Manager (SSO) with OID

11.2.5.3.5 Step 5 – Change the OID Provider to SUFFICIENT

By default, both the BIP_OID_Provider and the BIP_AD_Provider are configured as **OPTIONAL**, with the WebLogic defaults.

Click on the appropriate provider (BIP_OID_Provider or BIP_AD_Provider) and then change the provider to be **SUFFICIENT.**

Change the Control Flag: drop-down from **OPTIONAL** to **SUFFICIENT.**

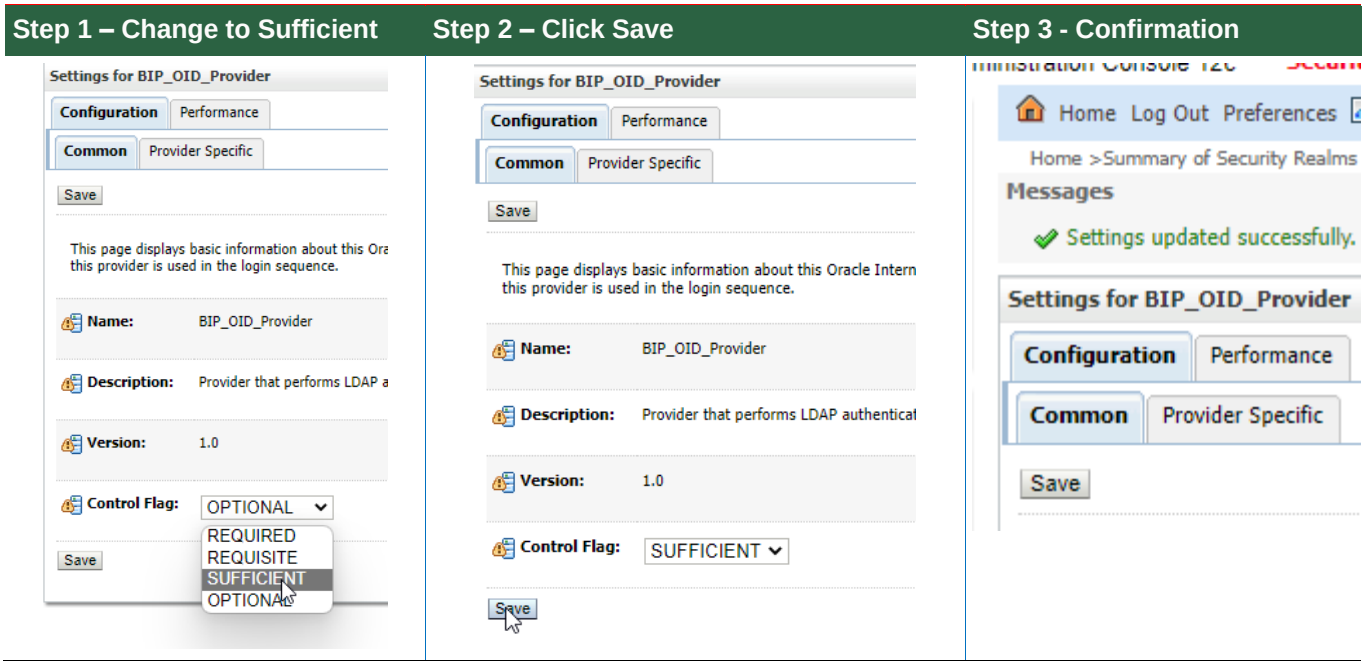


Figure 40. Change BIP_OID_Provider from OPTIONAL to SUFFICIENT

11.2.5.3.6 Step 6 – Configure OID Provider for OAS WebLogic Domain

The next step is to configure the OID Provider for OAS WebLogic Domain to match EM's WebLogic Domain.

The following sub-sections detail the required configuration requirements that are specific to the BIP_OID_Provider.

- Each WebLogic Authenticator supports provider-specific configuration parameters.

The overall goal is to configure the BIP_OID_Provider's **Provider Specific** configuration parameters to match the EM_OID_Provider's **Provider Specific** configuration parameters.

The configuration settings for the **Oracle Internet Directory** provider specific parameters are quite complex.

Due to the large size of the configuration parameters screen, three screenshots are shown for the single configuration screen

The procedure will be to copy entries from the right side of your desktop (with the EM WebLogic Domain) to the left side of your desktop (with the OAS WebLogic Domain).

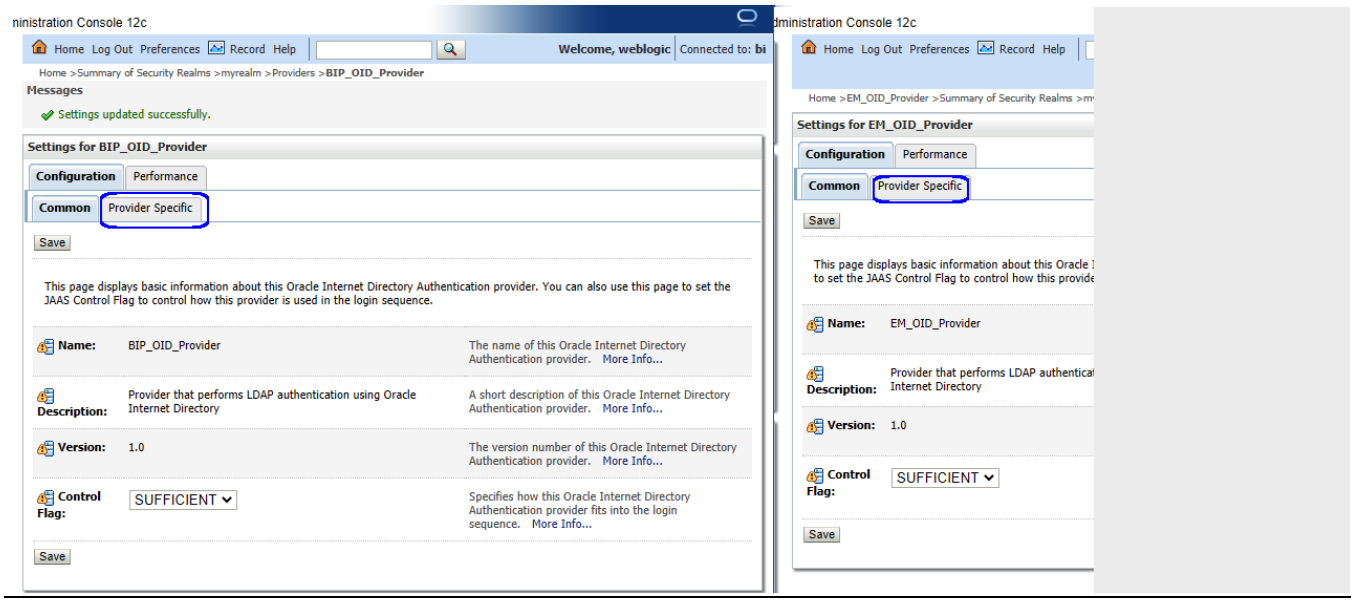


Figure 41. Configure OAS with Oracle Internet Directory **provider Specific** parameters

11.2.5.3.7 Step 7 - Configure the OAS provider specific screens

- There are several items that need to be configured on this page. It is broken up into 3 sections below.
- The fourth step is required to save the changes made.

11.2.5.3.7.1 Step 7 - 1st Section of OID Provider Specific Configuration Parameters

1) Provide the Hostname of the common LDAP server to be shared between EM and OAS.
2) Provide the same port for OAS as EM is using.
3) Provide same principal for OAS as EM is using.
4) Provide same credential for OAS as EM is using.
5) Copy/Paste the following items from EM to OAS:
    a. User Base DN
    b. All Users Filter
    c. Users from Name Filter
6) Ensure to select **Use Retrieved Username as Principal**

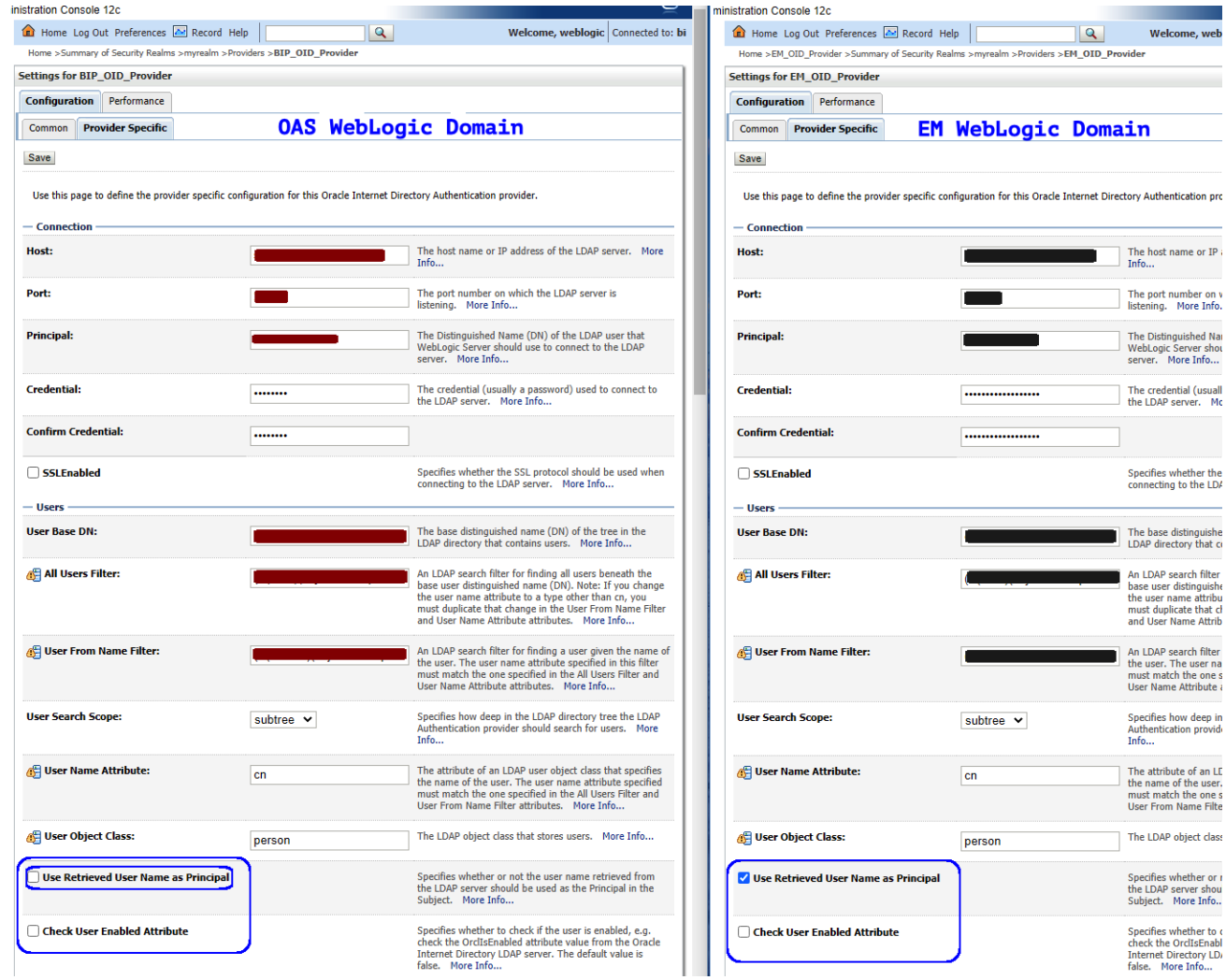


Figure 42. First Section of BIP_OID_Provider changes

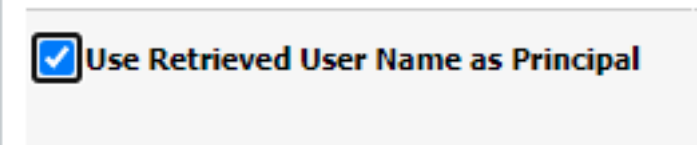


Figure 43. Ensure that **Use Retrieved User Name as Principal** is checked

11.2.5.3.7.2 Step 7 - 2nd Section of OID Provider Specific Configuration Parameters

1) Copy/Paste the following items from EM to OAS:
    a. Group Base DN
    b. All Groups Filter
    c. Group from Name Filter
2) Copy/Paste Static Group DNs from Member DN... from EM to OAS.

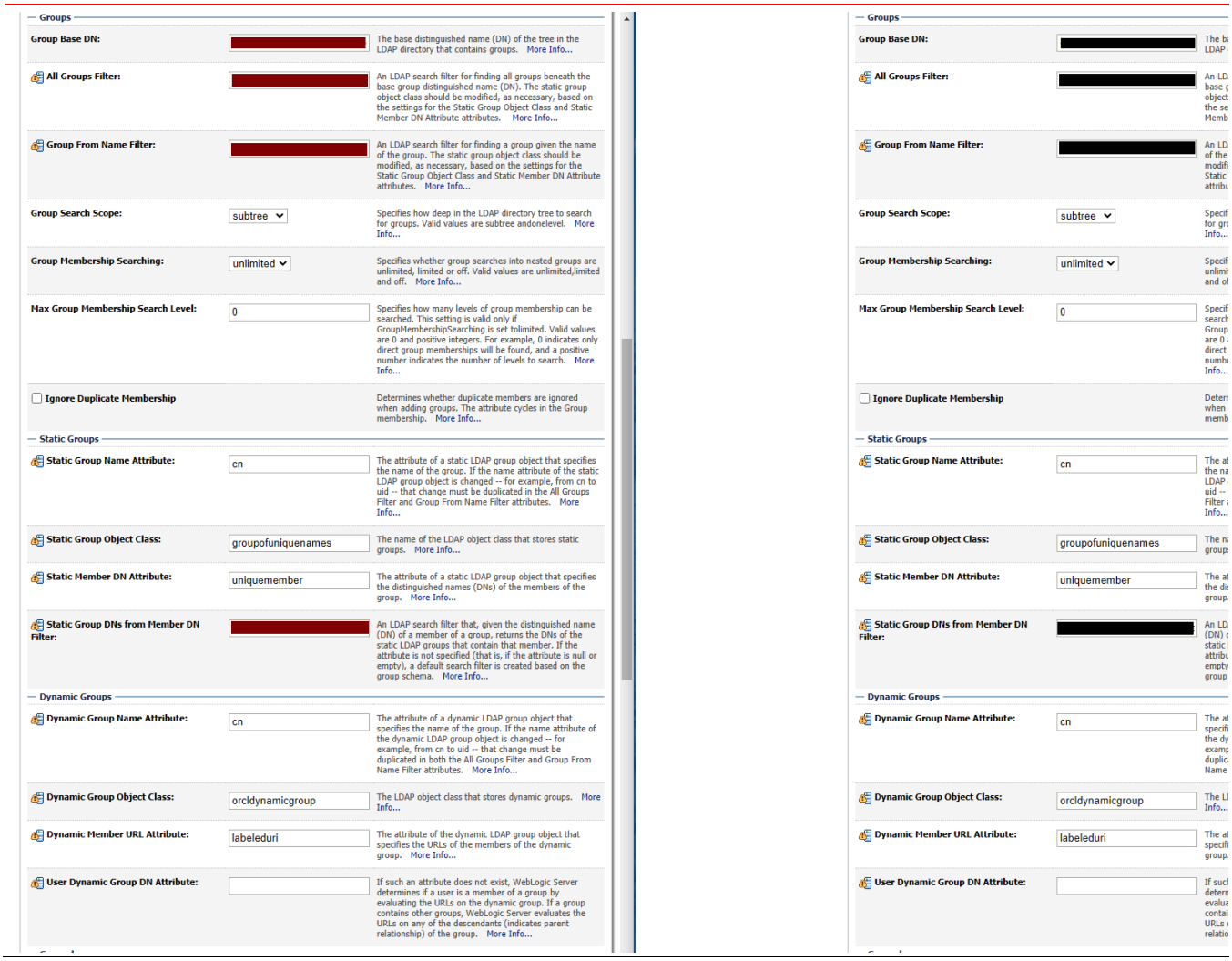


Figure 44. Second Section of BIP_OID_Provider changes

11.2.5.3.7.3 Step 7 - 3rd Section of OID Provider Specific Configuration Parameters

1) Copy/Paste Results time limit from EM to OAS.
2) Make sure the radio buttons are **not selected.**

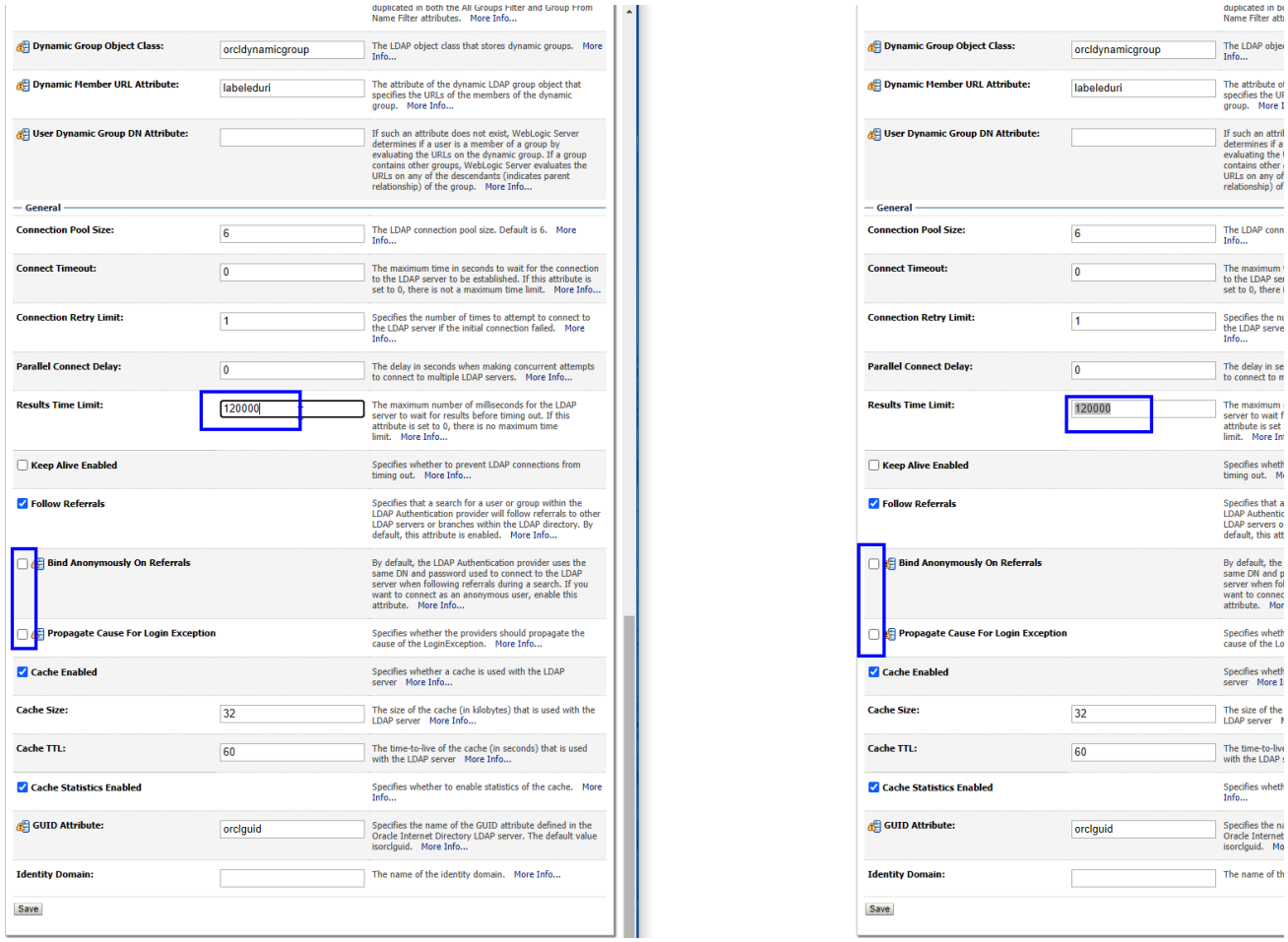


Figure 45. Third Section of BIP_OID_Provider changes

11.2.5.3.7.4 Step 7 - Part 4 - Press the Save button.

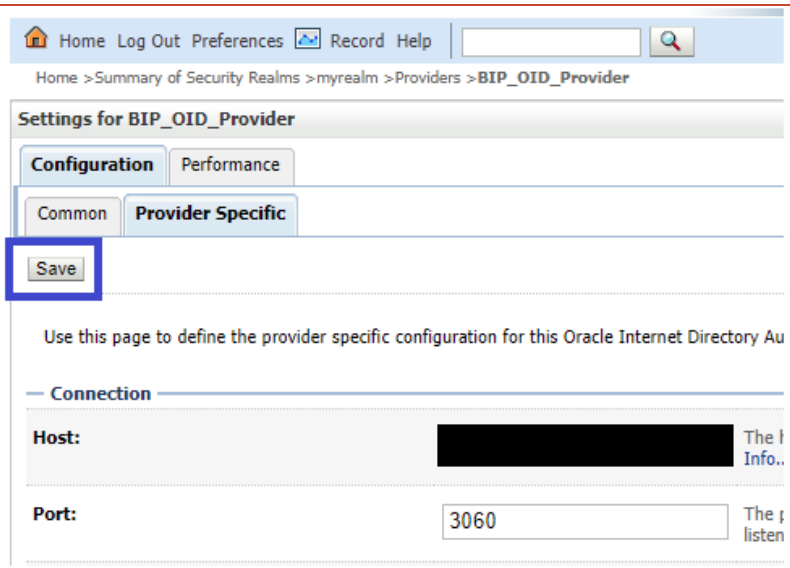
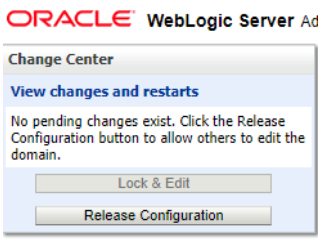


Figure 46. Save the changes made to the provider specific screens

11.2.5.3.8 Step 8 – Change the DefaultAuthenticator from REQUIRED to SUFFICIENT

The **DefaultAuthenticator** must be changes from **REQUIRED** to **SUFFICIENT,** otherwise logins will fail.

- There are 5 parts to the step.



11.2.5.3.8.1 Step 8 - Part 1 - Ensure that the Domain is in the Edit Settings mode:

Figure 47. Ensure the domain is in the Lock & Edit Mode

11.2.5.3.8.2 Step 8 - Part 2 - From the Providers page (sections 11.2.111.2.211.2.3): Security Providers → myrealm → Providers tab

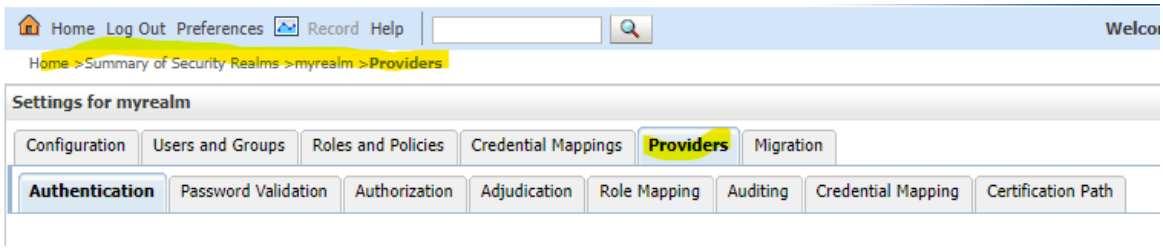


Figure 48. Navigate to the Providers tab

11.2.5.3.8.3 Step 8 - Part 3 - Click on the DefaultAuthenticator

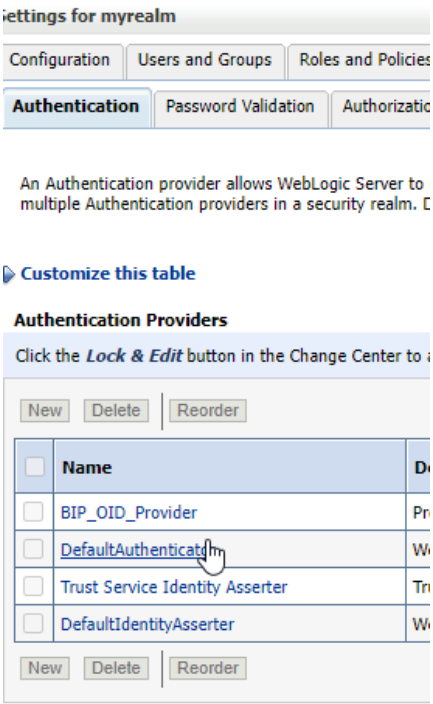


Figure 49. Click on the Default Authenticator

11.2.5.3.8.4 Step 8 - Part 4 - Change the Control Flag from REQUIRED to SUFFICIENT

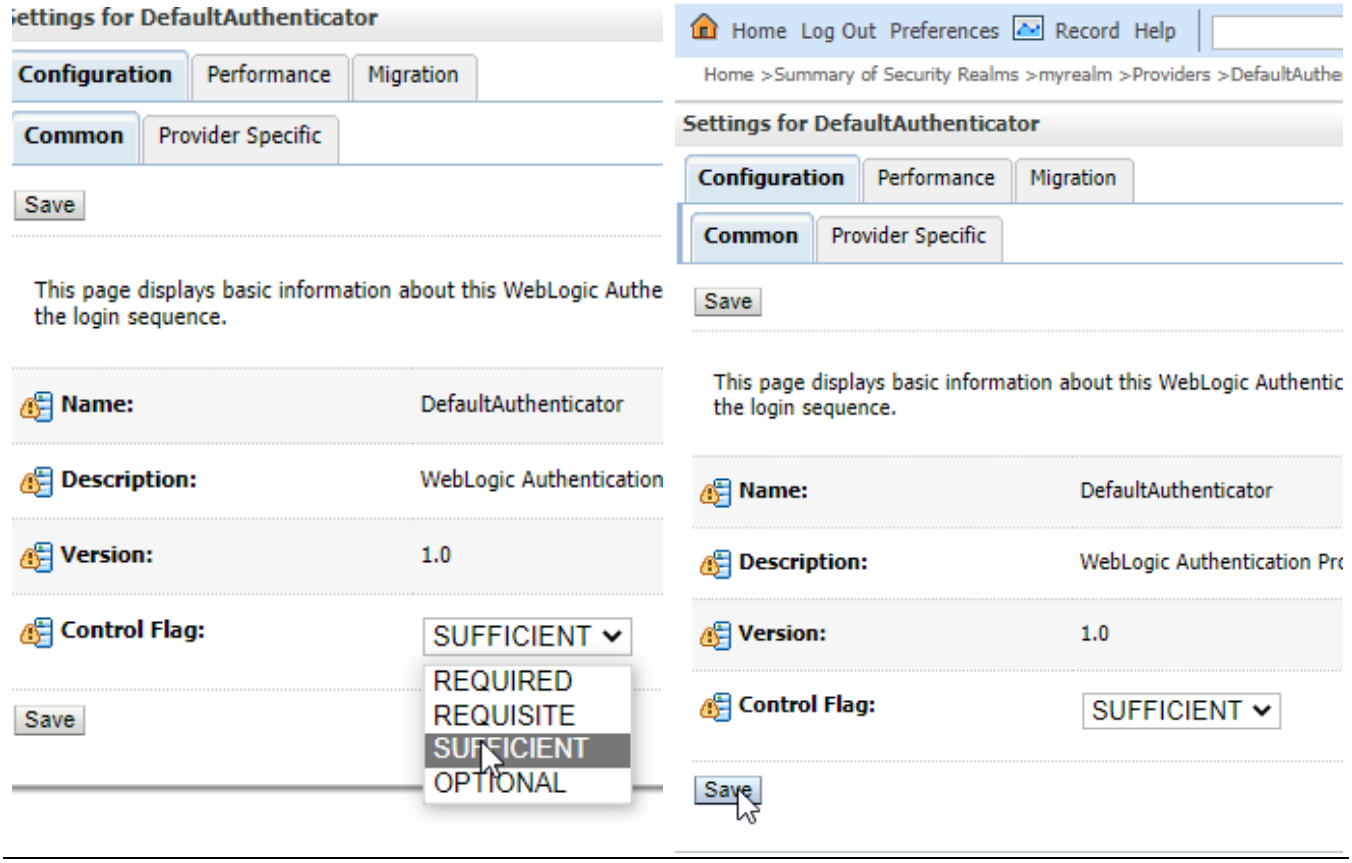
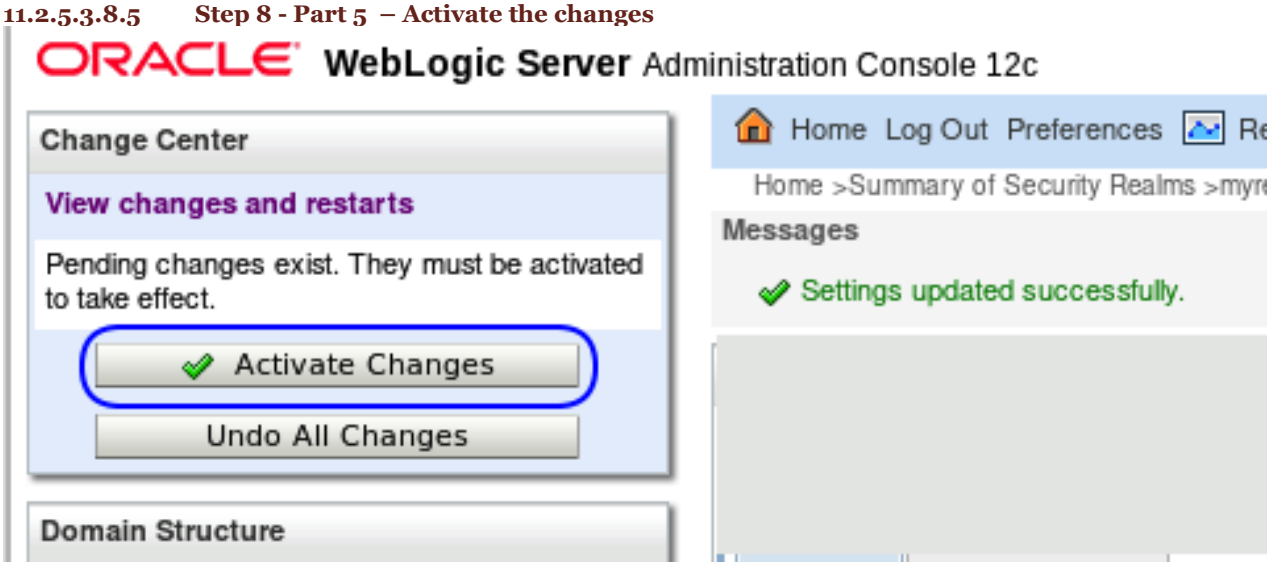


Figure 50. Change DefaultAuthenticator from REQUIRED to SUFFICIENT and Save the changes

11.2.5.3.8.5 Step 8 - Part 5 – Activate the changes



11.3 Configuration of Java Platform Services (JPS)

To fully utilize an LDAP Server, such as Oracle Internet Directory (OID) or Microsoft Active Directory (AD), it is necessary to configure the Oracle Virtual Directory (OVD) subsystem.

This requires logging into the Operating System for the OAS product's Oracle Home and issuing the command-lines below.

Prior to editing these files, it is necessary to bring down the entire stack. See ' Appendix F - Stopping the full OAS stack'.

There are two required steps:

1. Configure the Java Platform Services (JPS) to utilize Oracle Internet Directory (OID) for Fusion Middleware role mapping.
2. Configure OVD to support the 'BlindTrustManager'.

Part 1 - Configure Java Platform Services

The file **jps-config.xml** needs to be edited by adding the following text as shown below:

```
<property name="virtualize" value="true"/>
```

```
$ cd $MW_HOME
$ cd user_projects/domains/bi/config/fmwconfig
$ cp jps-config.xml jps-config.xml.ORIG
$ vi jps-config.xml
$ diff -b jps-config.xml jps-config.xml.ORIG
84d83
<   <property name="virtualize" value="true"/>
```

After the edits, the file **jps-config.xml** should look something like this:

```
Line#   Text
80      <serviceInstance name="idstore.ldap" provider="idstore.ldap.provider">
81         <description>LDAP Identity Store Service Instance</description>
82         <property name="idstore.config.provider"  value="......
83         <property name="CONNECTION_POOL_CLASS" value="......
84            <property name="virtualize" value="true"/>
85      </serviceInstance>
```

Part 2 - Configuring Oracle Virtual Directory (OVD)

The file **provider.os_xml** needs to be edited by changing the text as shown below:

```
<property name="enabled" value="true"/>
```

```
$ cd $MW_HOME/user_projects/domains/bi/config/fmwconfig/ovd/default/
$ cp provider.os_xml provider.os_xml.ORIG
$ diff -b provider.os_xml provider.os_xml.ORIG
58c58
<             <property name="enabled" value="true"/>
---
>             <property name="enabled" value="false"/>
```

After the edits, the file should look something like this:

```
Line#   Text
55      <provider name="BlindTrustManager">
56         <configClass>oracle.ods.virtualization.config.BlindTrustManagerProviderConfig</.....
57         <properties>
58            <property name="enabled" value="true"/>
59         </properties>
60       </provider>
```

11.4 Mapping Fusion Middleware Application roles to EM LDAP Users

As a pre-requisite, all the steps in in the three prior sections: 11.1, 11.2, and 11.3 must have already been completed.

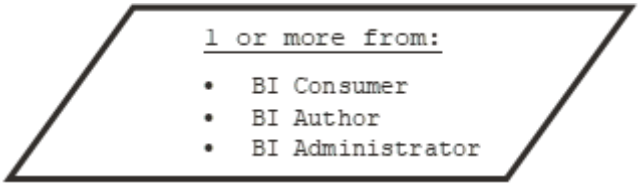
If the prior section was followed, the full OAS stack should be down. If not, go back to that section and re-check the steps.

Start the full OAS stack, using the instructions in 'Appendix E - Starting the full OAS stack'.

This section will detail the steps for granting OAS Fusion Middleware Application roles to LDAP Users, and/or LDAP Groups, utilizing Fusion Middleware Control.

These same LDAP users and LDAP groups will be shared between the two products (Enterprise Manager and Oracle Analytics Server).

The specifics role names and mapping form the basis of the termination in the flow chart shown in section 9.1.6 - OAS Privilege Assignment:



NOTES:

- The three roles above would have already been created as part of the initial OAS Configuration.
- These roles are managed by the Oracle Platform Services (**OPSS**) as part of the '**obi-stripe**'.
- The '**obi-stripe**' is created as part of OAS configuration, and populated with these three roles, in a hierarchical manner.

OBI-Stripe Role	Description
BI Consumer	Can login to OAS and view reports
BI Consumer	Can also schedule OAS reports
BI Author	Can manipulate the OAS catalog (cut/copy/paste/delete)
BI Author	Can also edit OAS reports
BI Administrator	Full access to OAS, including access to the special **Administration** screens.

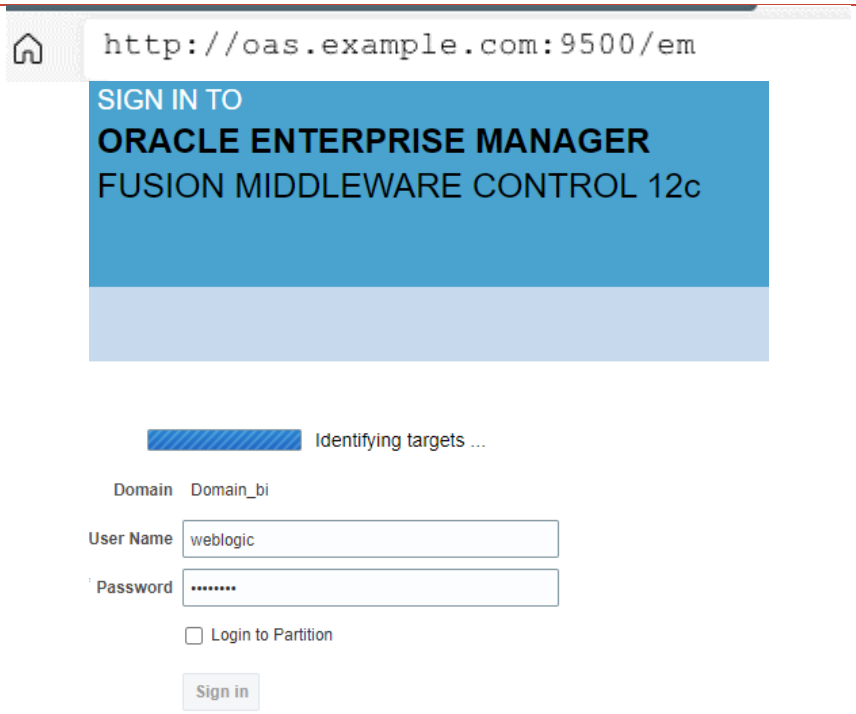
Note: Step 4 has 11 total parts

11.4.1 Step 4 Part 1 – Login to Fusion Middleware Control

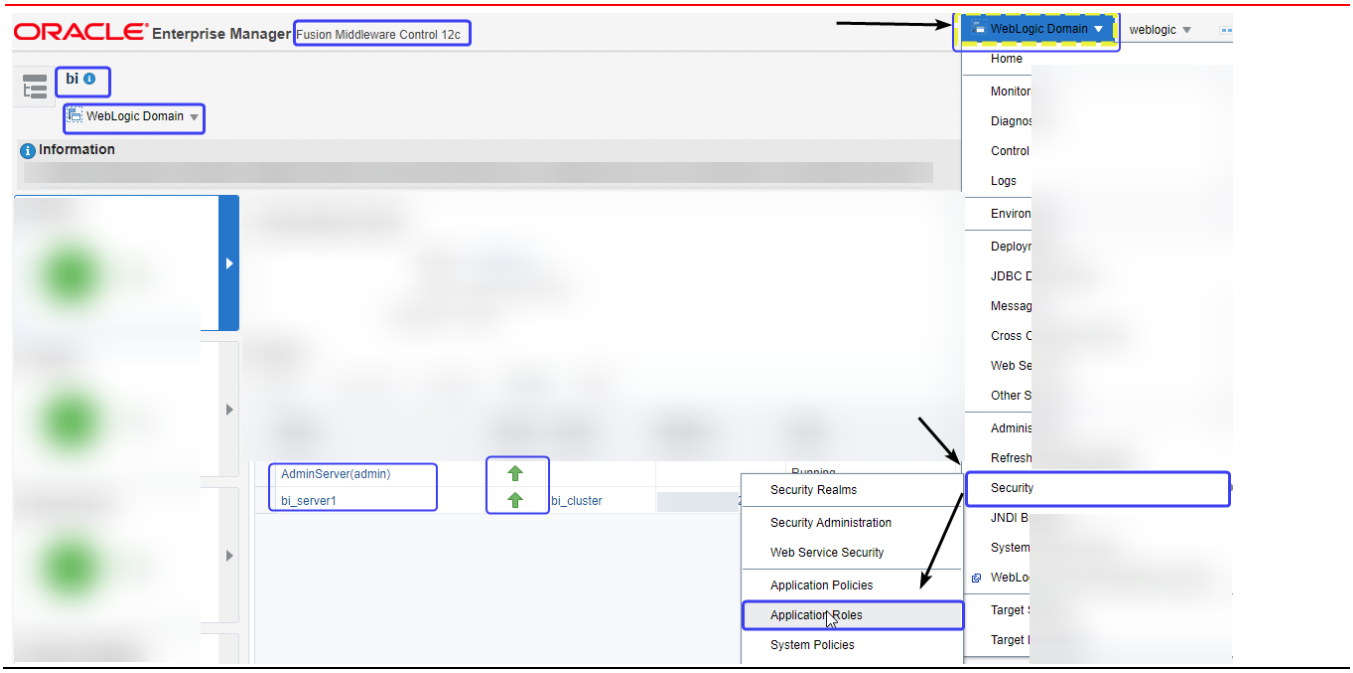
Login to Fusion Middleware control, in a browser, as the 'weblogic' user.

For example:

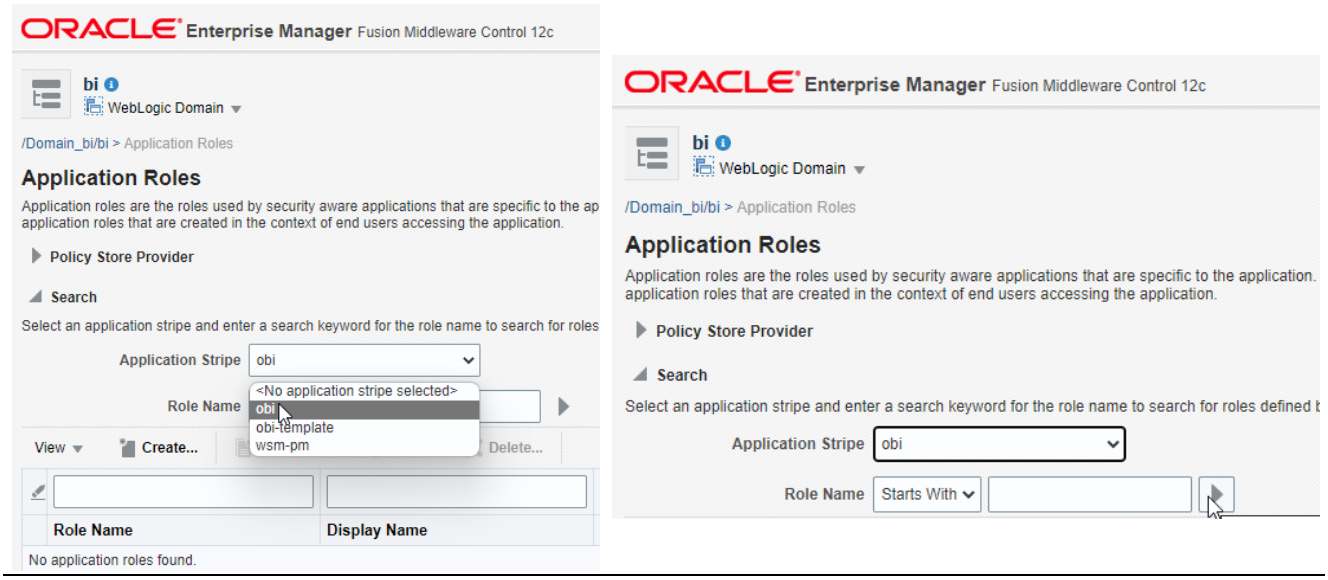
http://oas.example.com:9500/em



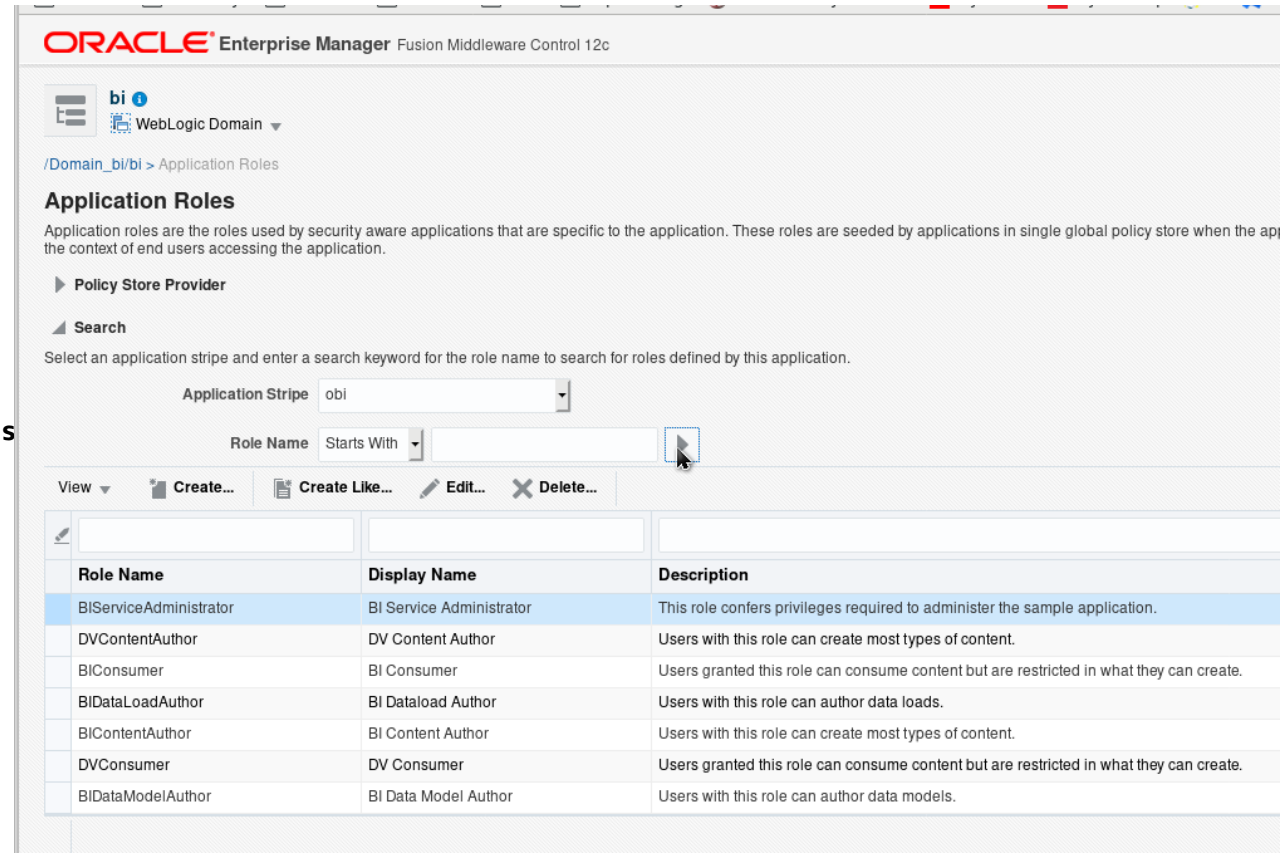
11.4.2 Step 4 - Part 2 - Configure Fusion Middleware Application Roles for OAS



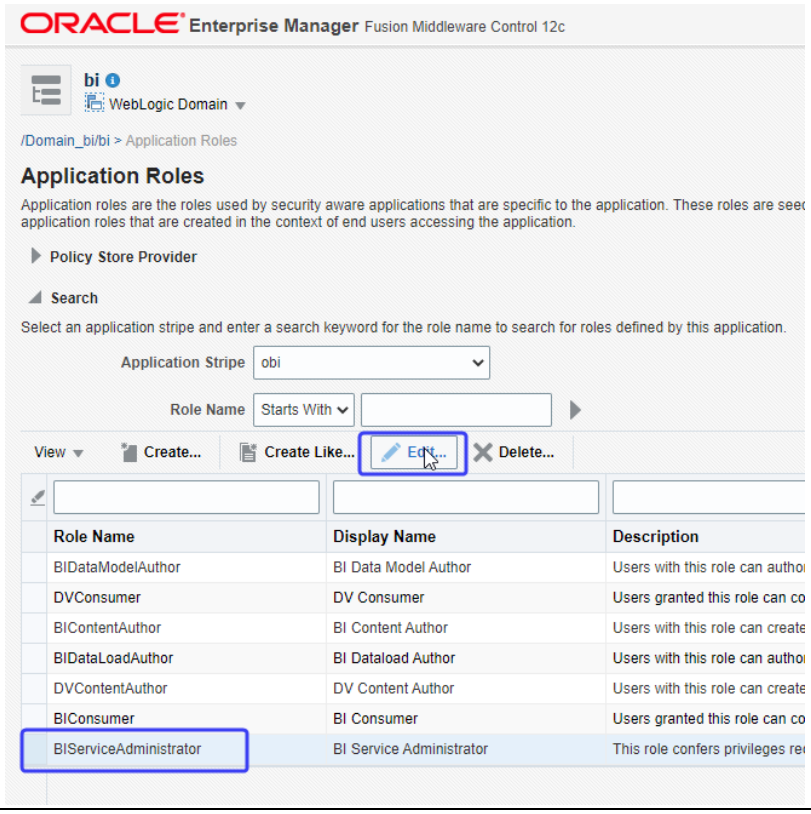
11.4.3 Step 4 - Part 3 - Select the 'obi' Application Stripe and click the search button



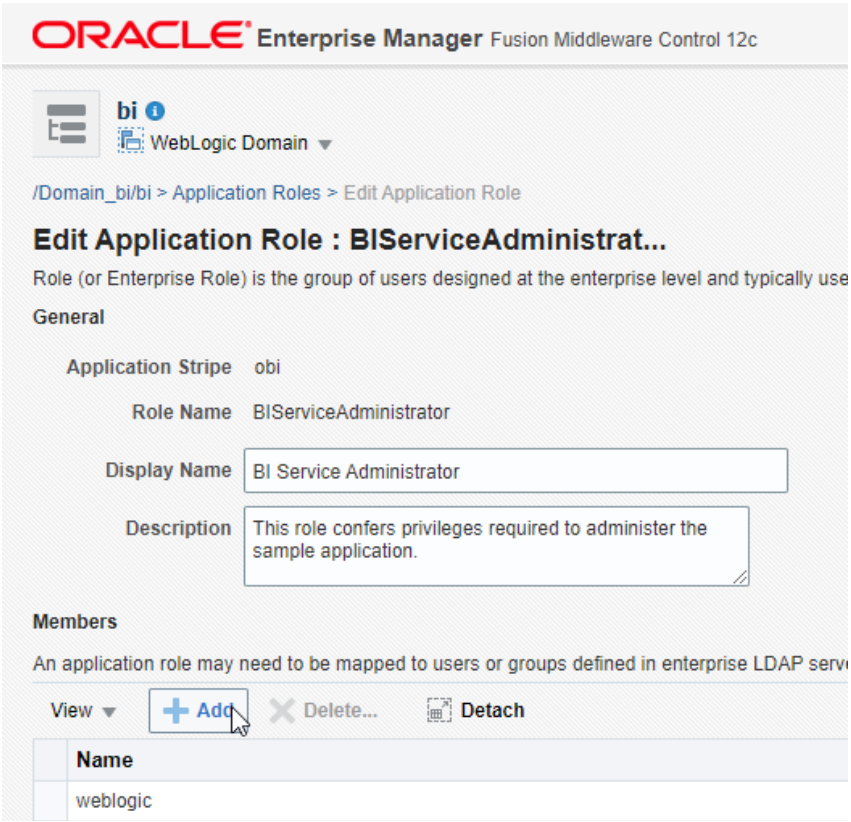
11.4.4 Step 4 - Part 4 - Select the Role BIServiceAdministrator



11.4.5 Step 4 - Part 5 - Press Edit

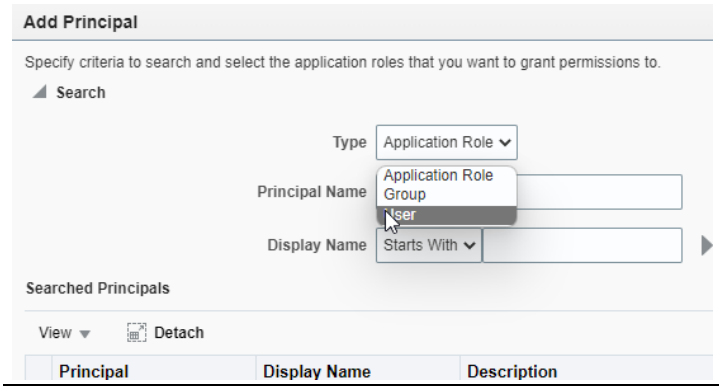


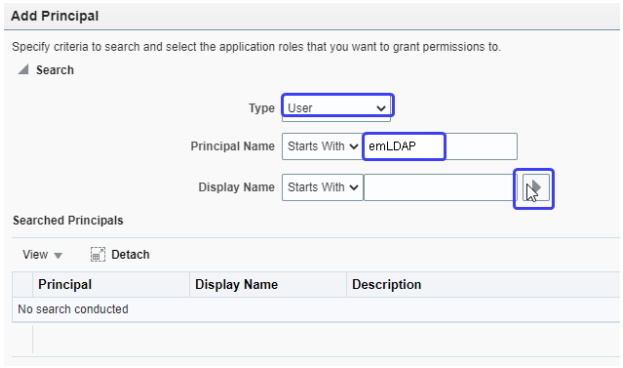
11.4.6 Step 4 - Part 6 – Press Add



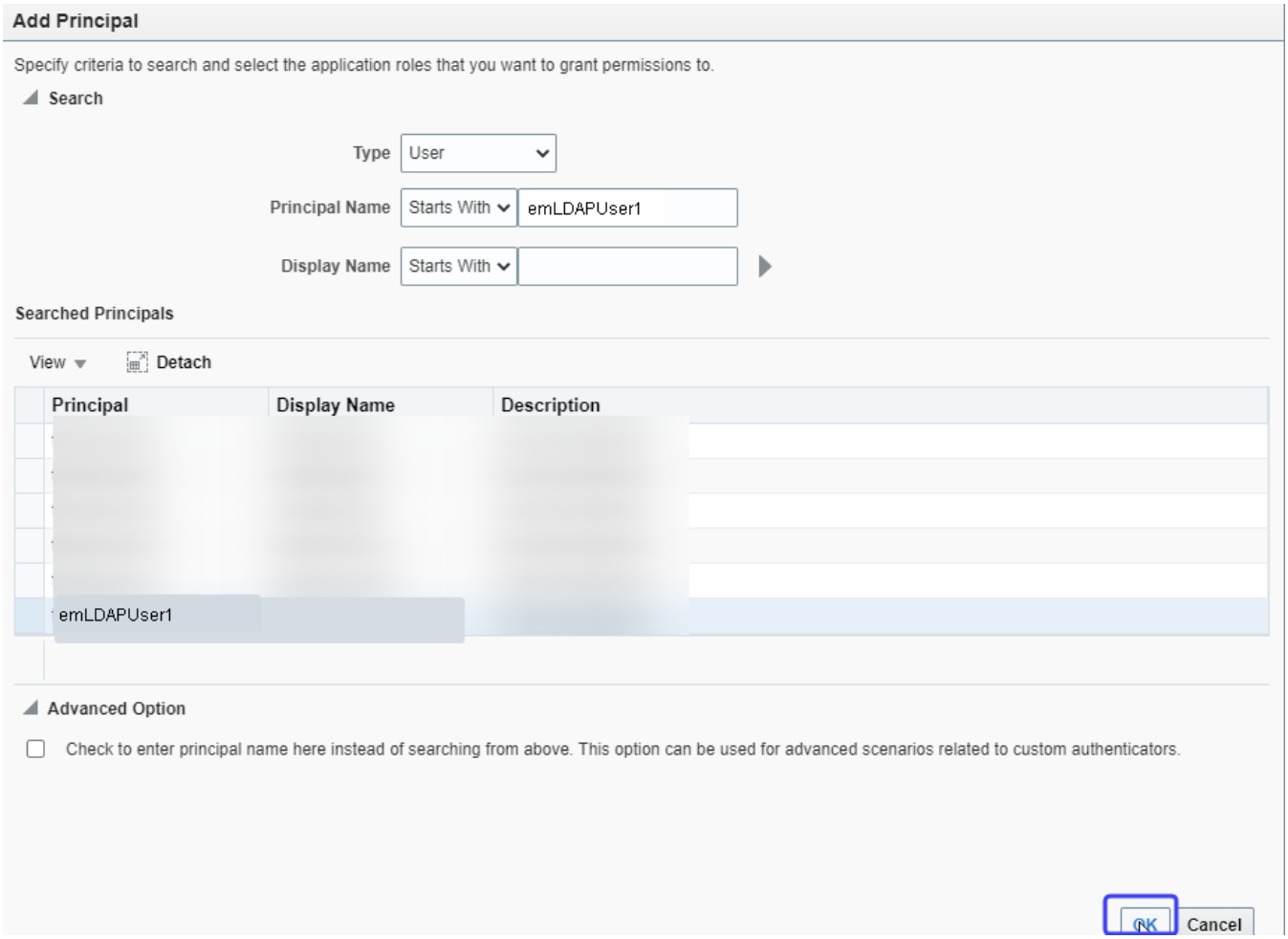
11.4.7 Step 4 - Part 7 - Add the required Principals

Enter a value for the Principal Name, for example emLDAP, and press the search arrow

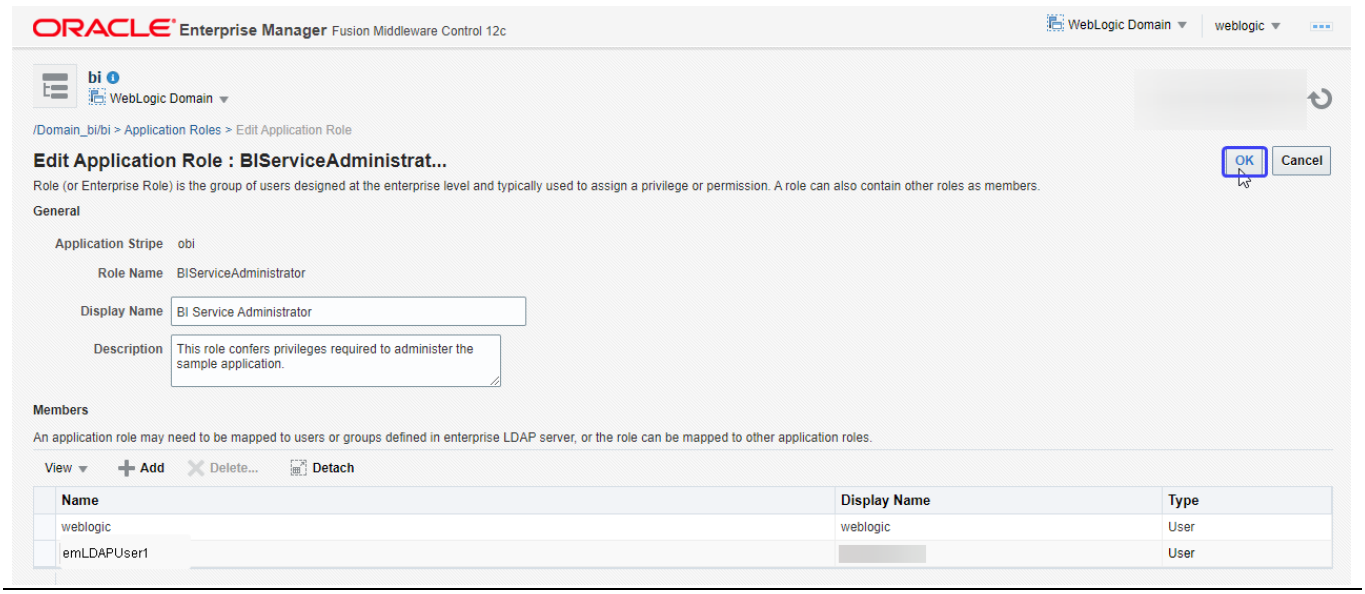




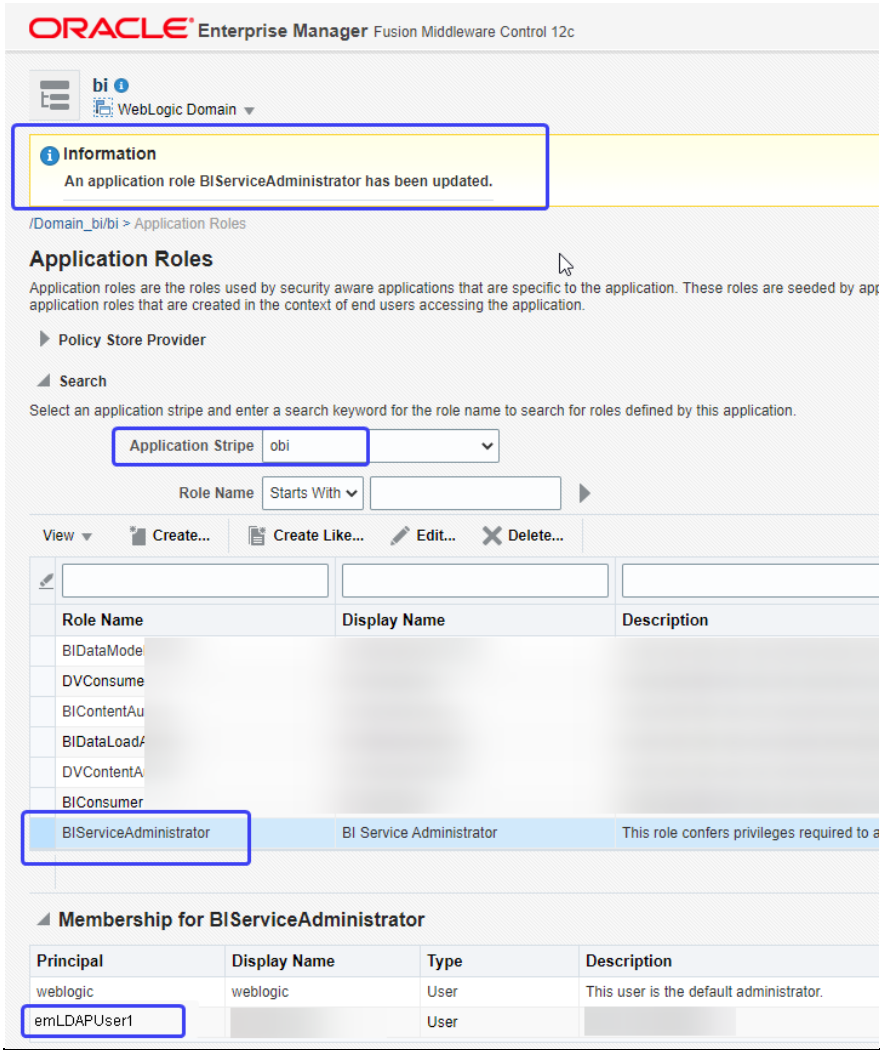
11.4.8 Step 4 - Part 8 - Select an LDAP user, for example emLDAPUser1 and press OK in bottom right



11.4.9 Step 4 -Part 9 – Confirm the selection by pressing OK in the top right



11.4.10 Step 4 – Part 10 – Confirm the changes are complete



11.4.11 Step 4 - Part 11 - Push any changes to OBI stripe

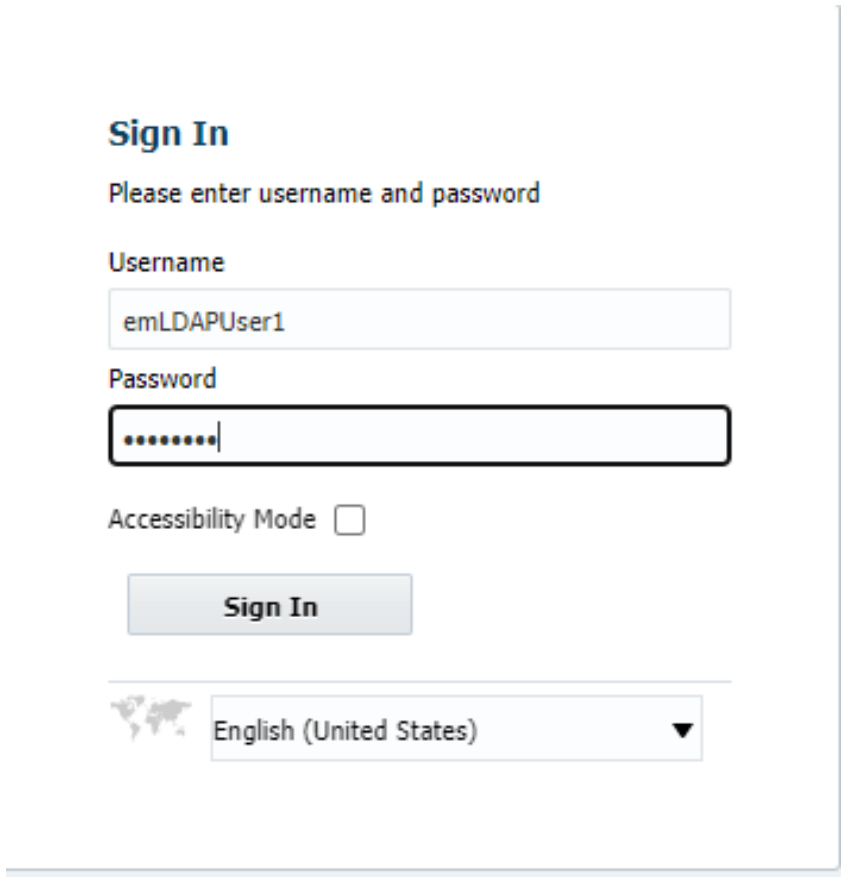
It can sometimes be necessary to bounce OAS for the changes to the OBI-stripe to propagate. To push the changes immediately:

- Bring Down OAS, the Admin Server, and the node manager:
  - Appendix F - Stopping the full OAS stack
- Start the full OAS stack:
  - Appendix E - Starting the full OAS stack

11.4.12 Step 4 – Part 12 - Confirm the operations from the prior step are complete

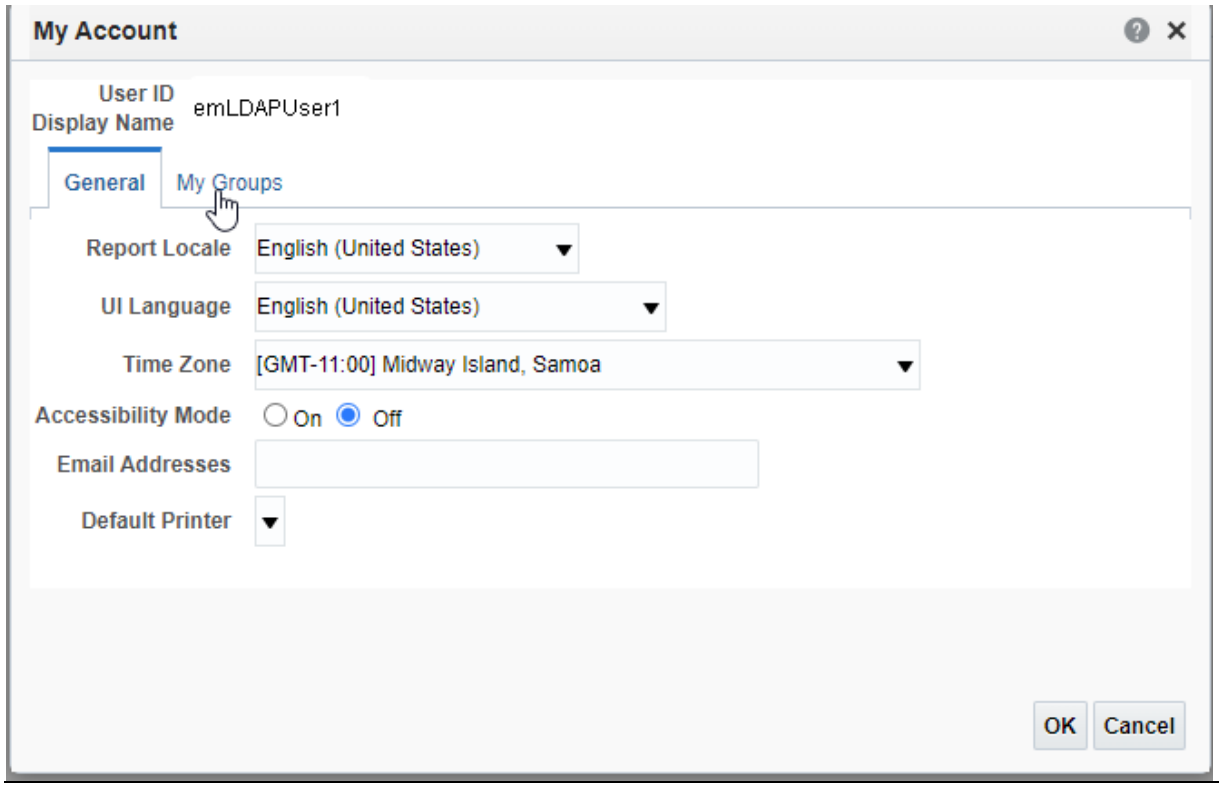
For final confirmation of the above steps, login to OAS as LDAP user that was just configured.

11.4.12.1 Step 4, Part 12, section 1 - Login to the OAS console as the user edited, for example emLDAPUser1

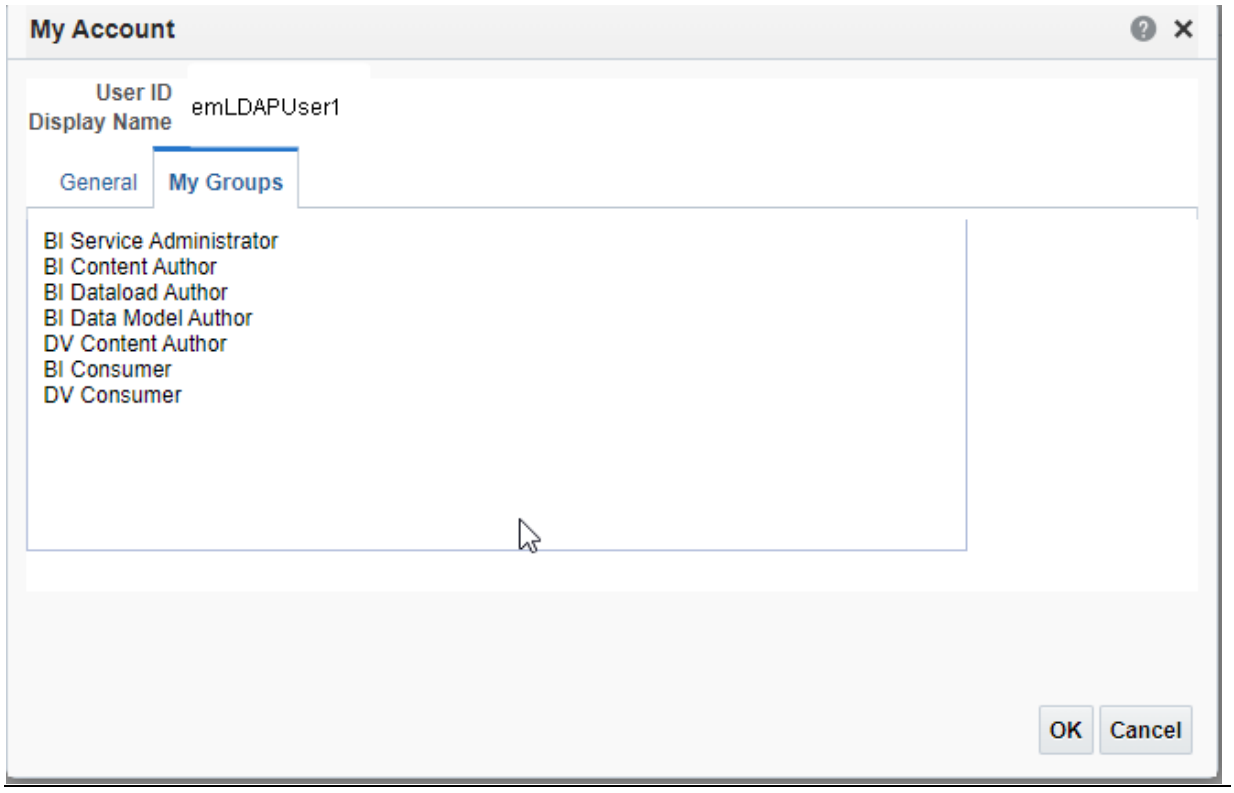


11.4.12.2 Step 4, part 12, section 2 - In the top right hand of the screen, select the user's icon and My Account

11.4.12.3 Step 4, part 12, section 3 - Select the tab My Group



11.4.12.4 Step 4, part 12, section 4 - Confirm the correct entries in My Groups



11.5 Step 5 – Operations Complete

All the required operations to configure OAS for LDAP are now complete.

- If single sign-on is not required, skip to 'Chapter 14 - Configuration of required OAS Datasource(s)'.
- If single sign-on is required, continue to the next chapter, 'Chapter 12 - Optional Configuration of SSO on top of LDAP'.

CHAPTER 12. OPTIONAL CONFIGURATION OF SSO ON TOP OF LDAP

If Single Sign On is required to allow for a single login to both Enterprise Manager, Oracle Analytics Server, and any other possible applications, several additional steps need to be performed on top of the OAS configuration for LDAP.

For these examples, Oracle Access Manager (OAM) will be configured on top of Oracle Internet Directory (OID).

Other single sign on solutions is likely possible but will not be documented in this workbook.

Consult the Fusion Middleware Documentation Set[23] for further details.

The additional steps required for OAM on top of OID, for OAS, are summarized below, with direct cross references to the relevant sections.

1. Installation of Oracle HTTP Server (OHS) – Section 12.1.
2. Extending OAS WebLogic Domain with collocated OHS using the config.sh script.
3. Integrating OHS into WebLogic Domain using wlst.sh – Section 12.4.
4. Configuration of OHS for OAS using Fusion Middleware Control – Section 0.
5. Test access to OAS using the OHS port – Section **Error! Reference source not found.**.
6. Configuration of the OAM Identity Asserter to WebLogic Security Providers.
7. Configuration of Oracle Webgate, running on top of OHS.
8. OAS Required Steps – Section 13.1.8.
9. Edit ServerName directive in httpd.conf – Section 13.1.8.4.
10. Bounce the stack – Section 13.1.8.5

12.1 Installation of OHS

A pre-requisite for OAM is a properly configured WebLogic domain, with a co-located OHS installation inside of the same domain.

For complete details on installation and management of Oracle HTTP Server, please consult the full set of documentation books:

- Oracle HTTP Server 12.2.1.4.0

The following set of screenshots details the installation of OHS.

These steps are somewhat error prone, so a backup of the OAS WebLogic domain should be taken prior to these steps.

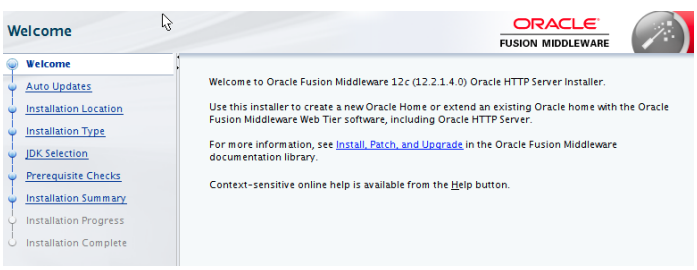
- Make sure all processes associated with OAS are shut down.
  - See 'Appendix F- Stopping the full OAS stack' for details.
- Launch the OHS installation UI for the appropriate Operating System Platform

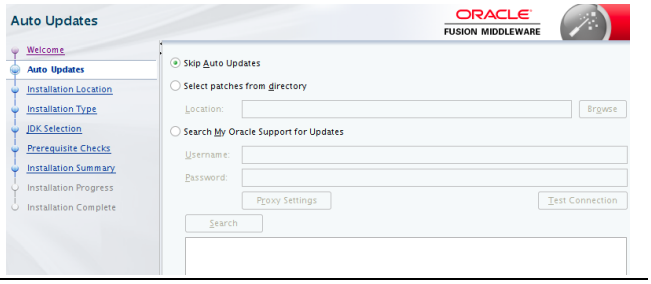
```
$ ./fmw_12.2.1.4.0_ohs_linux64.bin
Preparing to launch the Oracle Universal Installer from /tmp/OraInstall2020-09-30_11-22-53AM
Launcher log file is /tmp/OraInstall....log.
Checking if CPU speed is above ... Passed
Checking monitor: must be configured to ...  Passed
Checking swap space: must be greater than ...   Passed
Checking if this platform requires a 64-bit JVM.   Actual 64  ...  Passed
Checking temp space: must be greater than ...    Passed
```

[23] (Oracle® Analytics Enterprise Deployment Guide for Oracle Analytics Server, 2020)

12.1.1 Step 1 - OHS Installation – Welcome; Step 2 – skip updates

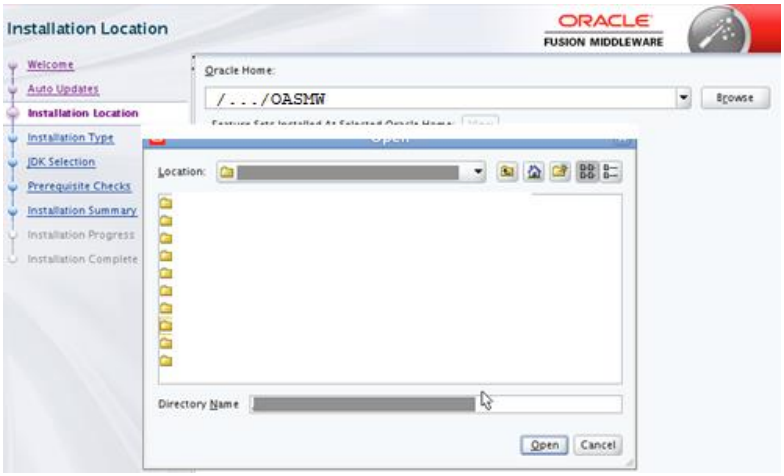
» Skip or apply as needed.





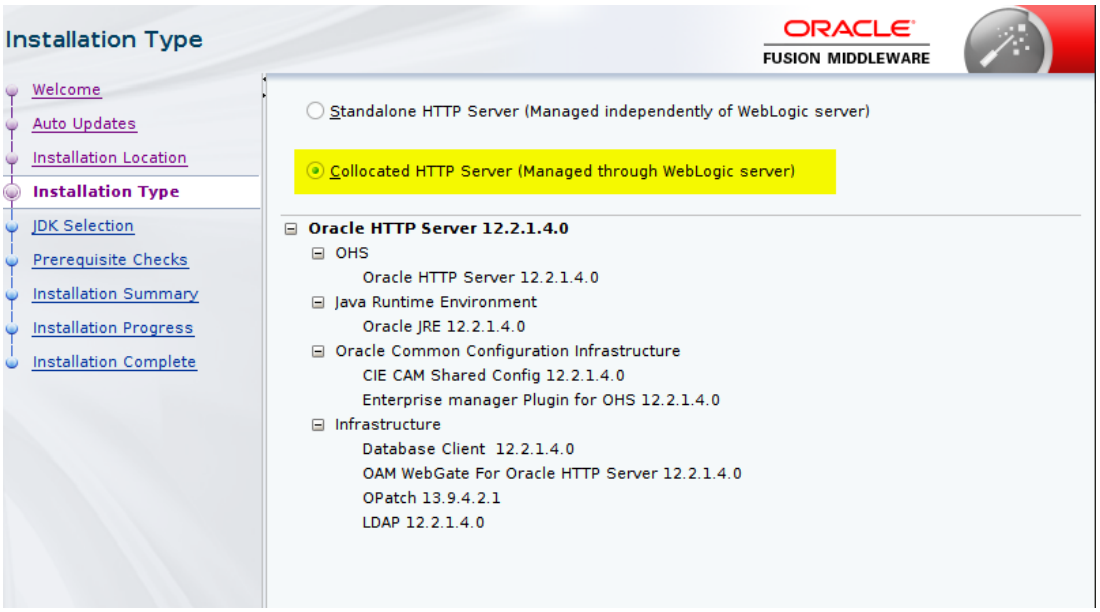
12.1.3 Step 3 - OHS Installation – Choose Middleware Home

» Either browse or type the full path of the MW_HOME



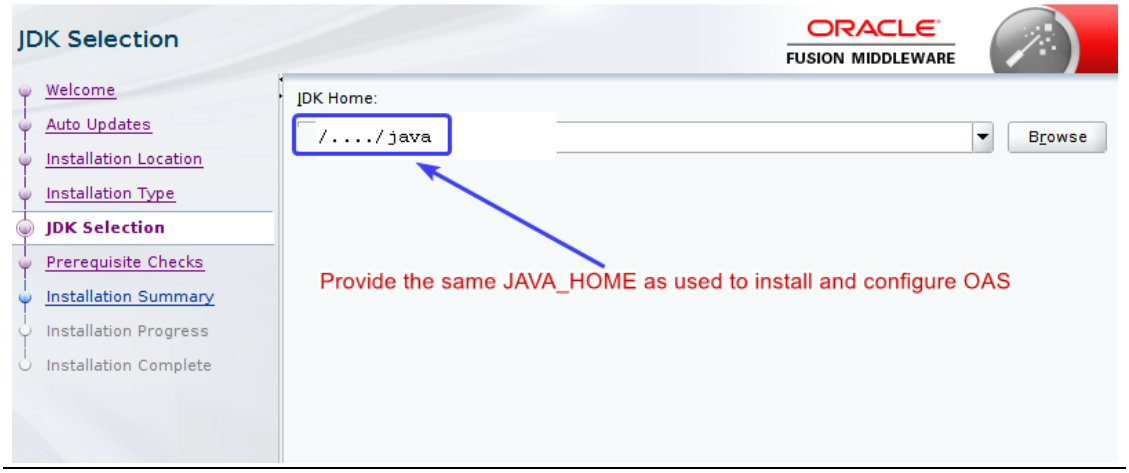
12.1.4 Step 4 - OHS Installation – Installation Type

» Make sure to select Collocated HTTP Server



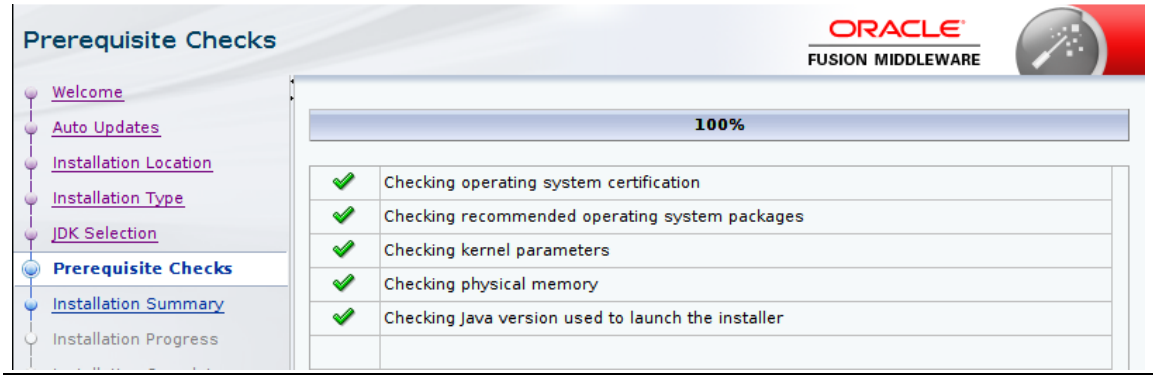
12.1.5 Step 5 - OHS Installation - Choose JAVA HOME location

» Provide same JDK as used throughout WebLogic configuration



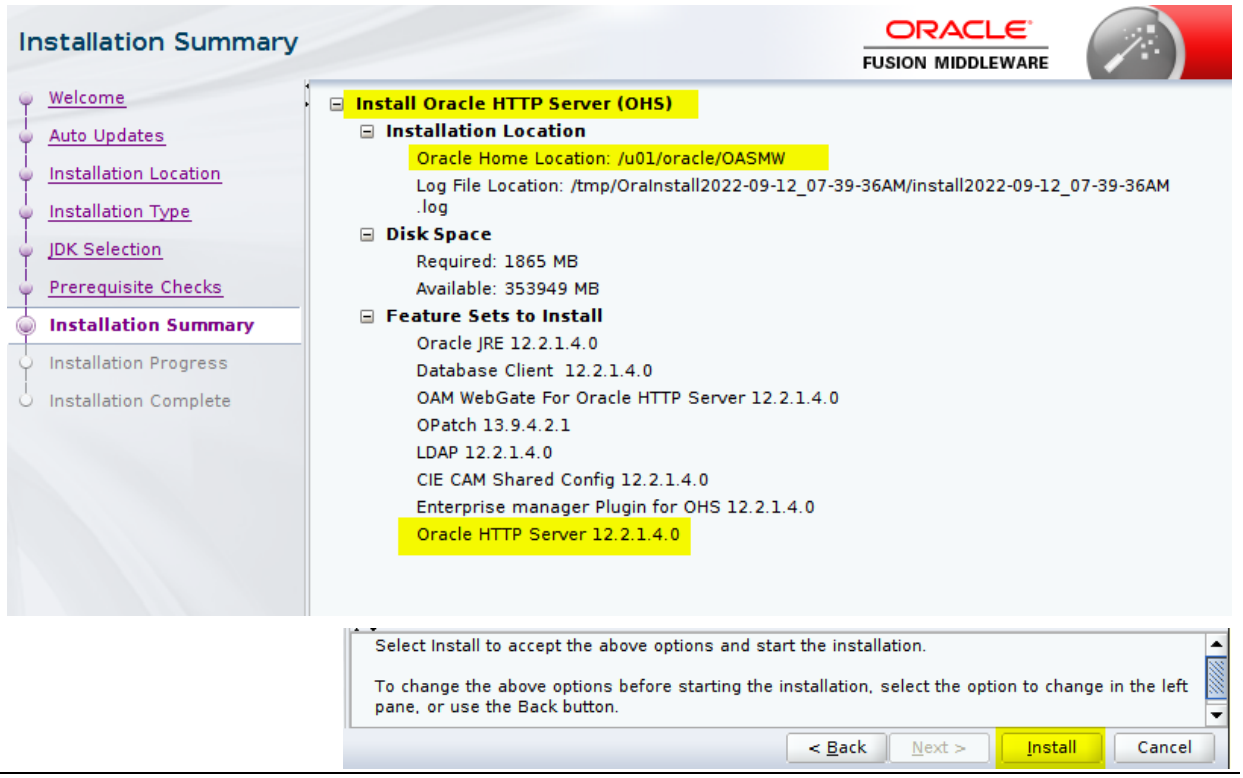
12.1.6 Step 6 - OHS Installation – Prerequisite Checks

» Confirm no pre-requisite failures



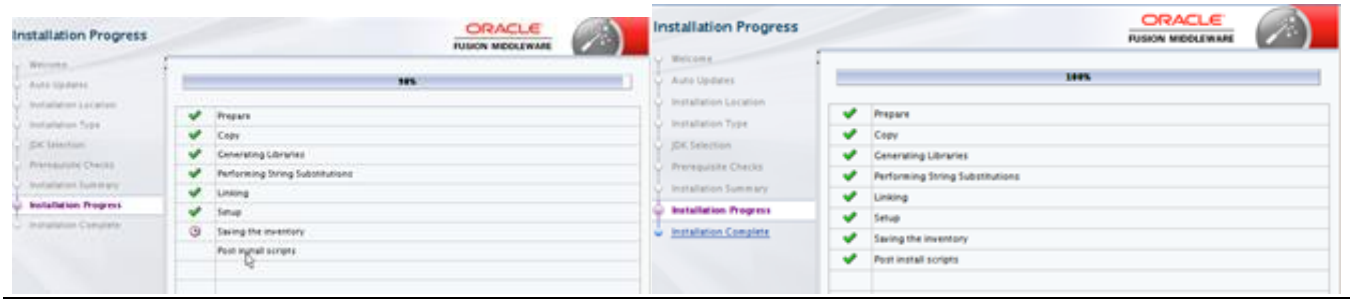
12.1.7 Step 7 - OHS Installation – Installation Summary

» Review results of pre-requisite tests.

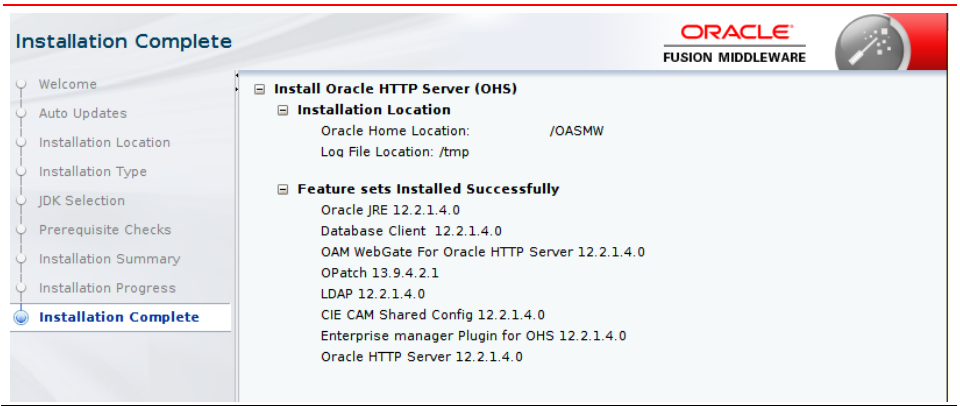


12.1.8 Step 8 - OHS Installation – Installation Progress

» Follow ongoing status until complete.



12.1.9 Step 9 – Installation Complete



12.2 Extending OAS WebLogic domain with collocated OHS

Configuration of OHS requires Extending the WebLogic Domain used by OAS via the config.sh script.

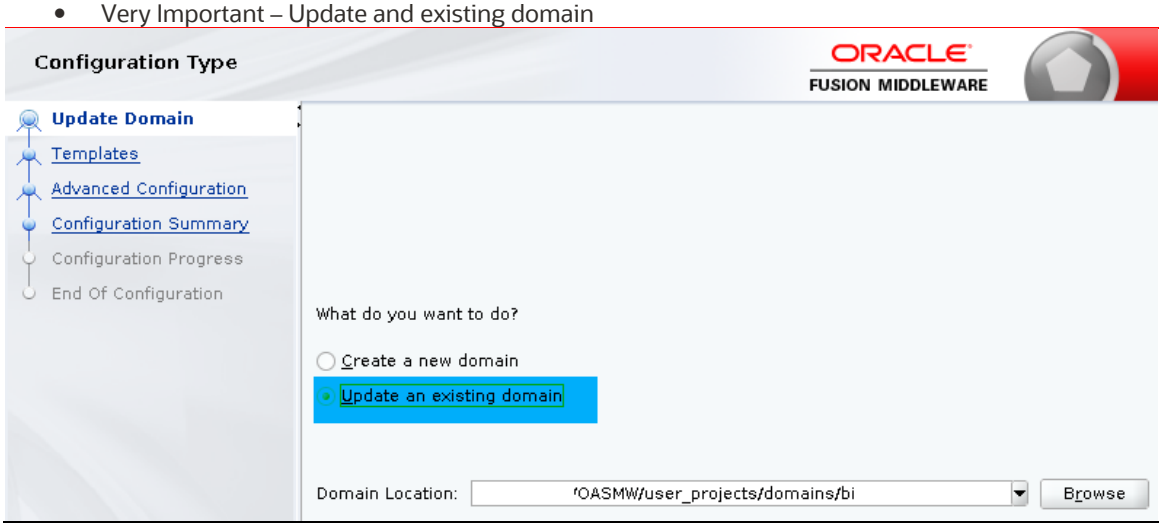
Launch the WebLogic Configuration Wizard:

```
cd $MW_HOME/oracle_common/common/bin
./config.sh
```

12.3 OHS Configuration

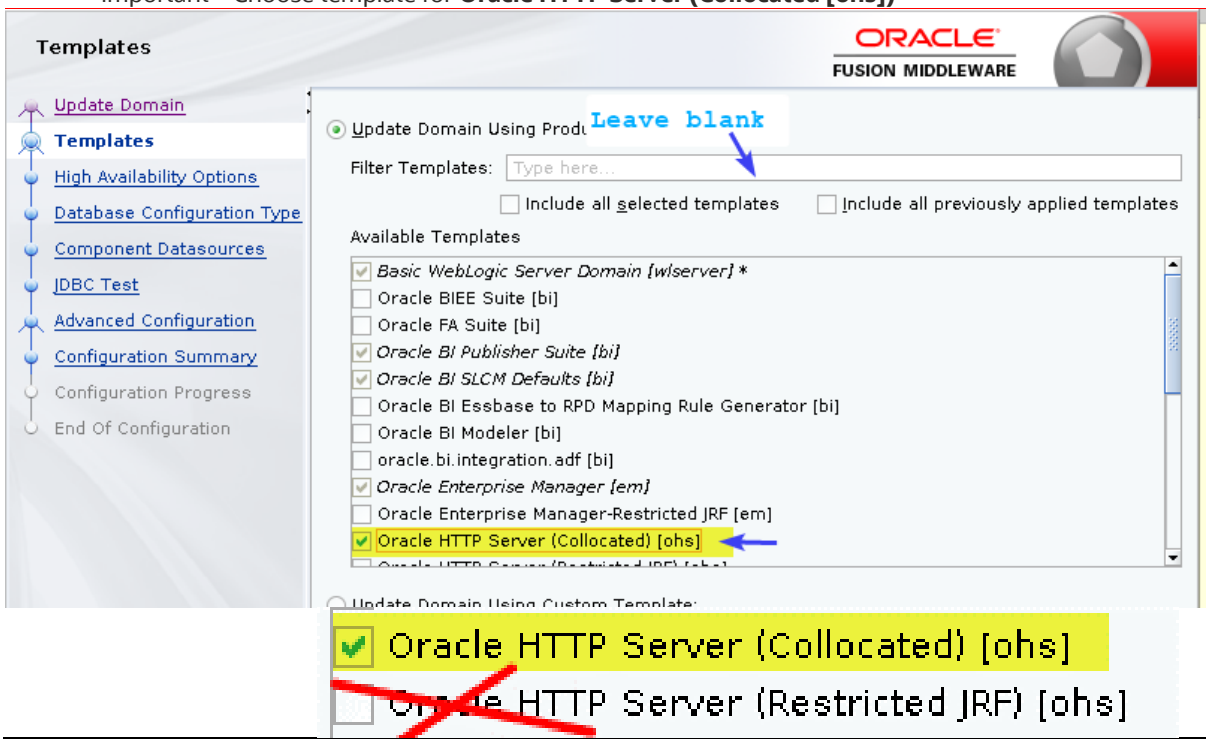
12.3.1 Step 1 - OHS Configuration – Update an existing WebLogic Domain

- Very Important – Update and existing domain



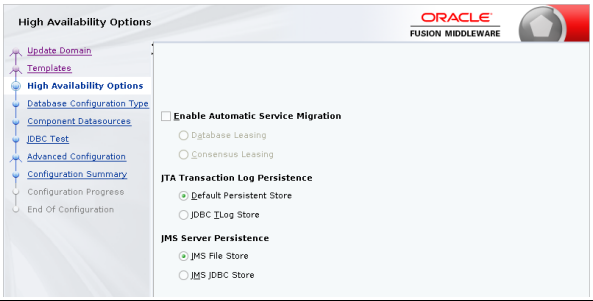
12.3.2 Step 2 - OHS Configuration – Choose Oracle HTTP Server - Collocated [OHS]

- Important – Choose template for **Oracle HTTP Server (Collocated [ohs])**



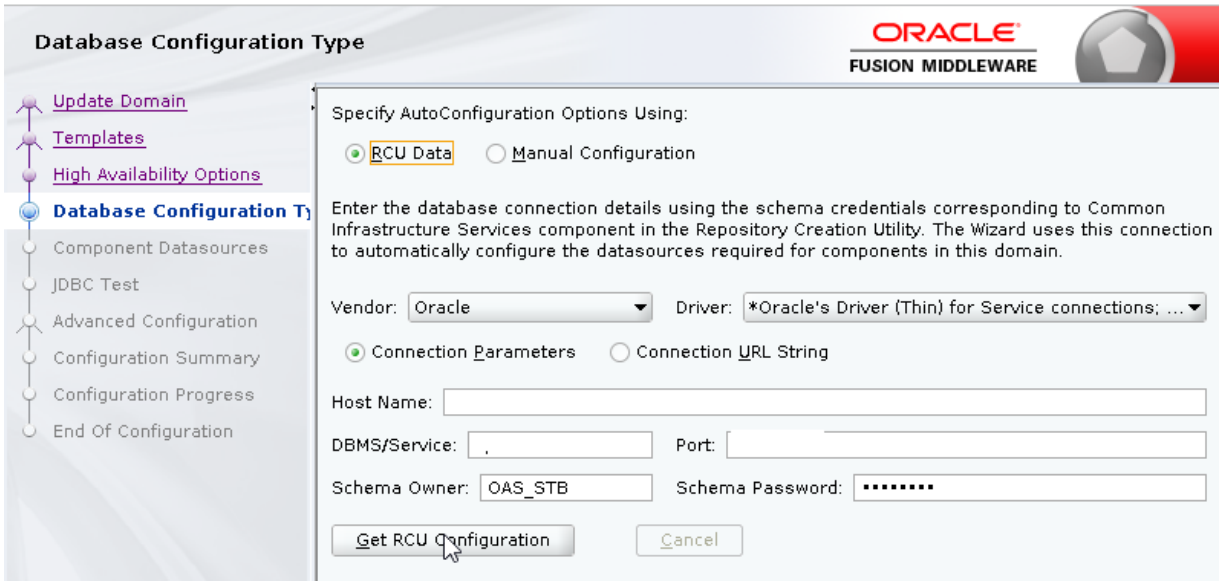
12.3.3 Step 3 - OHS Configuration - High Availability Options

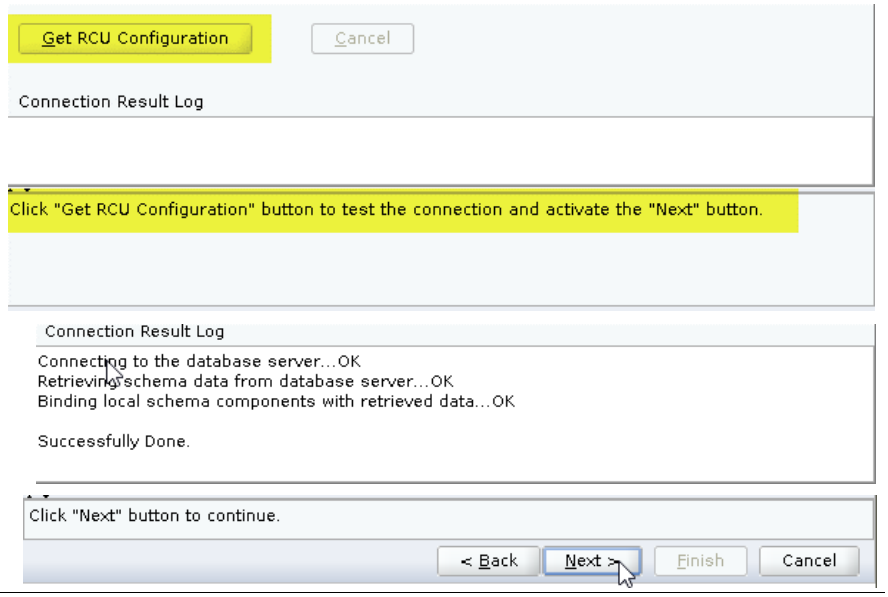
- Review entries, do not change



12.3.4 Step 4 - OHS Configuration – Database Configuration Type

- Select Get RCU Configuration.
- Confirm successful connection.
- Click Next

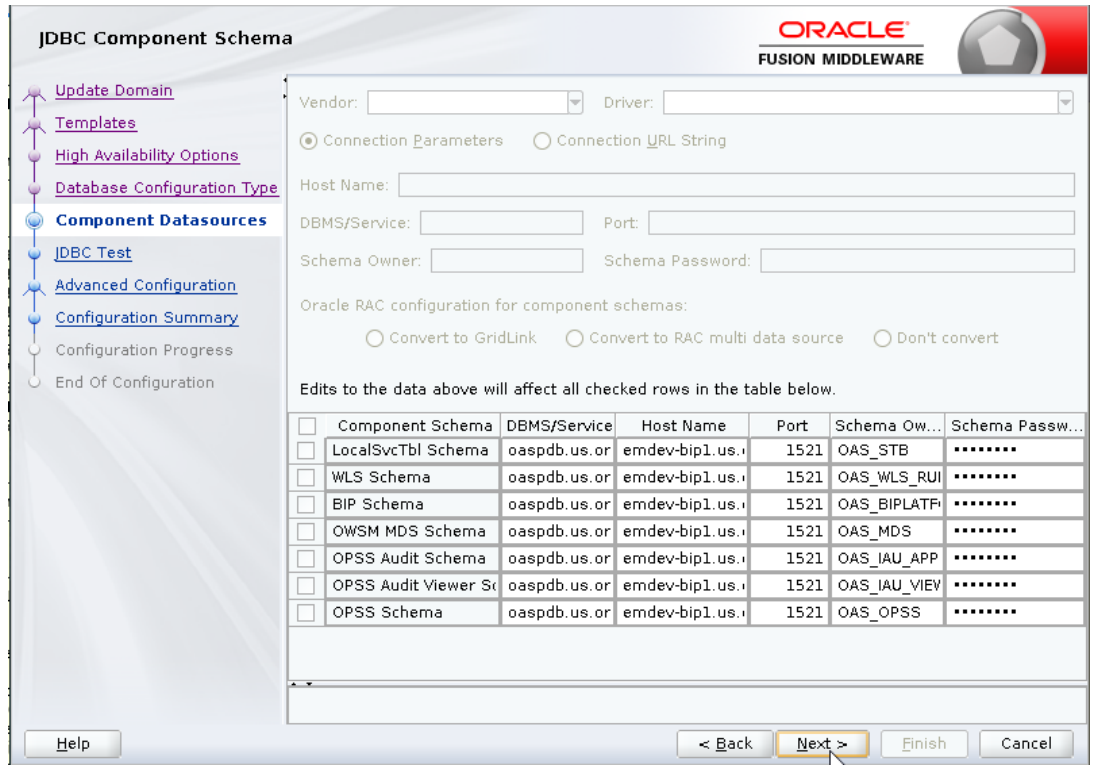




12.3.5

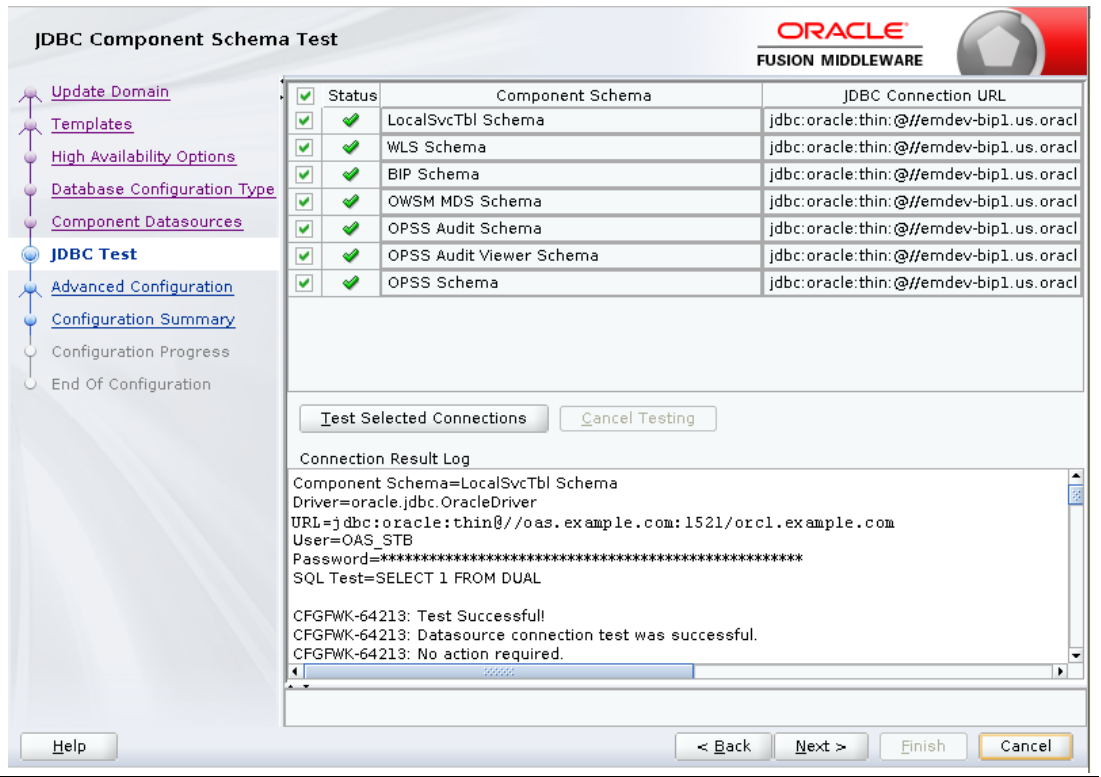
12.3.6 Step 5- OHS Configuration – Component Datasources

- Review entries – Do not change



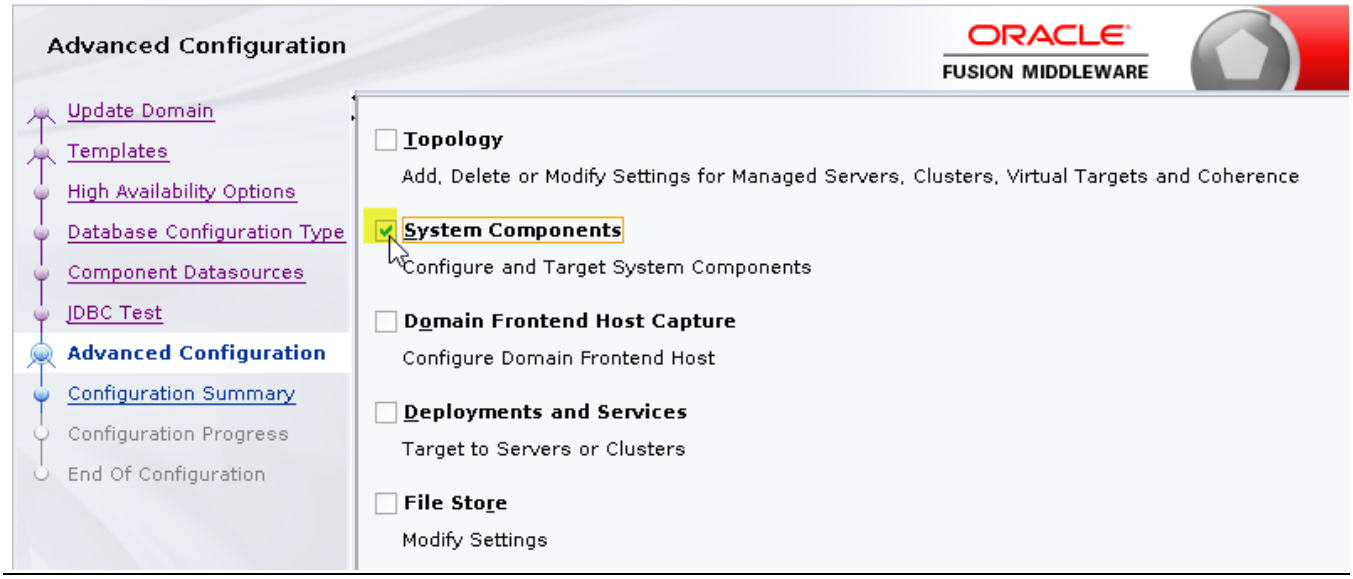
12.3.7 Step 6 - OHS Configuration – JDBC Test

- Confirm all successful connections



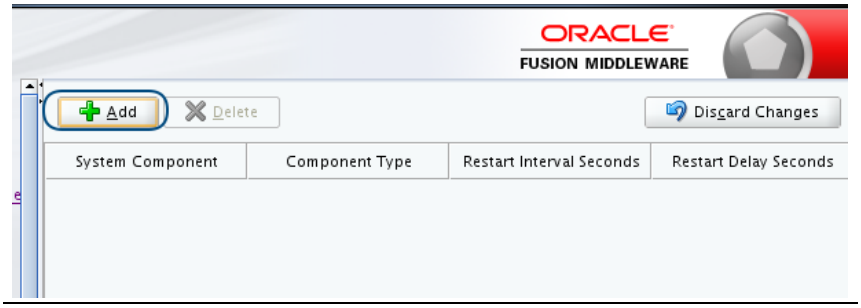
12.3.8 Step 7 - OHS Configuration – Advanced Configuration

- Only check the box for **System Components**



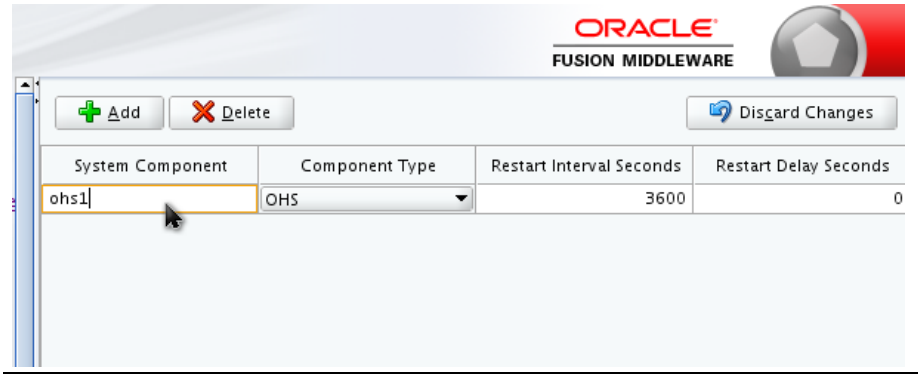
12.3.9 Step 8 OHS Configuration – System Components

12.3.9.1 Part 1 Choose Add



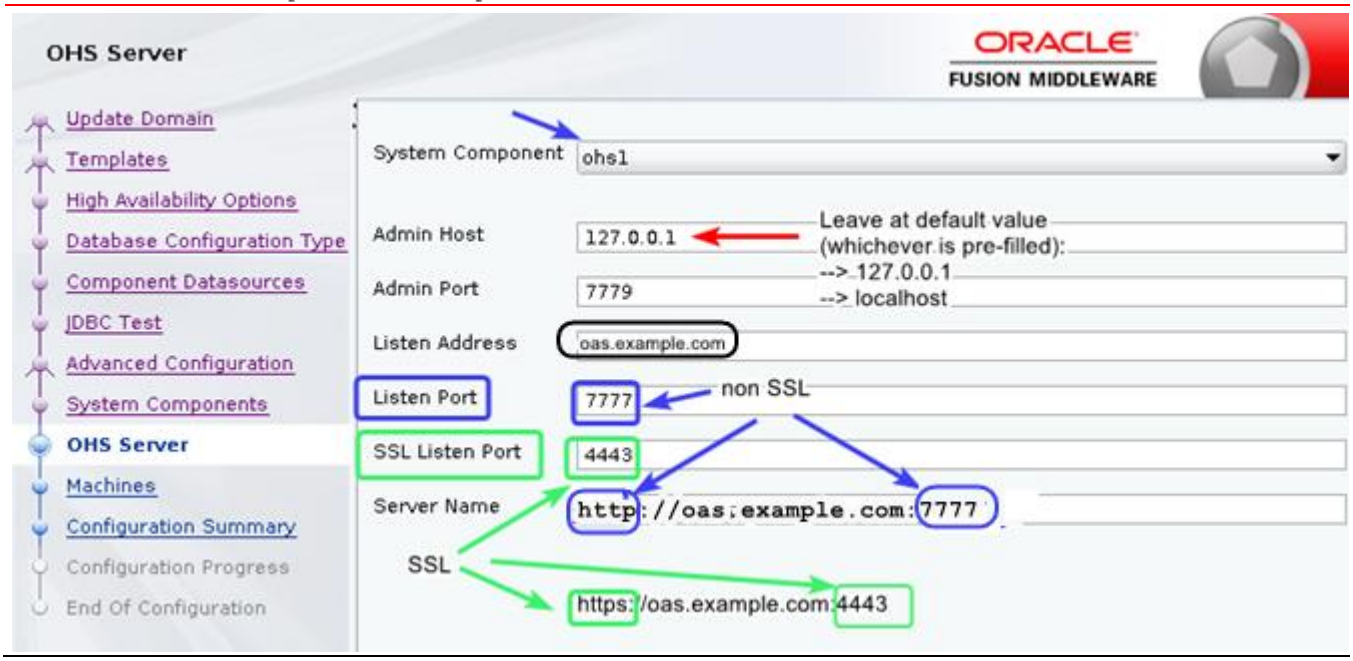
12.3.9.2 Part 2 - Change Name as appropriate

- for example, ohs1
- Do not change other parameters



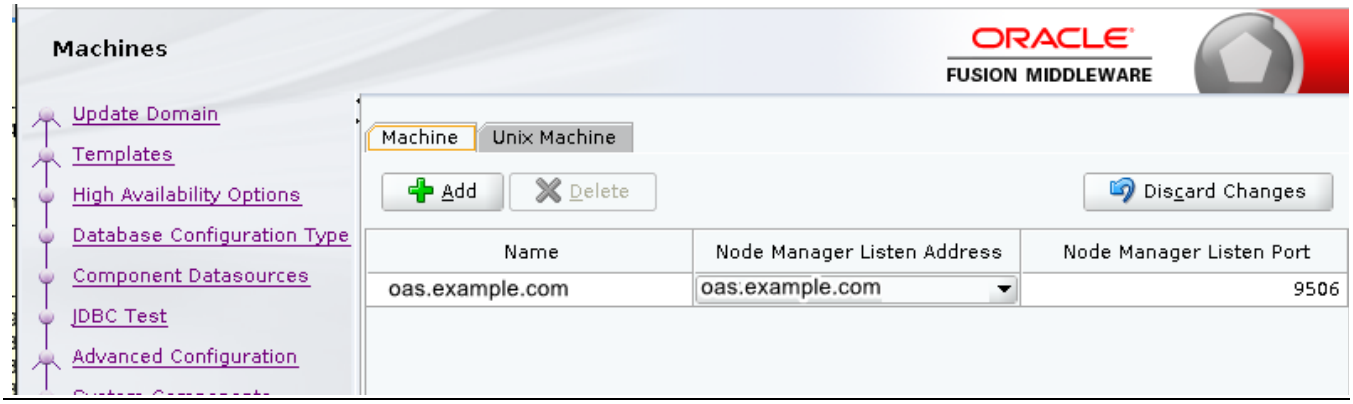
12.3.10 Step 9 - OHS Configuration – OHS Server

1. System Component – will be name provided in prior step, i.e., **ohs1**
2. Admin Host:
   – VERY IMPORTANT: Leave the default value of **localhost** or **127.0.0.1** **[**Mos Note: Doc ID 2606314.1**]**
3. Admin Port – Leave at 7779. No checking for port conflicts are done.
4. Listen Address – Depending on network topology, either leave the field blank (listen on all network interfaces) or provide the local hostname (listen only on physical network connection associated with this hostname).
5. Listen Port – Default of 7777 is good. This is the port of the primary server that OHS is configured with.
6. SSL Listen Port – Default of 4443 is fine. This is the port of the primary SSL virtual server.
7. Server Name – Ensure this is exactly as shown:
   a. **http** or **https** (depending on security topology).
   b. Local hostname (**not** localhost or 127.0.0.1)
   c. :7777 or :4443 - Must match port from **step 5** (**http**) or **step 6** (**https**) above.
8. For this example, the Server Name should be one of these:
   a. `http://oas.example.com:7777`
   b. `https://oas.example.com:4443`



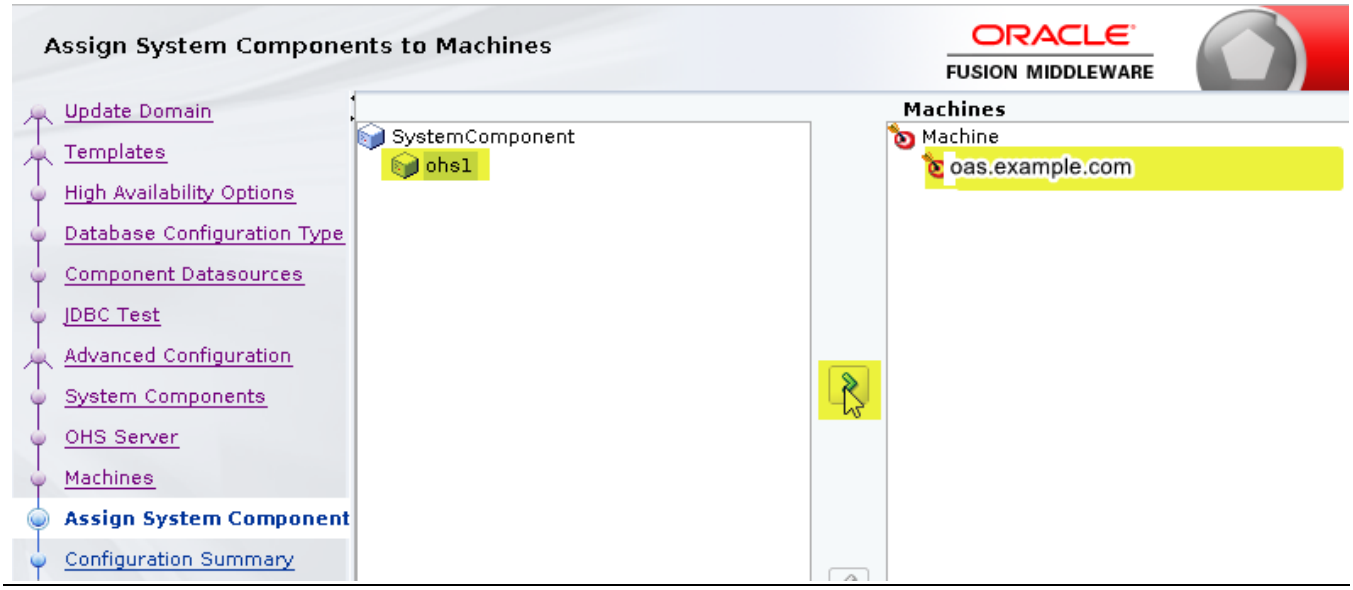
12.3.11 Step 10 - OHS Configuration – Machines

» Confirm Machine Name and Node Manager Listen Address – do not change values

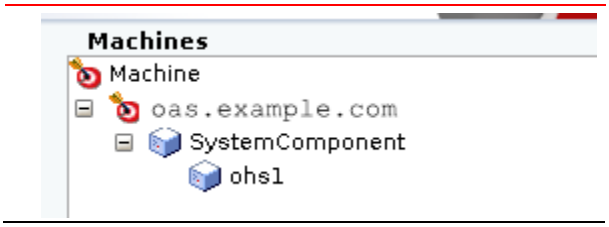


12.3.12 Step 11 - OHS Configuration – Assign System Components

1. Select/highlight the ohs1 component.
2. Select/highlight the Machine (i.e., oas.example.com)
3. Press the right arrow

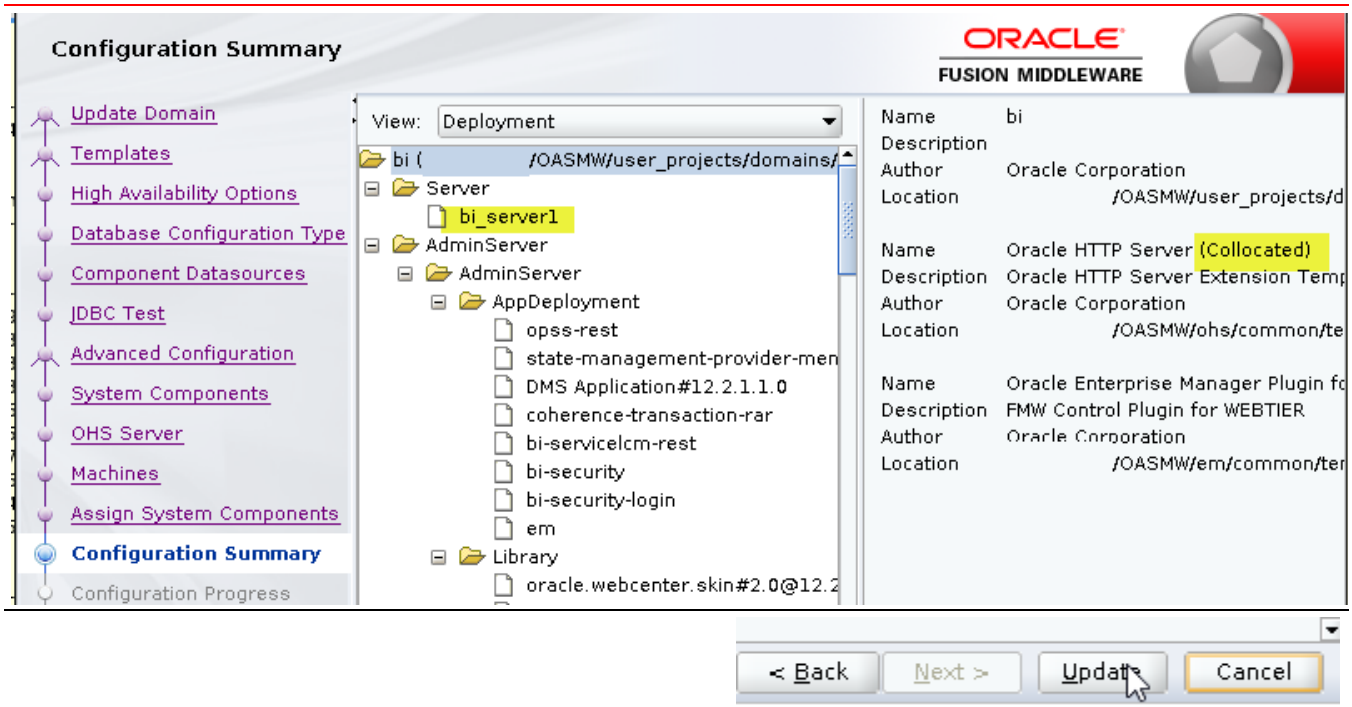


Confirm the tree diagram for **Machines**:



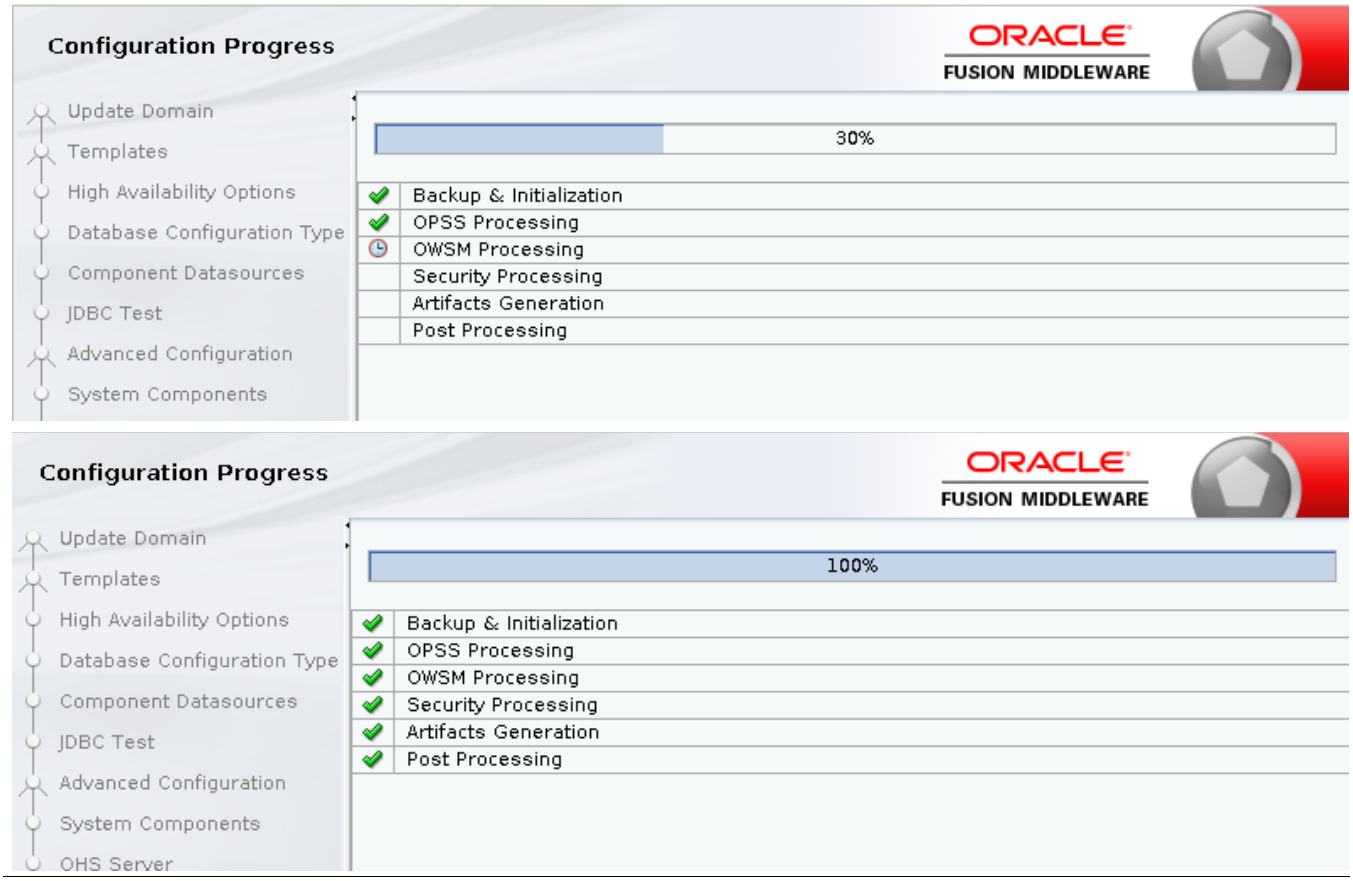
12.3.13 Step 12 - OHS Configuration – Configuration Summary

- Review



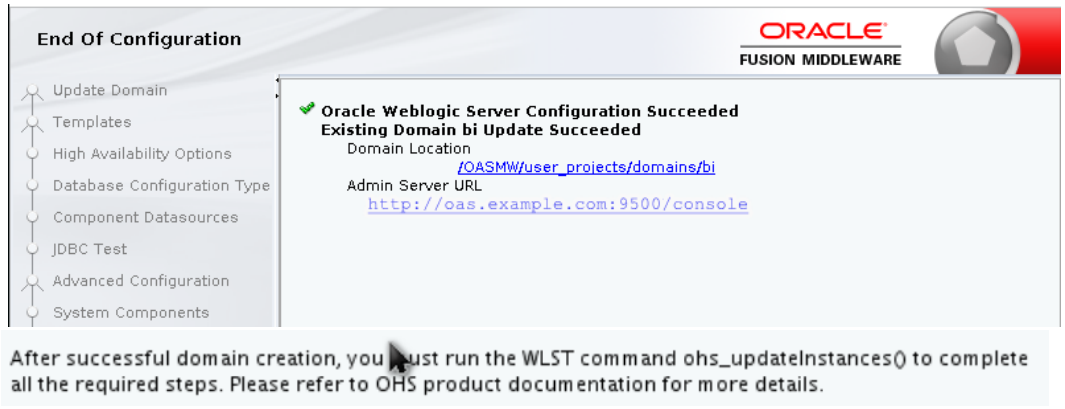
12.3.14 Step 13 - OHS Configuration – Configuration Progress

- Follow progress



12.3.15 Step 14 - OHS Configuration – End of Configuration

- Note the instructions at the bottom of the screen.



- This appears to no longer be required.
- Start up OAS using the instructions in 'Appendix E- Starting the full OAS stack'.

12.4 Integrating OHS into WebLogic Domain using wlst.sh.

Prior to managing OHS as part of the collocated WebLogic Domain in which OAS is configured, it is required to completely reset WebLogic:

- Bring Down OAS, the Admin Server, OHS, and the node manager: Appendix F - Stopping the full OAS stack
- Start the full OAS stack: Appendix E - Starting the full OAS stack

12.4.1 Part 1 - Invoke WebLogic Scripting Tool (WLST)

```
$ $MW_HOME/oracle_common/common/bin/wlst.sh
Initializing Web...
Welcome to W...
Type help() f...
```

12.4.2 Part 2 - Connect to Admin Server

```
wls:/offline> connect()
Please enter your username :weblogic
weblogic
Please enter your password :
Please enter your server URL [t3://localhost:7001] :t3://localhost:9500
t3://localhost:9500
Connecting to t3://localhost:9500 with userid weblogic ...
Successfully connected to Admin Server "AdminServer" that belongs to domain "bi".
Warning: An insecur...
To ensure...
```

12.4.3 Part 3 - Run special command

```
wls:/bi/serverConfig/> ohs_updateInstances()
Location changed to edit custom tree. This is a writable tree with No root.
For more help...
Starting an edit session ...
Started edit session, be sure to save and activate your changes once you are done.
Saving all your changes ...
Saved all your changes successfully.
Activating all your changes, this may take a while ...
The edit lock associated with this edit session is released once the activation is completed.
Activation completed
OHS instances have been updated successfully.
```

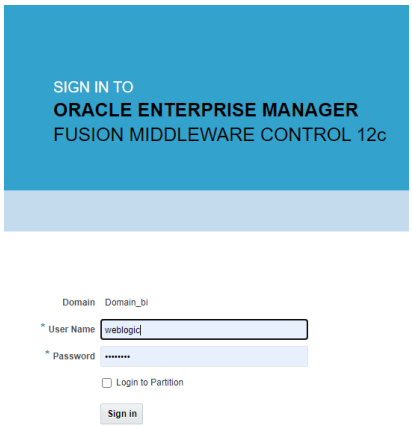
12.4.4 Part 4 - Confirm Correct Operations Performed

```
wls:/bi/serverConfig/> editCustom()
Location changed to edit custom tree. This is a writable tree with No root.
For more help, use help('editCustom')
wls:/bi/editCustom/> ls()
drw-   EMDomain
drw-   JMImplementation
drw-   oracle.as.jmx
drw-   oracle.as.management.mbeans.register
drw-   oracle.as.ohs
drw-   oracle.as.util
drw-   oracle.bi.admin
drw-   oracle.ohs
wls:/bi/editCustom/> cd('oracle.ohs')
wls:/bi/editCustom/oracle.ohs> ls()
drw-   oracle.ohs:OHSInstance=ohs1,name=127.0.0.1-7779,type=OHSInstance.PortConfig
drw-   oracle.ohs:OHSInstance=ohs1,name=4443,type=OHSInstance.PortConfig
drw-   oracle.ohs:OHSInstance=ohs1,name=7777,type=OHSInstance.PortConfig
drw-   oracle.ohs:OHSInstance=ohs1,name=Audit,type=OHSInstance.AuditConfig
drw-   oracle.ohs:OHSInstance=ohs1,name=VHost---4443,type=OHSInstance.VHostConfig
drw-   oracle.ohs:OHSInstance=ohs1,name=VHost-127.0.0.1-7779-localhost,type=OHSInstance.VHostConfig
drw-   oracle.ohs:OHSInstance=ohs1,name=VHost-<base>,type=OHSInstance.VHostConfig
drw-   oracle.ohs:type=Component.KeyStoreConfig,name=KeyStore,OHSInstance=ohs1,component=OHS
drw-   oracle.ohs:type=OHSInstance,name=ohs1
drw-   oracle.ohs:type=OHSInstance.NMProp,OHSInstance=ohs1,component=OHS
drw- oracle.ohs:type=OHSSystemComponent,name=OHSInstanceManager
wls:/bi/editCustom/oracle.ohs> exit()
```

12.5 Configuration of OHS for OAS using Fusion Middleware Control.

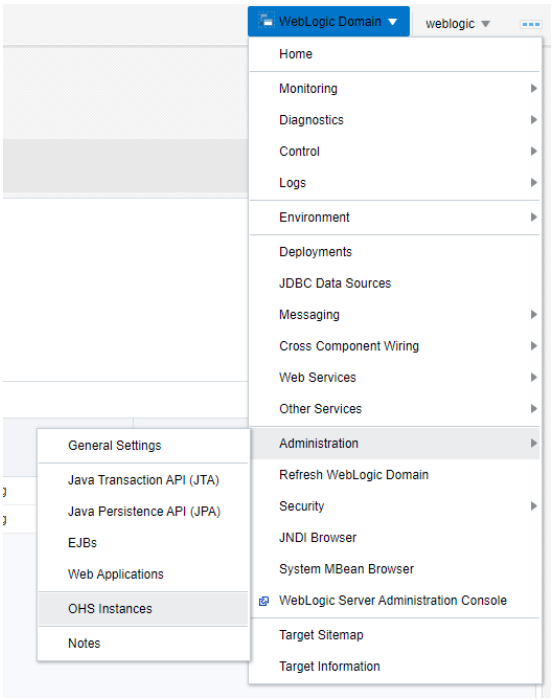
12.5.1 Step 1 - Login to Fusion Middleware Control

» htttp://oas.example.com:9500/em

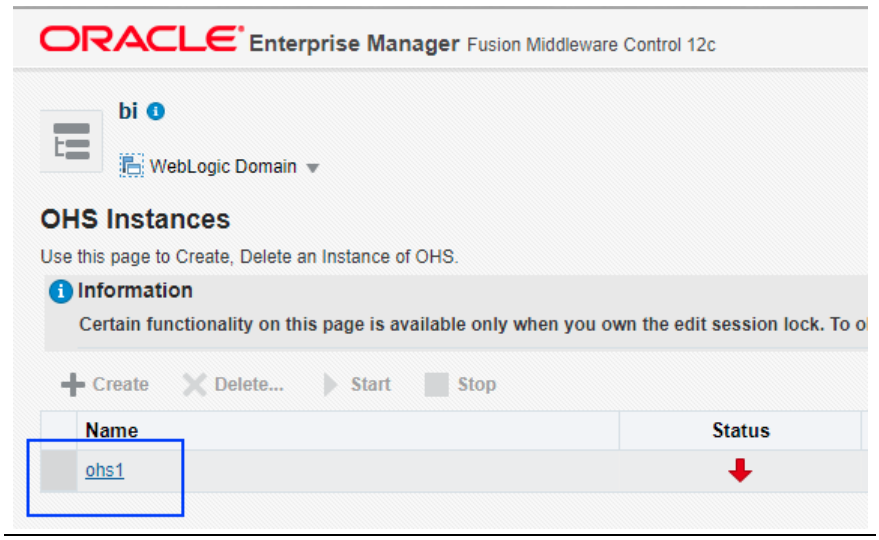


12.5.2 Step 2 - Fusion Middleware Configuration – Administer OHS Instances

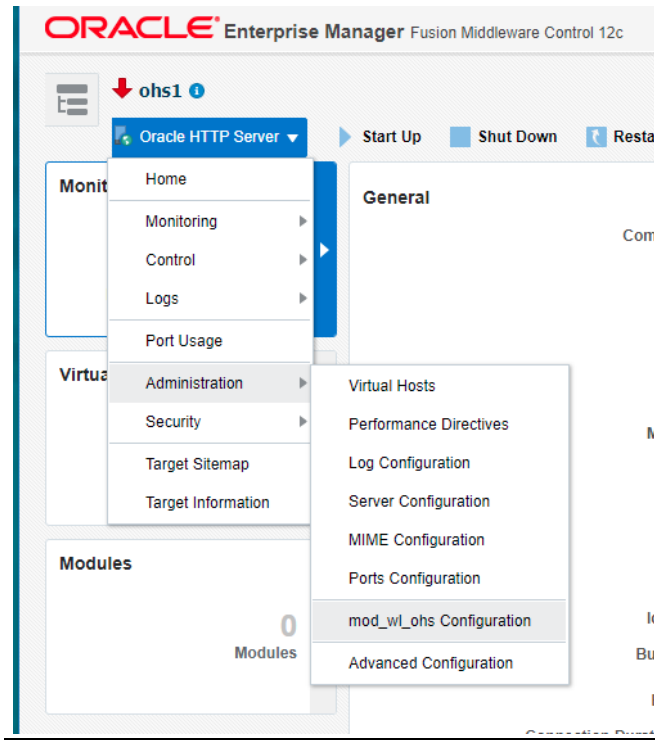
WebLogic Domain
→ Administration
→ OHS Instances



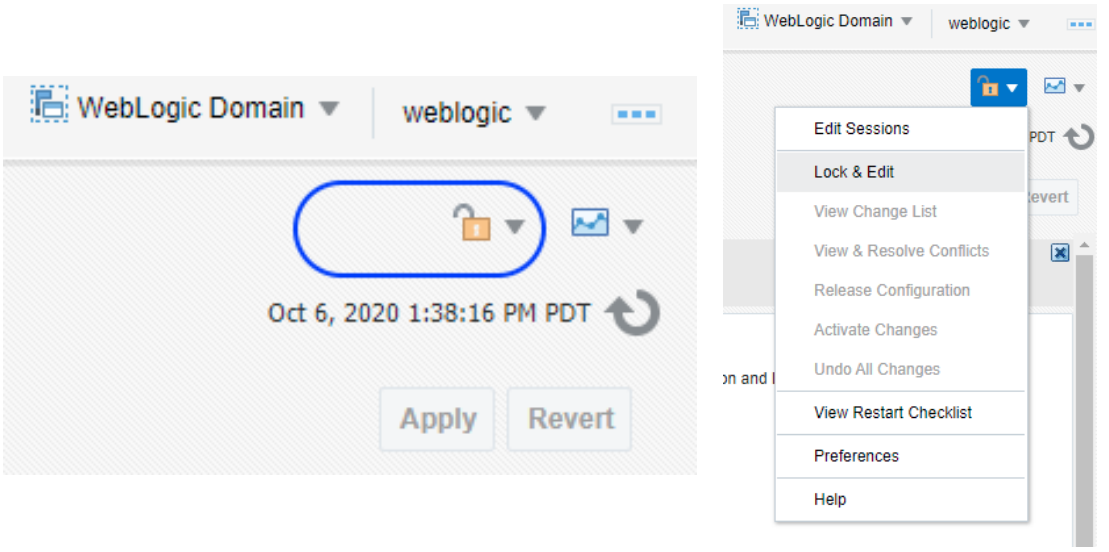
12.5.3 Step 3 - Fusion Middleware Configuration – Click on ohs1



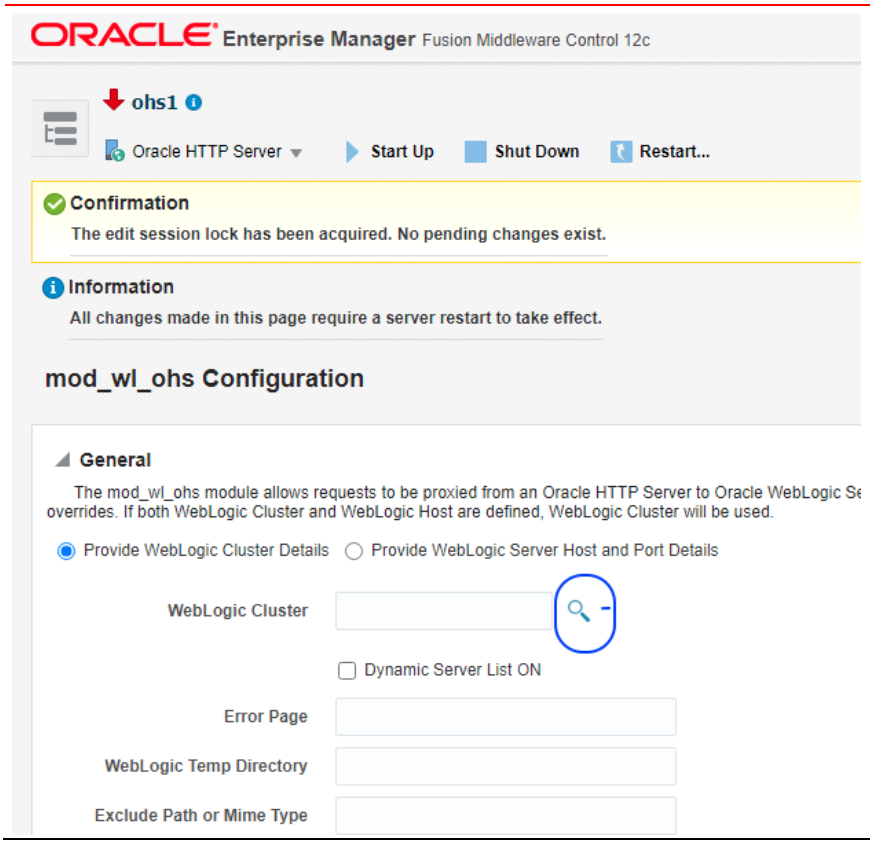
12.5.4 Step 4 - Fusion Middleware Configuration – mod_wl_ohs Configuration



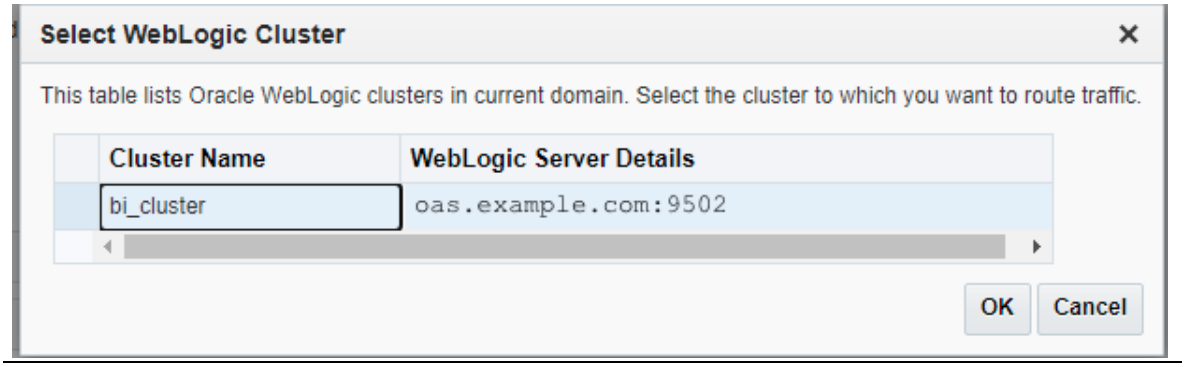
12.5.5 Step 5 - Fusion Middleware Configuration – lock and edit



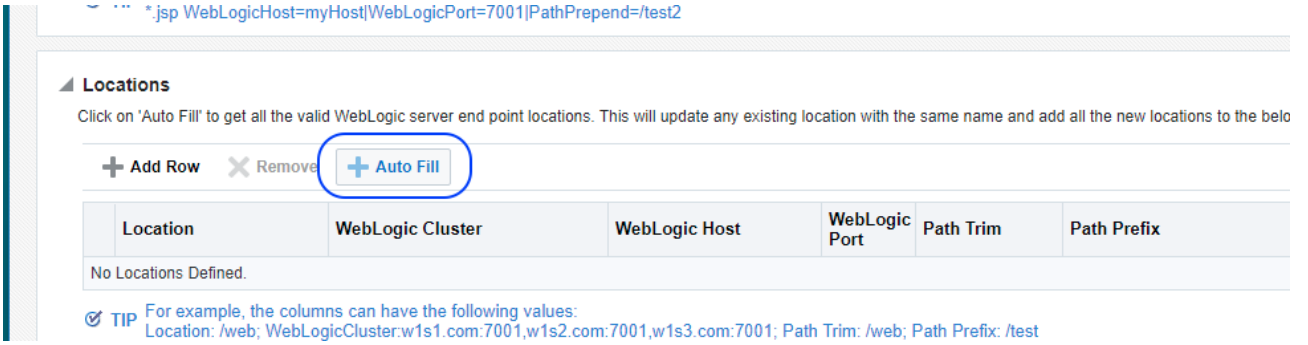
12.5.6 Step 6 - Fusion Middleware Configuration – Search for cluster



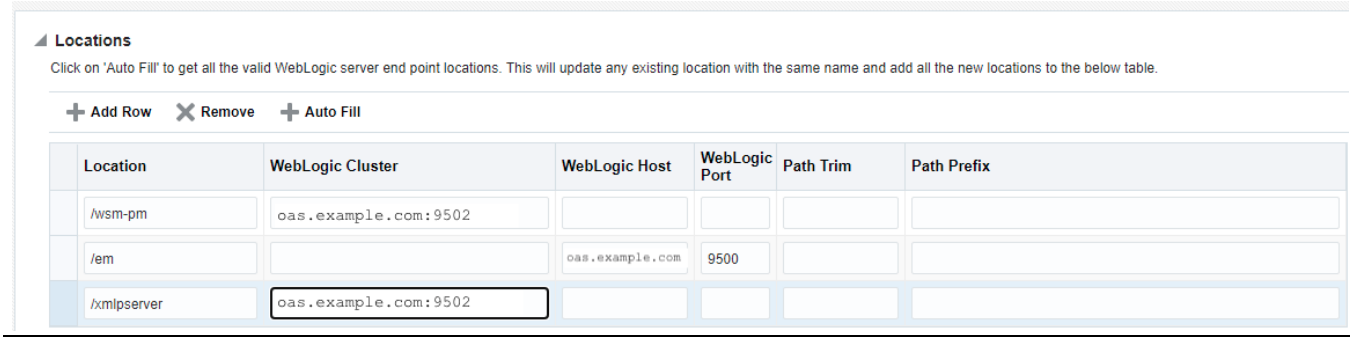
12.5.7 Step 7 - Fusion Middleware Configuration – Choose bi_cluster



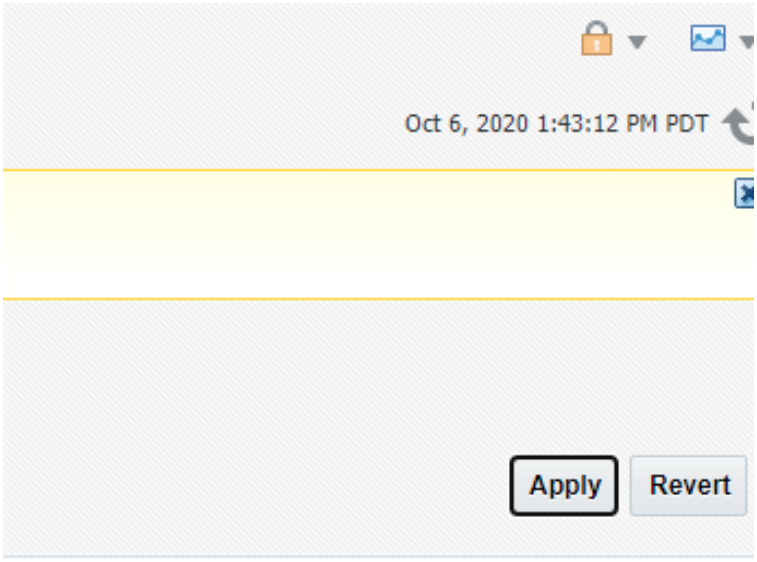
12.5.8 Step 8 - Fusion Middleware Configuration – Populate Locations

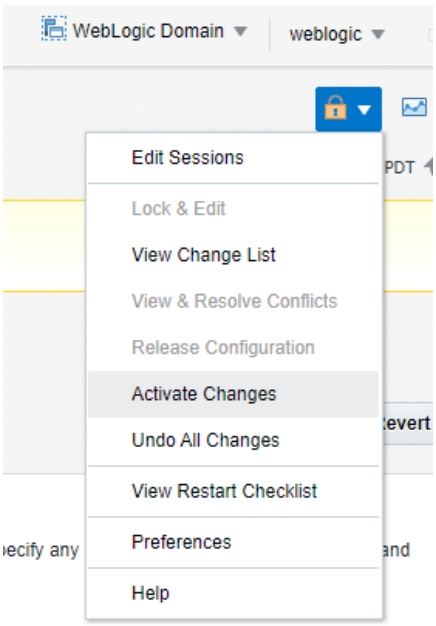


Add OAS Location



12.5.9 Step 9 - Fusion Middleware Configuration – Apply and Activate Changes





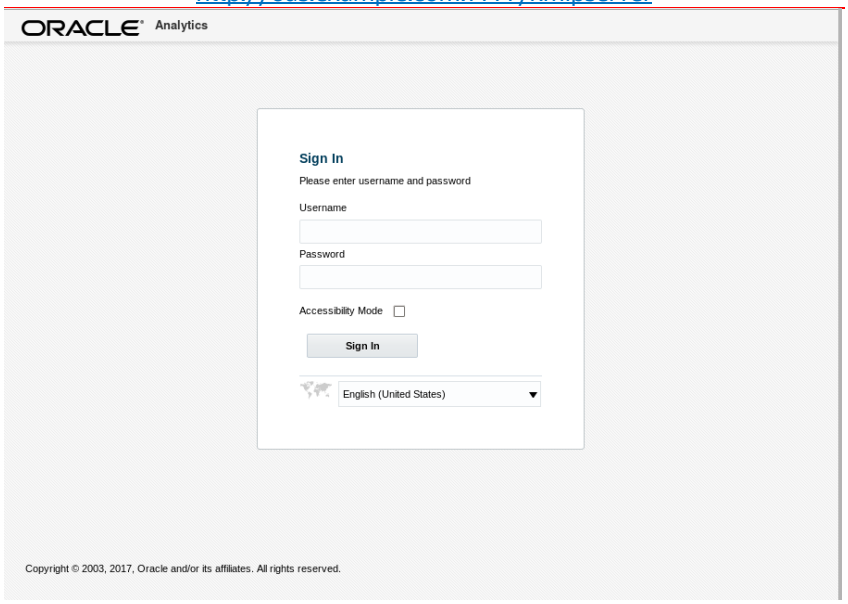
12.5.10 Restart OHS – Step 10

see '0 -

- Stopping and starting OHS using Fusion Middleware Control'.

12.5.11 Validate access to OAS via OHS – Step 11

- Login to OAS, using the default OHS Port of 7777:
  - http://oas.example.com:7777/xmlpserver



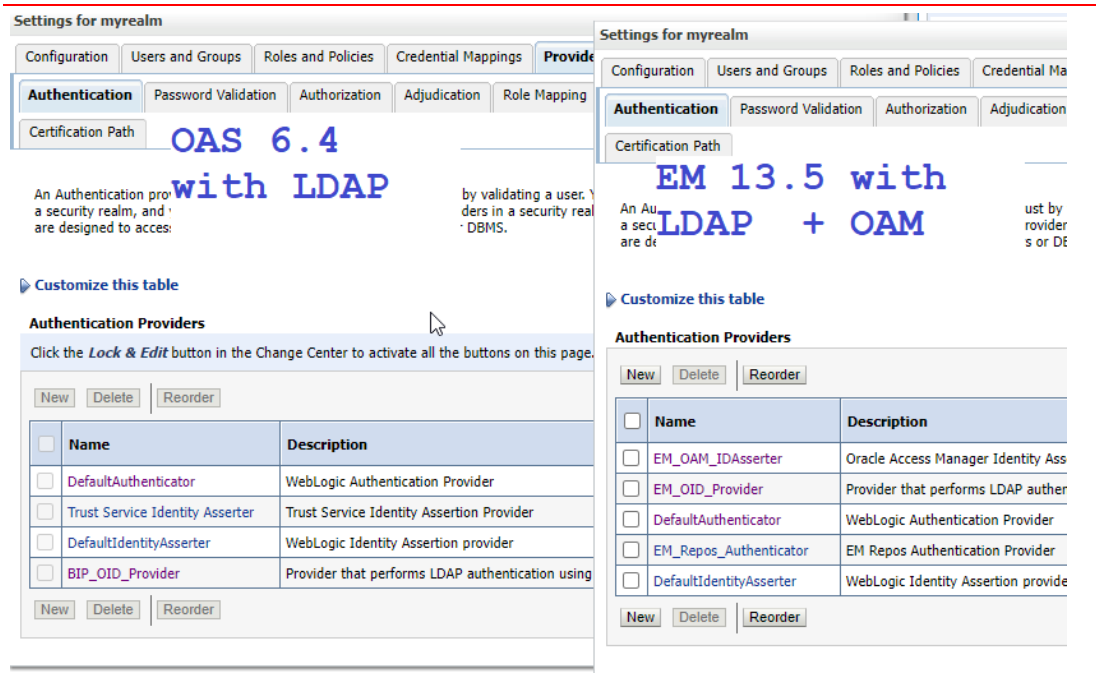
CHAPTER 13. CONFIGURATION OF SINGLE SIGN-ON

This chapter details the installation and configuration of OAS for use with Oracle Access Manager (OAM).

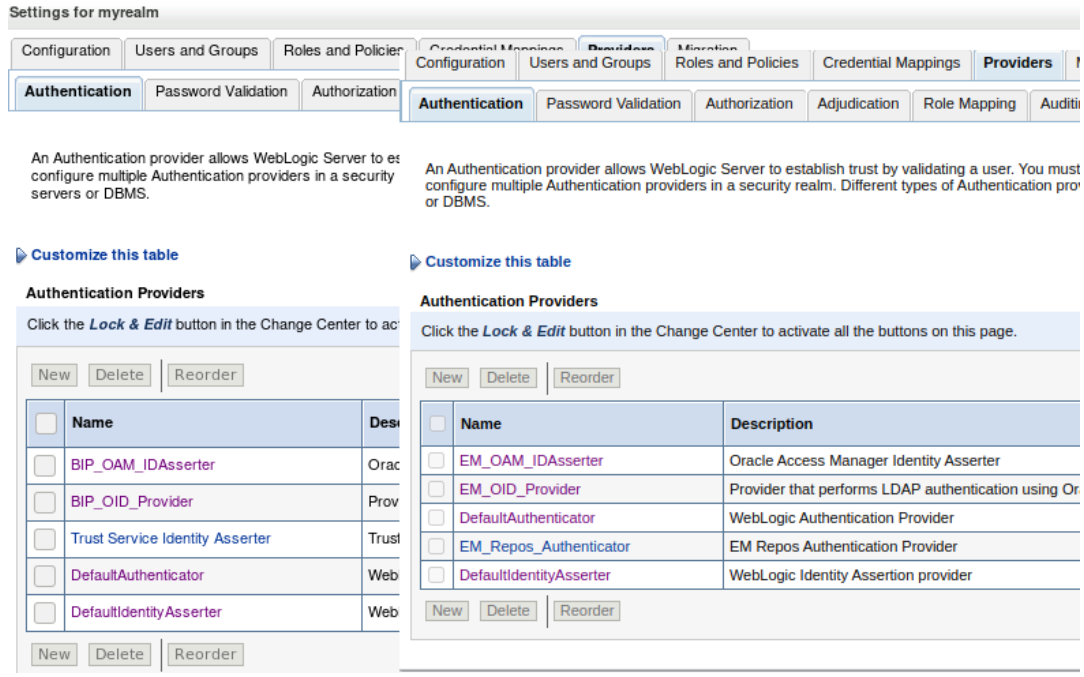
Like earlier steps, the overall goal is to configure the OAS WebLogic domain to closely match one (or possibly more) Enterprise Manager WebLogic Domains.

The right side shows an EM site fully configured with both OID and SSO (OAM).

Here is a side-by-side comparison of the current configuration of OAS and Enterprise Manager



The end goal is shown below

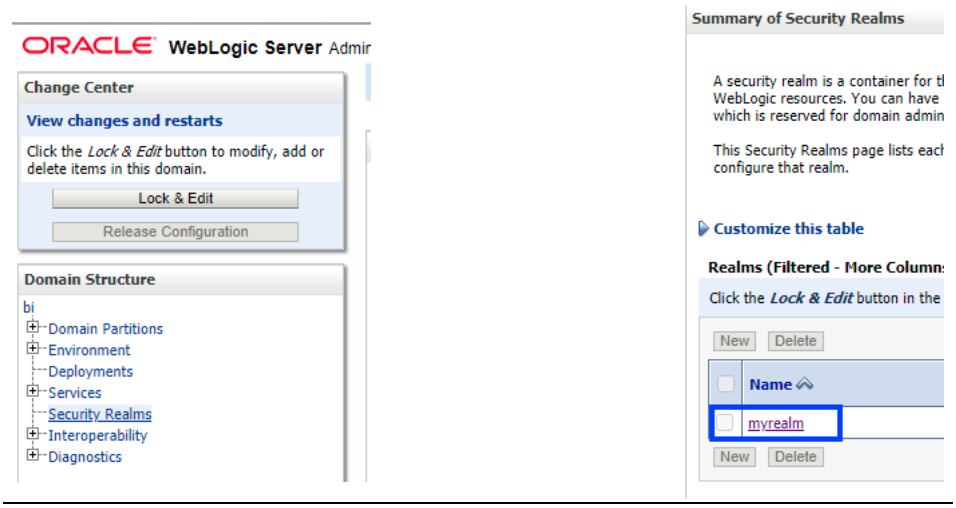


The following sections detail the required steps to achieve this final goal.

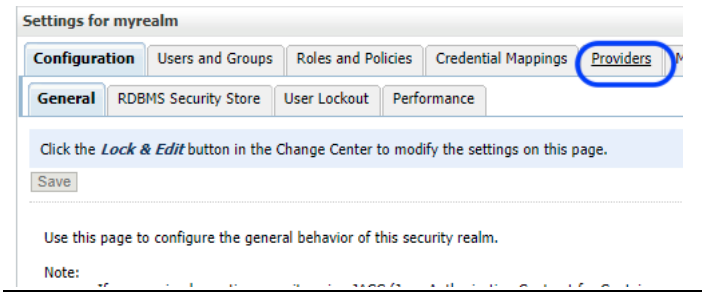
13.1.1 Step 1 - Login to WebLogic Console (OAS)

- http://oas.example.com:9500/console

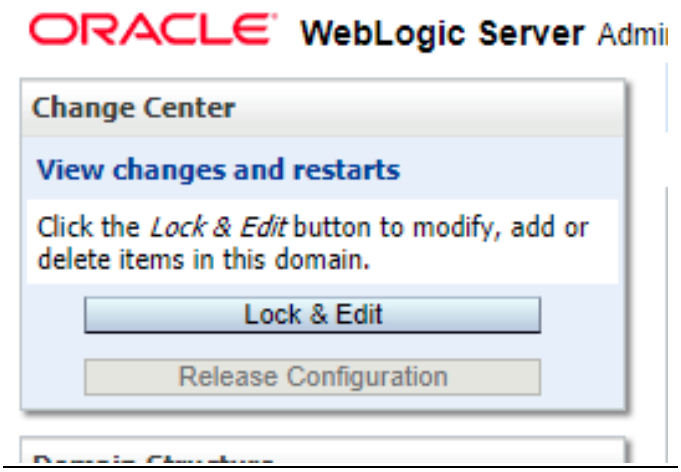
13.1.2 Step 2 - Click on Security Realms and myrealm



13.1.3 Step 3 - Click on the Providers tab



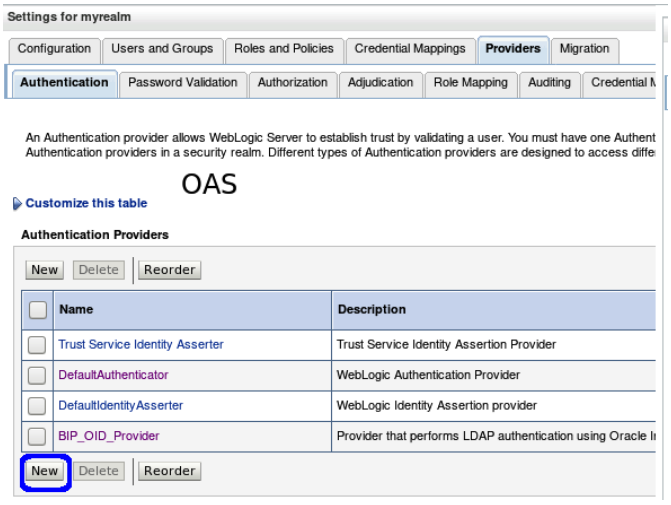
13.1.4 Step 4 - Prepare to make the required edits

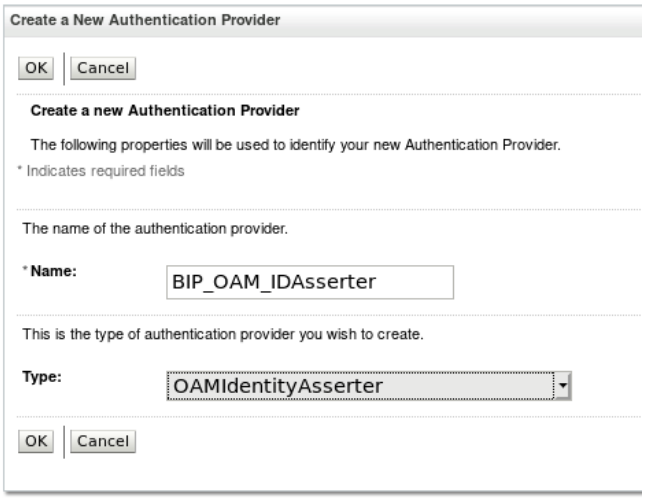


13.1.5 Step 5 - Create the new OAM Identity Asserter

Steps:

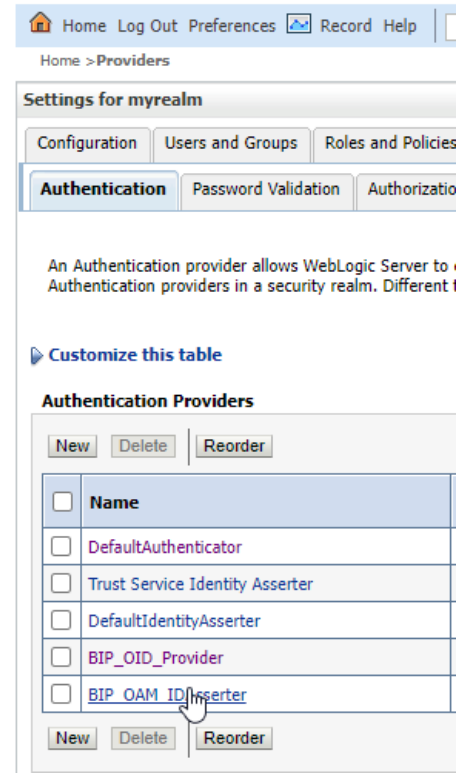
1. Click on the New button.
2. In the text box for the Name: field, choose a name as appropriate:
   - BIP_OAM_IDAsserter
3. In the drop-down for the Type: field, scroll down, and choose the type:
   - OAMIdentityAsserter
4. **Click on the** OK **button.**





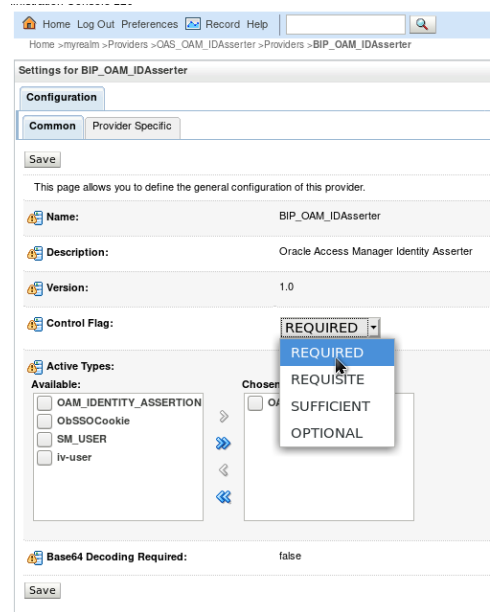
13.1.6 Step 6 - Configure the BIP_OAM_Provider Provider

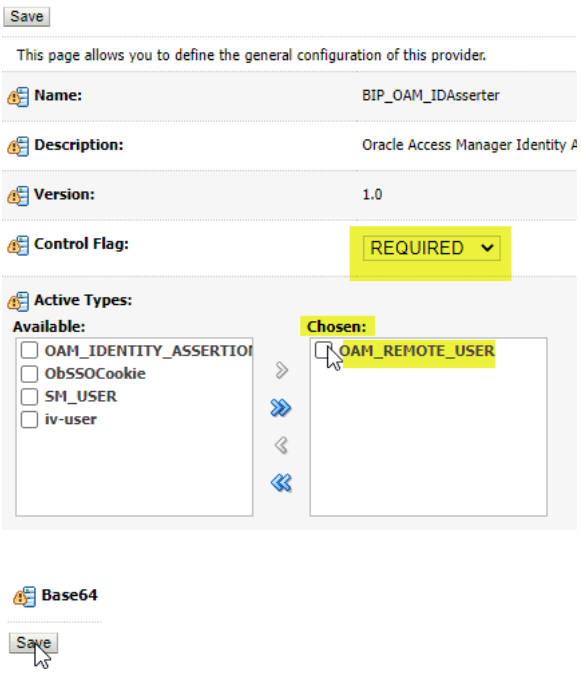
13.1.6.1 Part 1 – Click on BIP_OAM_Provider and select 'Required'



13.1.6.2 Change the **Control Flag** from **OPTIONAL** to **REQUIRED**

- **E**nsure that **OAM_REMOTE_USER** is on the right side (in the **Chosen:** column) and press **Save**

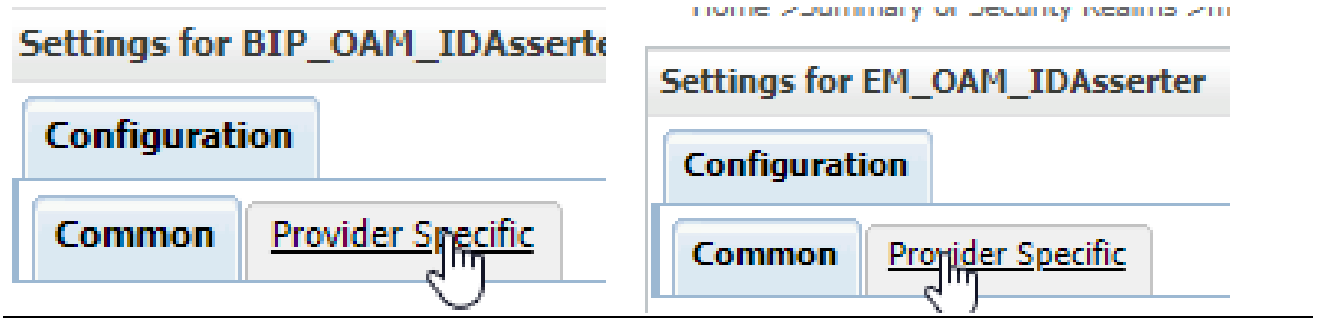




13.1.6.3 Part 2 - Configure the provider specific configuration to match Enterprise Manager's.

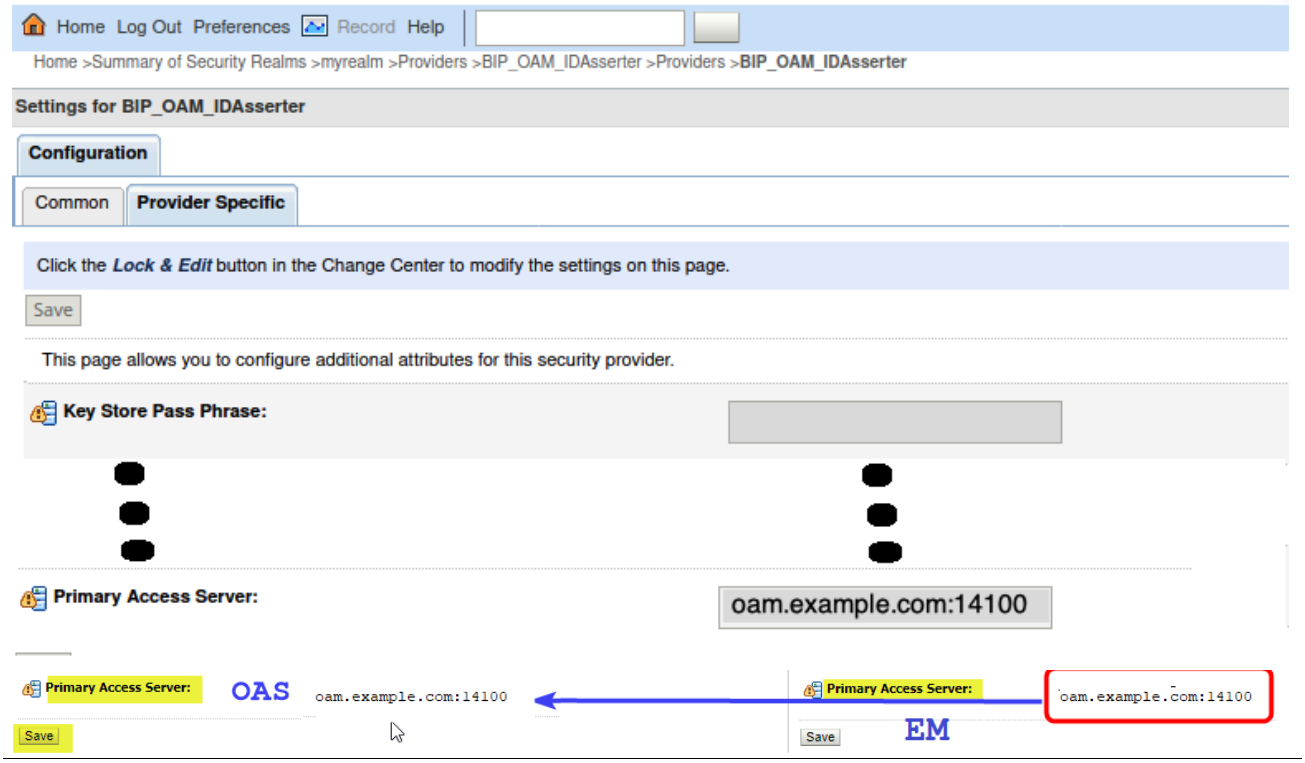
Bring up two browsers (for example MS Edge and Chrome) side by side.

On the left side will be the WebLogic console for OAS, and on the right side will be the WebLogic console for Enterprise Manager.

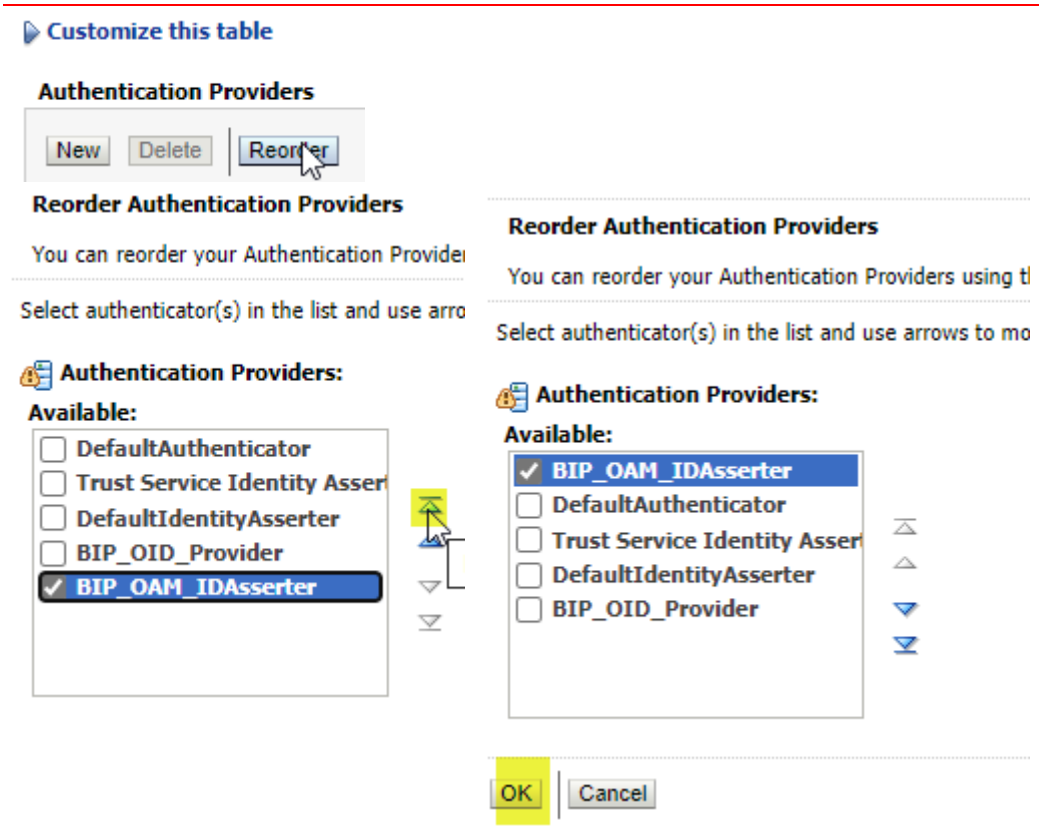


» The only relevant item that needs to be configured is the **Primary Access Server**.

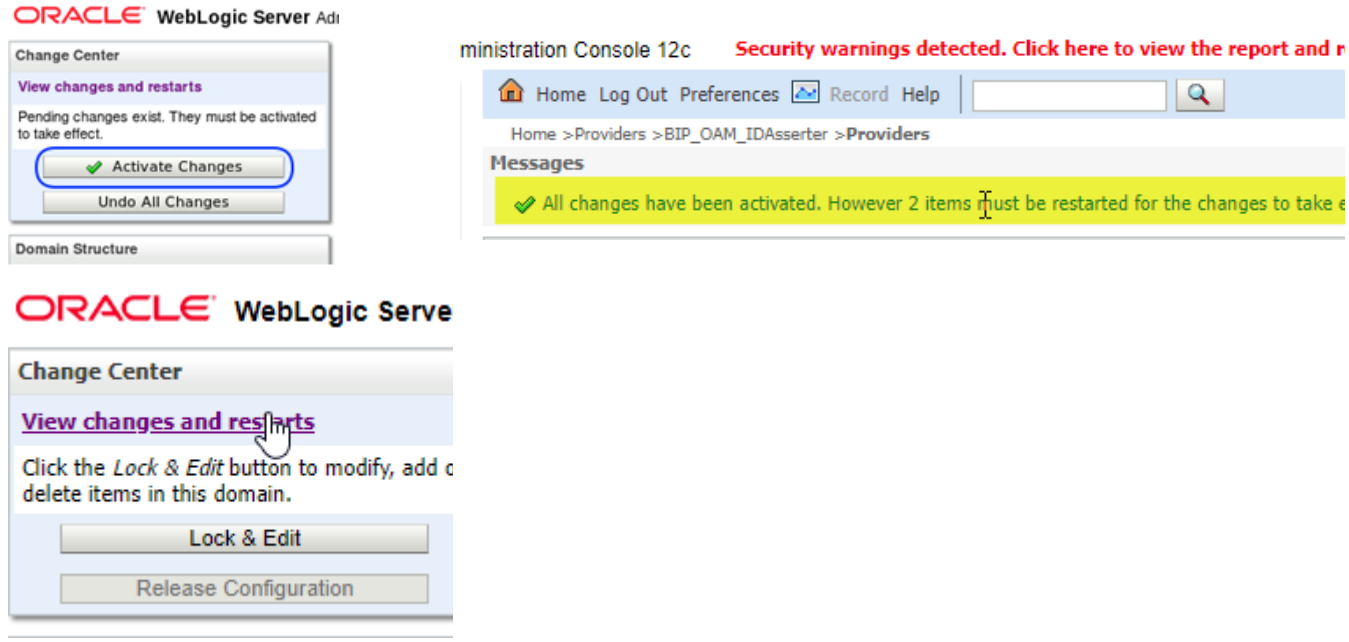
- *You must scroll to the very bottom of the screen to see this.*



13.1.6.4 Part 3 - Reorder the providers as below:



13.1.6.5 Part 4 - Save and activate the changes



13.1.6.6 Restart the whole OAS stack

- Bring Down OAS, the Admin Server, OHS, and the node manager: Appendix F - Stopping the full OAS stack
- Start the full OAS stack: Appendix E - Starting the full OAS stack

13.1.7 Step 7 - Configuration of Oracle Webgate, running on top of OHS.

Oracle Analytics Server (OAS) is built on top of Fusion Middleware 12.2.1.4.

Fusion Middleware 12.2.1.4 includes all the required components needed to integrate an existing WebLogic domain, built on top of Oracle HTTP Server (OHS), using the provided Oracle Webgate (Webgate).

The following is an outline of the required steps:

1. Deploy Webgate to Collocated OHS
2. Edit httpd.conf to include Webgate.
3. Copy required artifacts to OHS (EM Internal Steps, not part of finished document).
4. Troubleshooting Webgate.

For specific details on the required configuration, please consult the following Oracle documentation:

Oracle® Analytics
Enterprise Deployment Guide for Oracle Analytics Server

The above document describes how to install and configure Oracle Analytics Server components in an enterprise deployment.

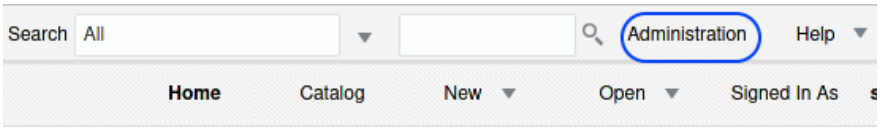
13.1.8 Step 8 - OAS Required Steps

13.1.8.1 Part 1 - OAS Required Steps – wlst.sh

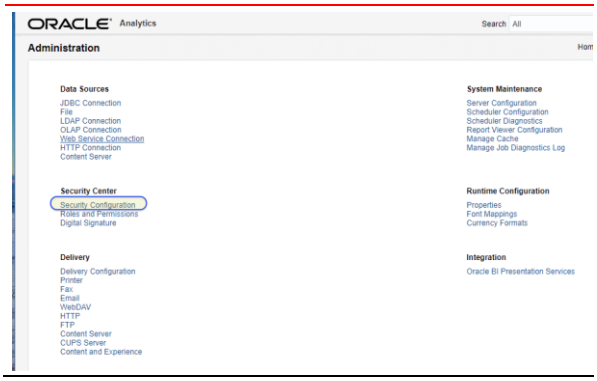
```
$ $MW_HOME/oracle_common/common/bin/wlst.sh
Initializing WebLogic Scripting Tool (WLST) ...
Welcome to WebLogic Server Administration Scripting Shell
Type help() for help on available commands
wls:/offline> readDomain('...../user_projects/domains/bi')
wls:/offline/bi>enableBISingleSignOn('....../user_projects/domains/bi','http://oamserver.exam
ple.com:14100/oamsso/logout.html')
wls:/offline/bi>updateDomain()
wls:/offline/bi>closeDomain()
wls:/offline>exit()
Exiting WebLogic Scripting Tool.
```

13.1.8.2 Part 2 - OAS Required Steps – User Interface

13.1.8.2.1 Login to OAS as the WebLogic user and Click on 'Administration' link



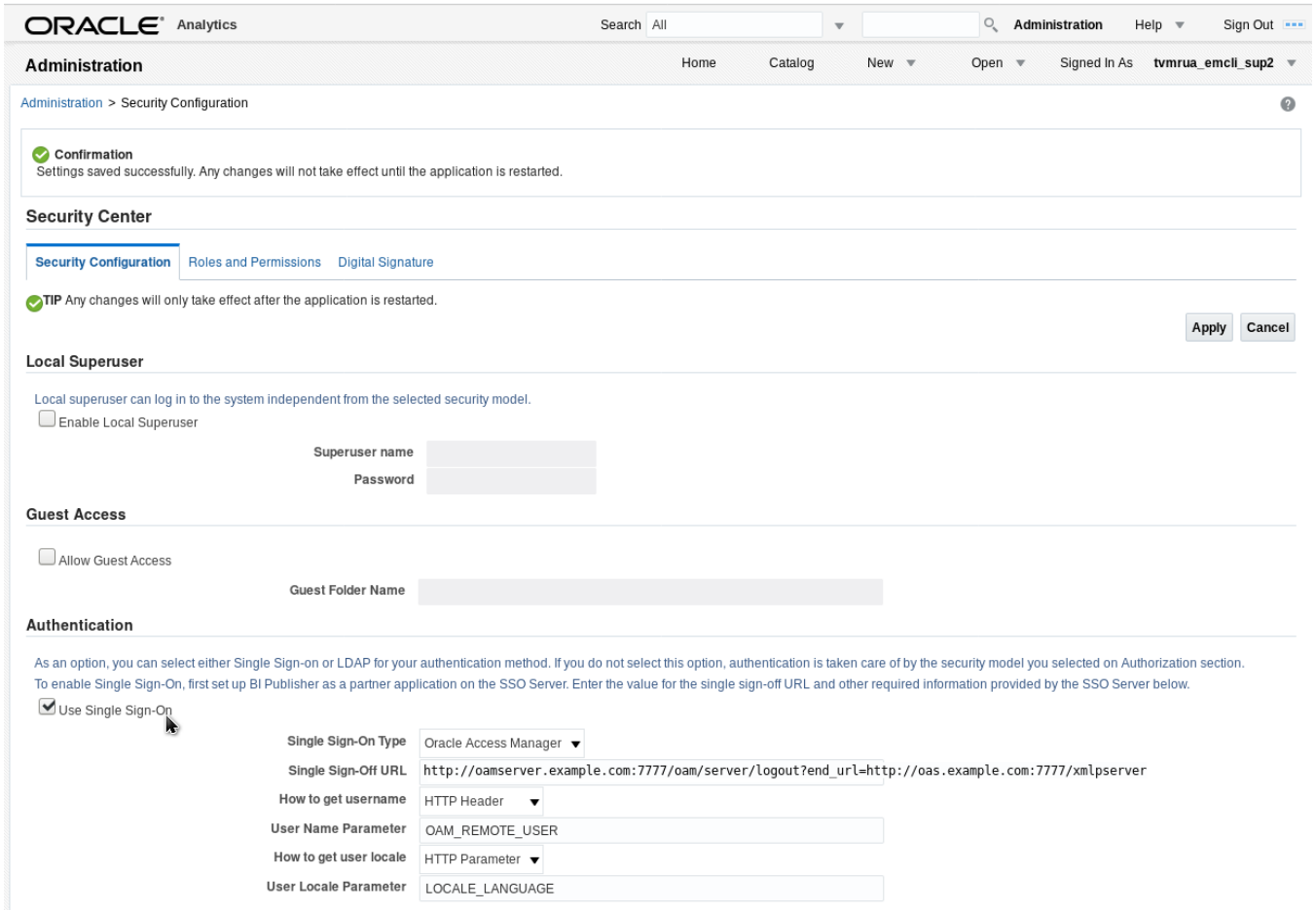
13.1.8.2.2 Underneath 'Security Center' choose 'Security Configuration'



13.1.8.3 Part 3 - Configure OAS to utilize Oracle Access Manager

- Click on the Use Single Sign-on check box.
- Change the Single Sign-On Type to Oracle Access Manager
- Input the correct value for the **Single Sign-Off URL**, for example:

Single Sign-Off URL `http://oamserver.example.com:7777/oam/server/logout?end_url=http://oas.example.com:7777/xmlpserver`



13.1.8.4 Part 4 - Edit or confirm the correct entry for the ServerName directive in httpd.conf

An example of the correct entry is shown below:

```
$ cd $MW_HOME/user_projects/domains/bi/config/fmwconfig/components/OHS/ohs1
$ diff httpd.conf httpd.conf.ORIG
203,205c203
< #ServerName http://localhost:7777
< # Added for OAS+OHS+OAM
< Servername http://oas.example.com:7777
---
> ServerName http://localhost:7777
1136,1137d1133
<
< include  "webgate.conf"
```

13.1.8.5 Part 5 - Bounce the stack

- Bring Down OAS, the Admin Server, OHS, and the node manager: Appendix F - Stopping the full OAS stack
- Start the full OAS stack: Appendix E - Starting the full OAS stack

CHAPTER 14. CONFIGURATION OF REQUIRED OAS DATASOURCE(S)

After successfully configuring OAS for the desired Security Infrastructure, the Oracle Provided Reports, and any customized reports can be uploaded to OAS.

Before the Oracle provided Out of Box reports can be utilized, as well as any customized reports, it is necessary to configure one or more OAS Datasource(s). [24]

Each of these configured Datasource(s) are mapped one-to-one for each set of the Oracle provided Out of Box Reports.

14.1 Step 1 - For the first EM Host

The following command sets the password for the MGMT_VIEW user to the specified value. This is required so that the OAS Datasource (i.e., EMREPOS) can be properly configured.

```
emctl config oms -change_view_user_pwd -sysman_pwd ●●●●●●●● -user_pwd ●●●●●●●●
emctl stop oms -all
emctl start oms
```

14.2 Step 2 - OAS Datasource Configuration Steps

Use the following screenshots as an example of configuring an OAS Datasource.

14.2.1 Part 1 - Login to OAS as the appropriate user

When proceeding from 'Chapter 10 - OAS For EM Repository-based Security', login as the SYSMAN user.

When proceeding from Chapters 11 (and optionally 12 and 13), login as the 'weblogic' user.

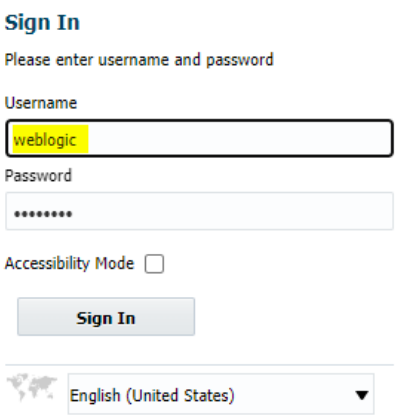
OAS for EM Repository-Based Security	OAS for LDAP Based Security
	

Figure 51. Login as the **sysman** or **weblogic** user

14.2.2 Part 2 - Click on the Administration Link

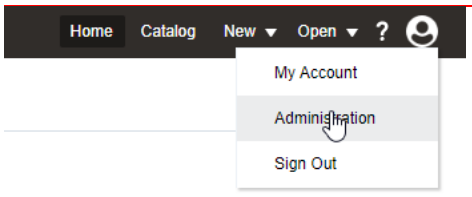
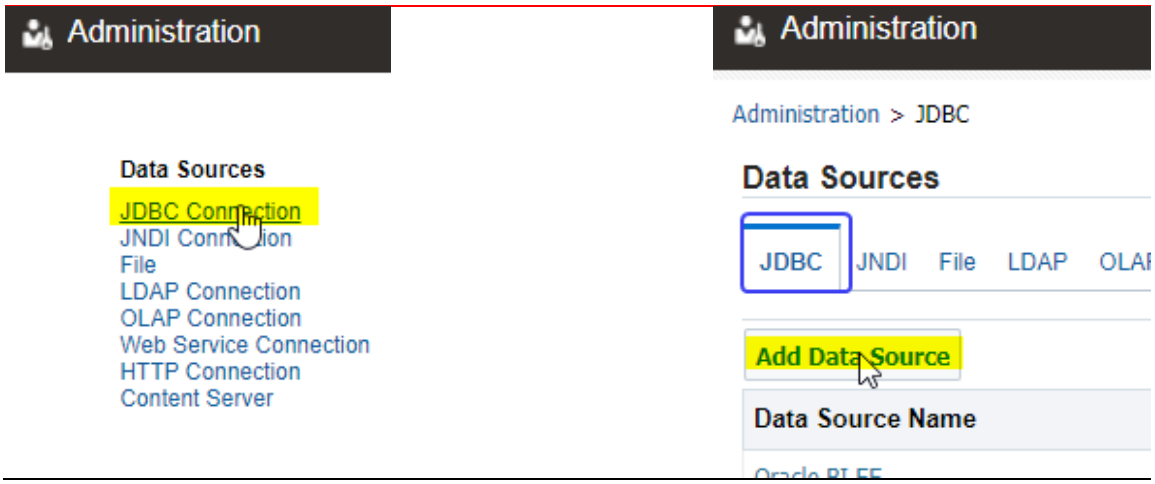


Figure 52. Click on the **Administration** link

[24] (OAS - Set Up Data Sources, 2021) Data Sources

14.2.3 Part 3 – Add a JDBC Data Source



14.2.4 Part 4 – Ensure that the MGMT_VIEW account has been setup properly

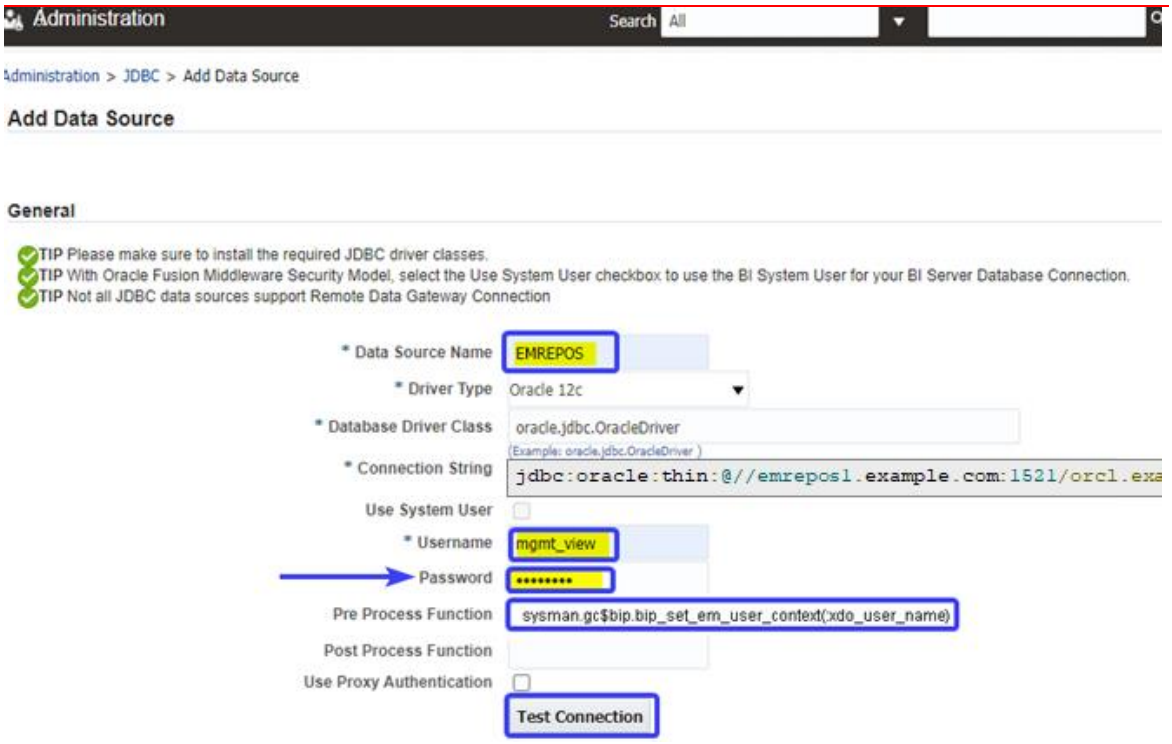
Make sure that the MGMT_VIEW user account has been set to a known password, for example:

```
$ emctl config oms -change_view_user_pwd
Oracle Enterprise Manager Cloud Control 13c Release 5
Copyright (c) ....
Enter Repository User's Password :
Enter MGMT_VIEW User's Password :
Restart all the OMSs using 'emctl stop oms -all' and 'emctl start oms'.
Successfully changed MGMT_VIEW User's password.
```

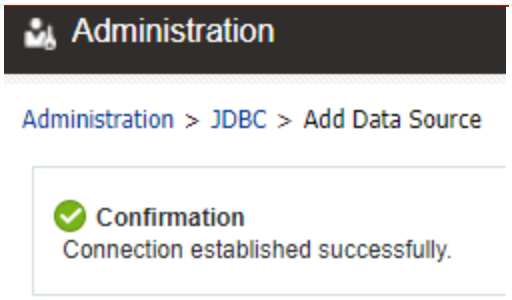
14.2.5 Part 5 - Fill in the required details

```
             Name: EMREPOS
      Driver Type: Oracle 12c
   Database Class: oracle.jdbc.OracleDriver
Connection String: jdbc:oracle:thin:@//emrepos1.example.com:1521/orcl.example.com
  Use System User: Do Not Check
         Username: MGMT_VIEW
         Password: ********

    Pre Process Function: sysman.gc$bip.bip_set_em_user_context(:xdo_user_name)
   Post Process Function: Leave Blank
      Client Certificate: Leave Blank
Use Proxy Authentication: Leave Blank
```

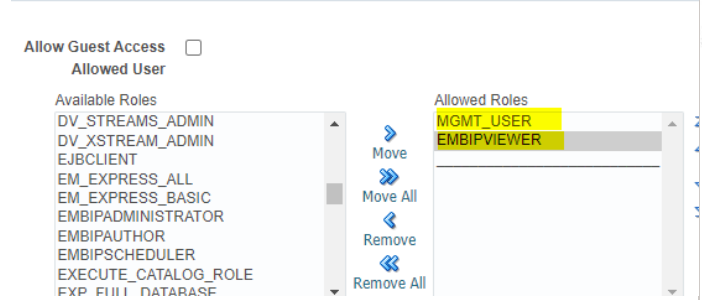
14.2.6 Part 6 - Review the newly defined Data Source



14.2.7 Part 7 - Positive Result of the Test

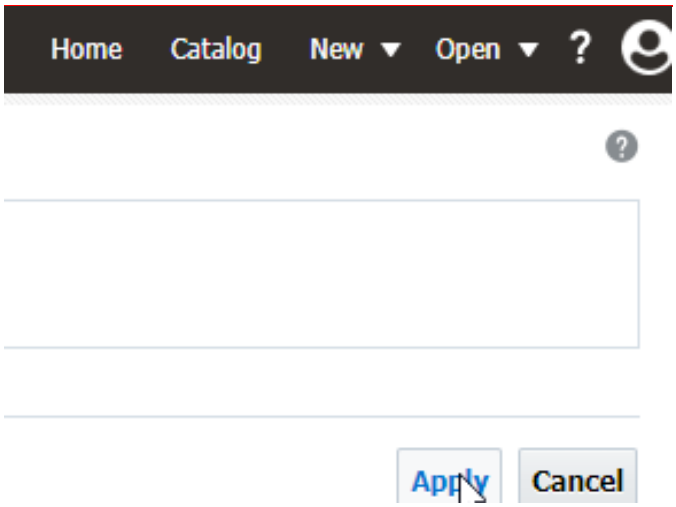


14.2.8 Part 8 Granting Required Roles to OAS Datasource

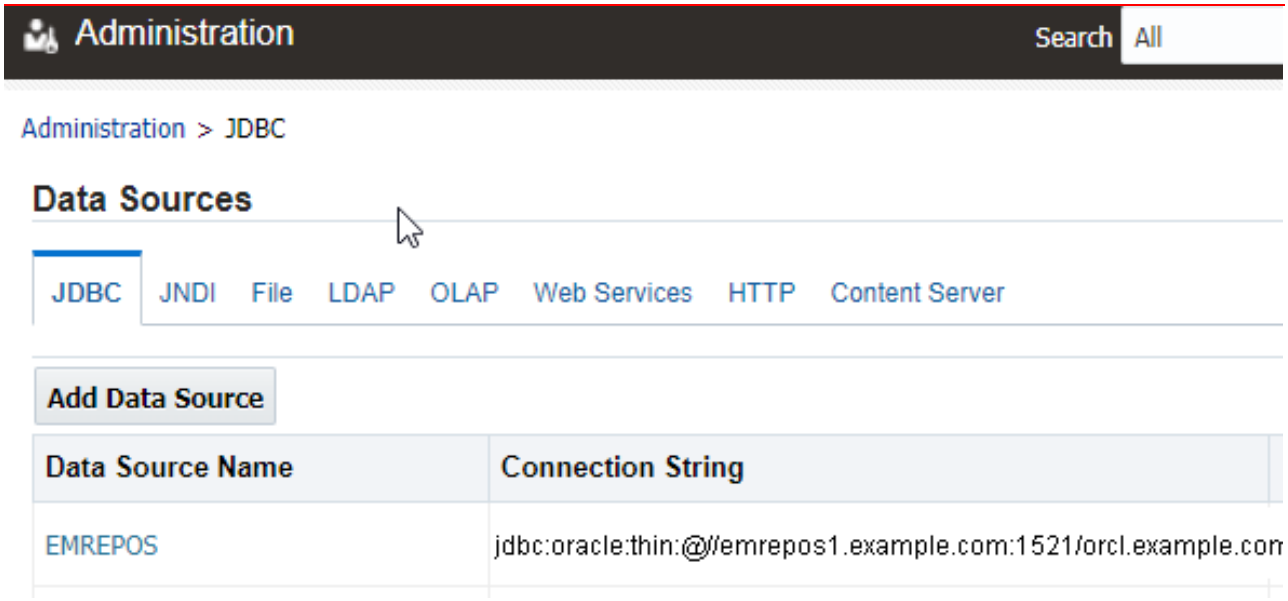
OAS for EM Repository-Based Security	OAS for LDAP Based Security
	

*In general, it is not appropriate to select the '**Allow Guest Access**' unless a specific use case has been identified to support the guest account.*

14.2.9 Part 9 - Press Apply



14.2.10 Part 10 – Completed List of JDBC Data Sources



CHAPTER 15. PREPARE FOR ORACLE PROVIDED OUT OF BOX REPORTS

Enterprise Manager 13.5 bundles a full set of the Oracle Provided out-of-box reports. This set of out-of-box reports is being delivered consistent with earlier releases of Enterprise Manager.

As in prior releases of Enterprise Manager, a set of out-of-box reports is being delivered as part of the base platform, as well as for each plug-in.

15.1 Per-requisite Step

There are several required steps to support the installation of Enterprise Manager Provided Out of Box Reports.

The Oracle Provided Out-of-Box reports utilize the Fusion Middleware Security roles from the embedded BIP that was part of prior releases of Enterprise Manager.

When utilizing the Database Security Model with OAS [section Chapter 10 - OAS For EM Repository-based Security], the EMBIP* roles can easily be created as DBMS roles.

When utilizing the Fusion Middleware Security Model, the built in OAS roles need to overlayed onto the required EMBIP* roles.

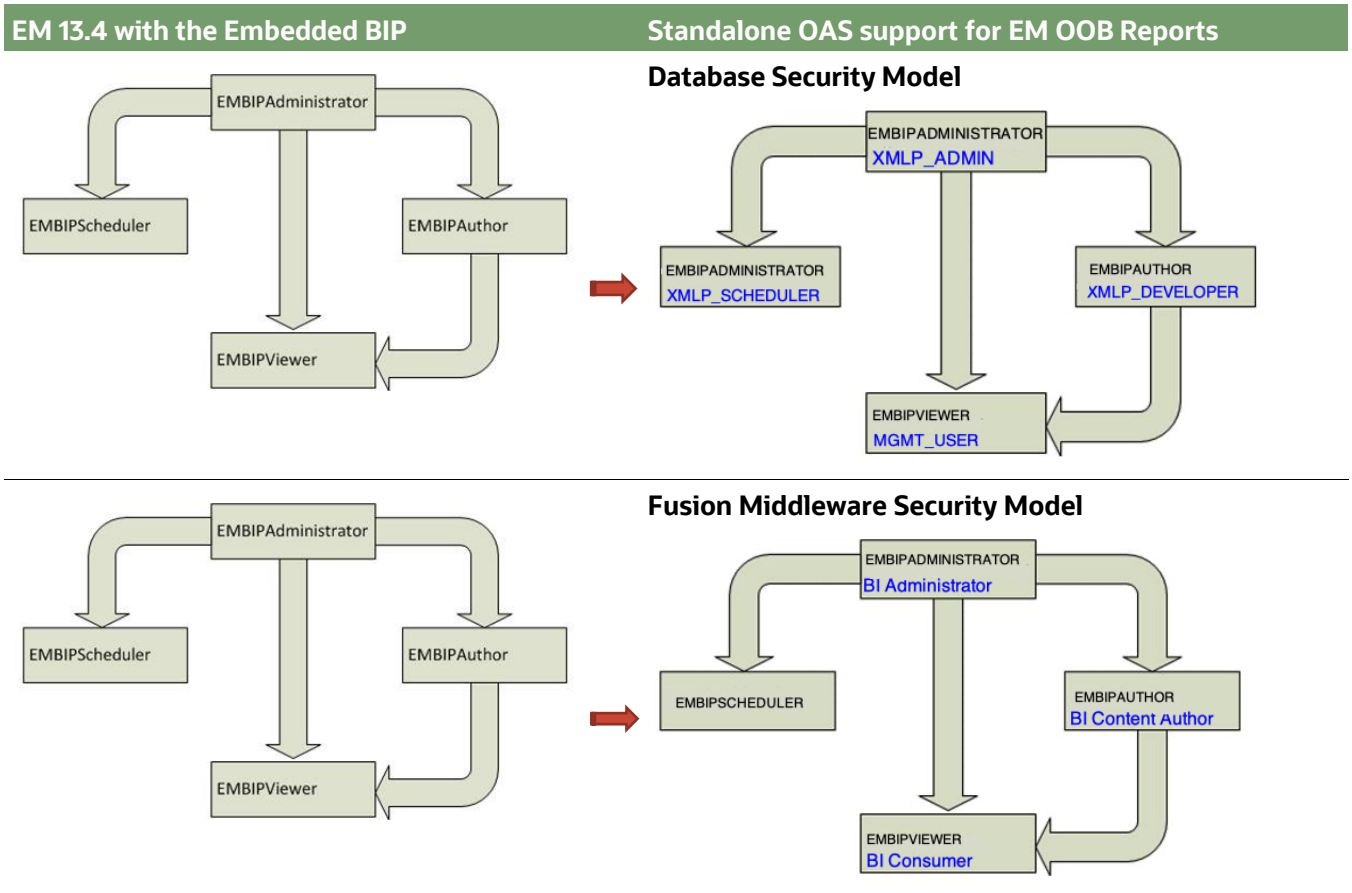


Figure 53. Required Role Hierarchy for OAS Roles, including EM roles

The above structure is achieved by utilizing either SQL*PLUS, or Fusion Middleware Control, such that the OAS Role hierarchy is:

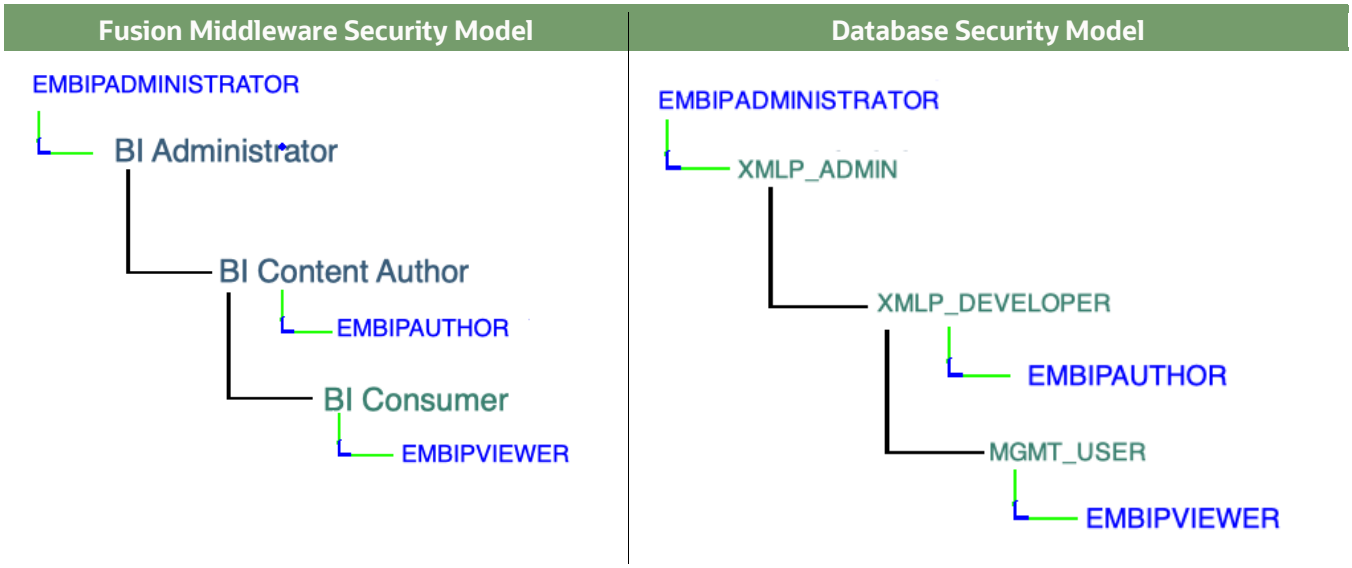


Figure 54. Mapping of EMBIP* Roles to base OAS Roles

15.2 Standalone OAS support for EM Provided Reports: Database Security Model

The required EMBIP* database roles would have been configured using the steps from 'section 10.2 - Preparation for upload of Oracle Provided Reports'.

These steps are repeated below in case they have been missed.

```
$ sqlplus sys/●●●●●● as sysdba
sql> REM Create base EMBIP roles
sql> create role EMBIPADMINISTRATOR;
sql> create role EMBIPAUTHOR;
sql> create role EMBIPSCHEDULER;
sql> create role EMBIPVIEWER;
sql>
sql> REM Create Role Mapping
sql> grant XMLP_ADMIN to EMBIPADMINISTRATOR;
sql> grant XMLP_DEVELOPER to EMBIPAUTHOR;
sql> grant XMLP_SCHEDULER to EMBIPSCHEDULER;
sql> grant MGMT_USER to EMBIPVIEWER;
sql> exit;
```

15.2.1 If utilizing the Database security Model

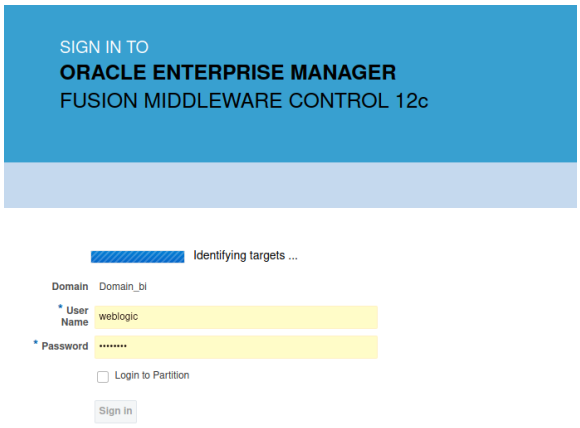
- proceed to section '15.3.4 – Step 4 – Configure Role Hierarchy for EM roles'

15.3 OAS support for EM Provided Reports: Fusion Middleware Security Model

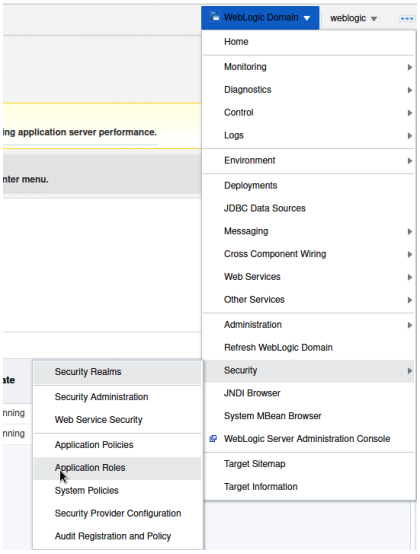
The steps to map the required EMBIP* roles for the Fusion Middleware Security Model are a bit more involved.

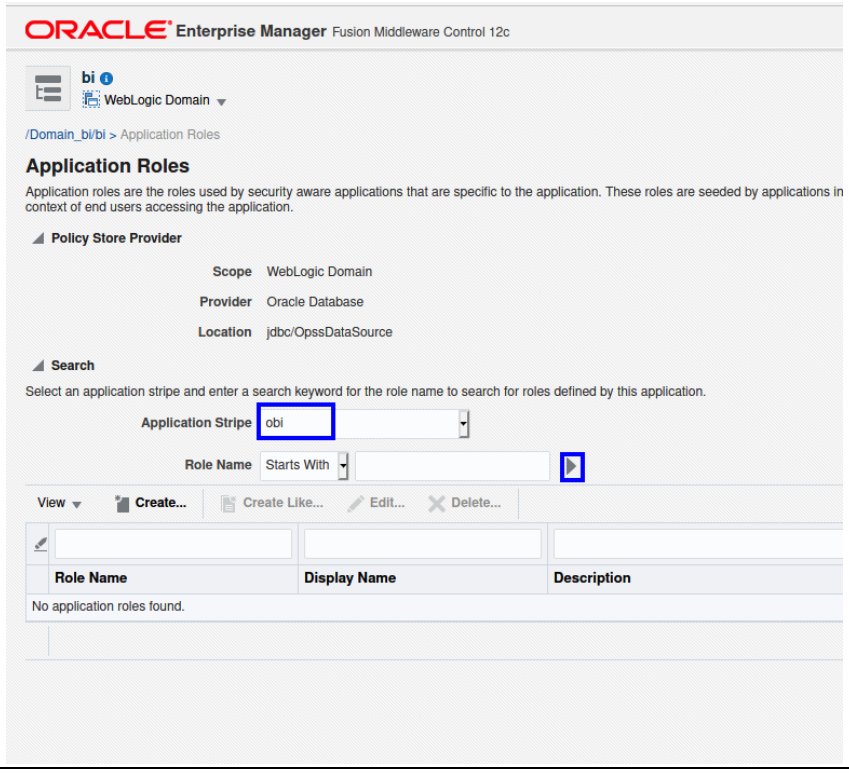
15.3.1 Step 1 - Create EMBIP* Roles as OBI-Stripe Roles

15.3.1.1 Step 1, Part 1 - Login to Fusion Middleware Control



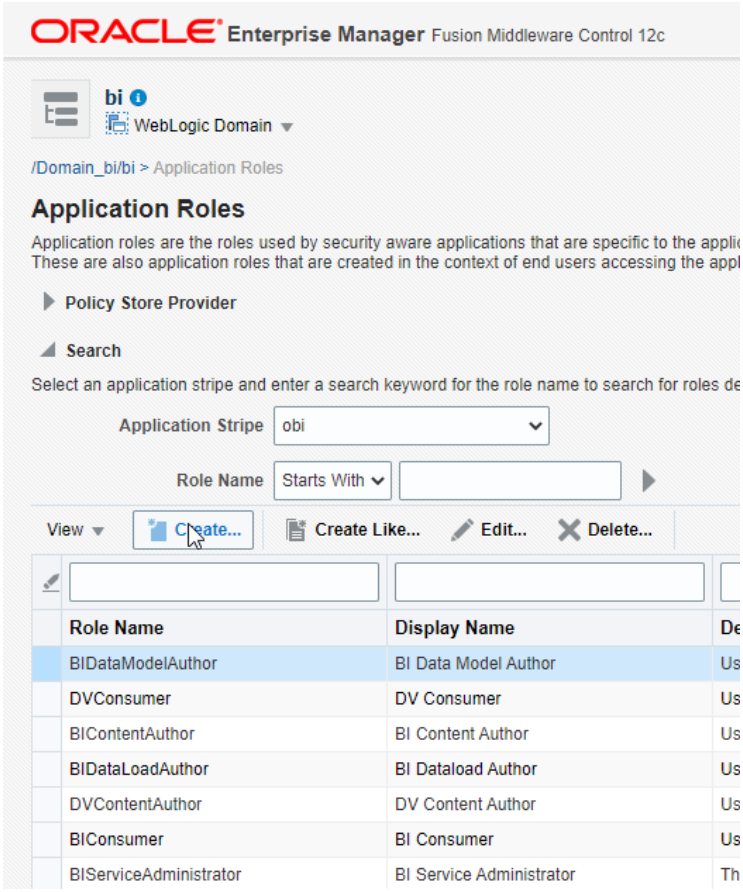
15.3.1.2 Step 1, Part 2 - Create EMBIPADMINISTRATOR Role



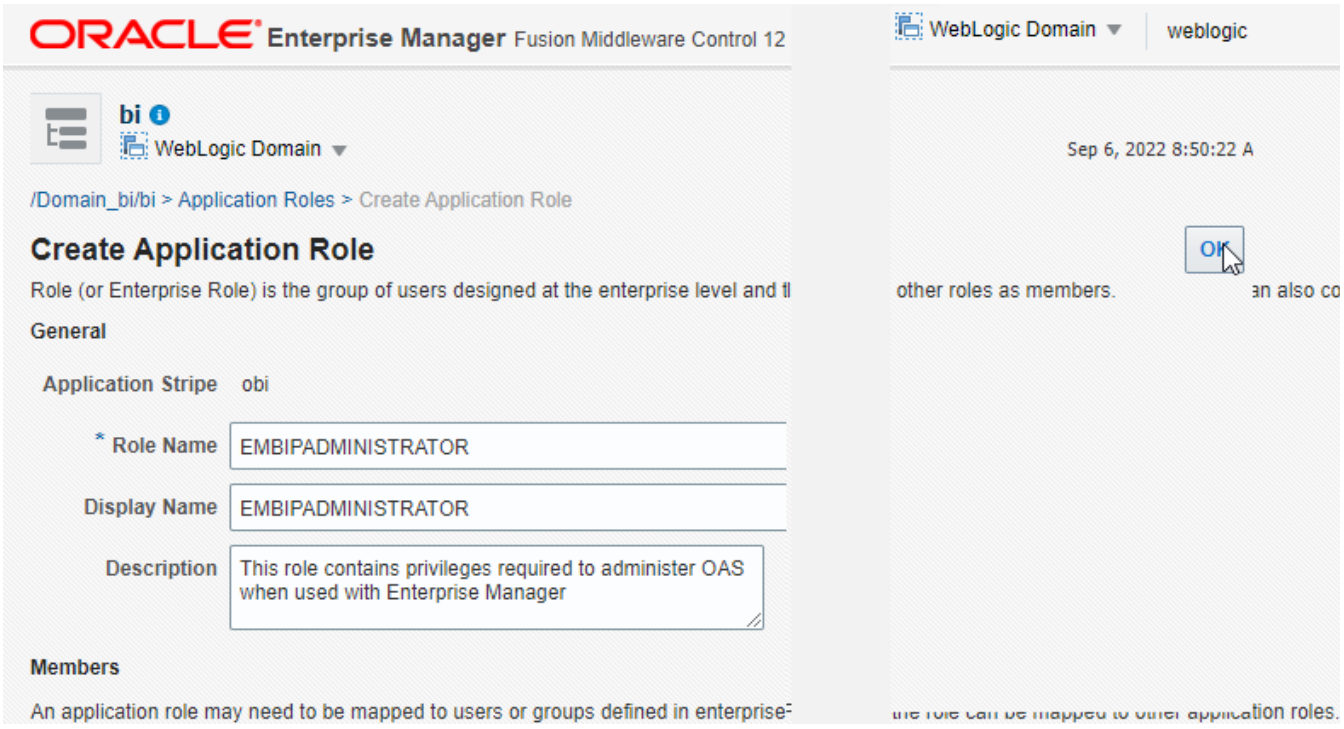


15.3.1.3 Step 1, Part 3 - Create EMBIPAdministrator and all EMBIP* Roles

» Create Role

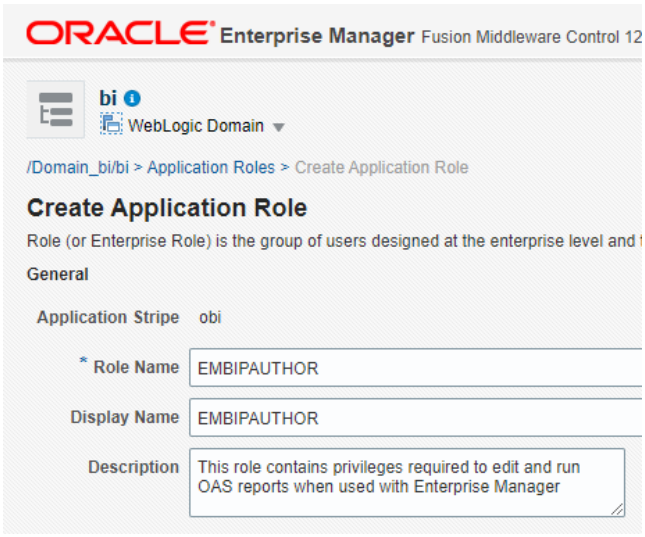


» Enter "EMBIPADMINISTRATOR" for the name and description, then press OK

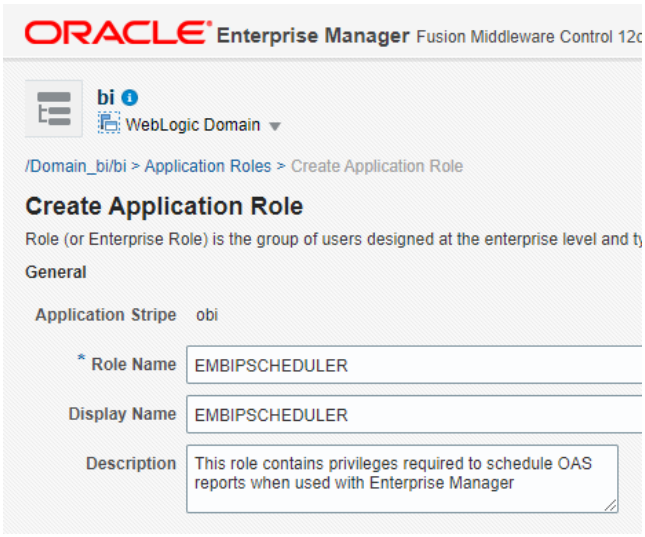


15.3.1.4 Part 4 - Repeat Above steps for the other three required roles

EMBIPAUTHOR

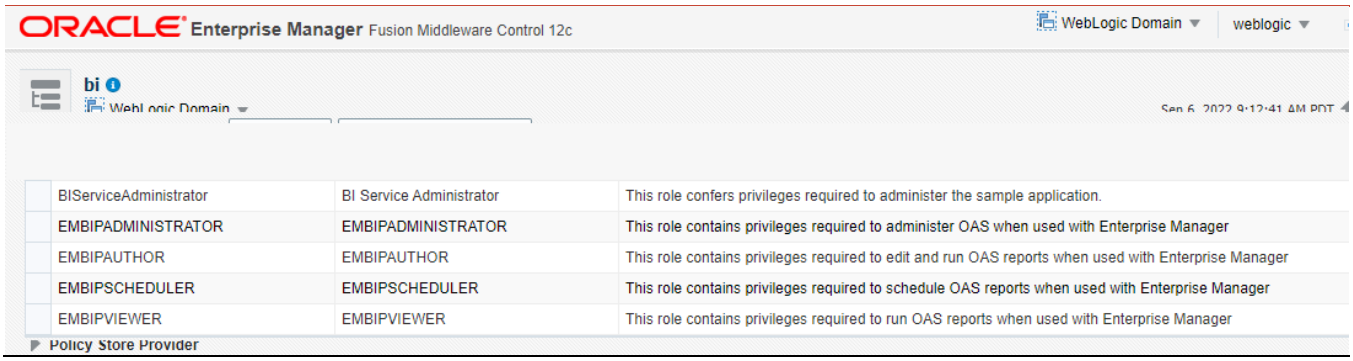


EMBIPSCHEDULER



EMBIPVIEWER

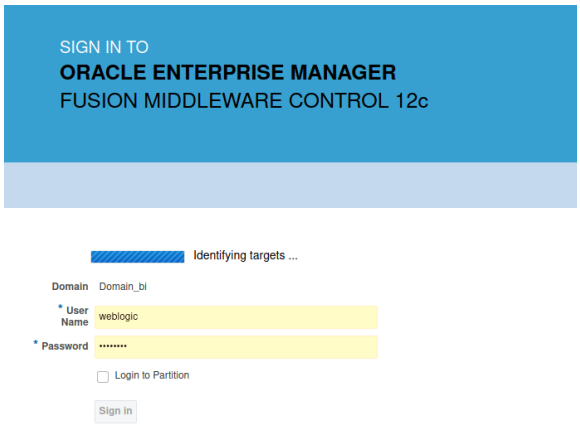
15.3.1.5 Finished Result



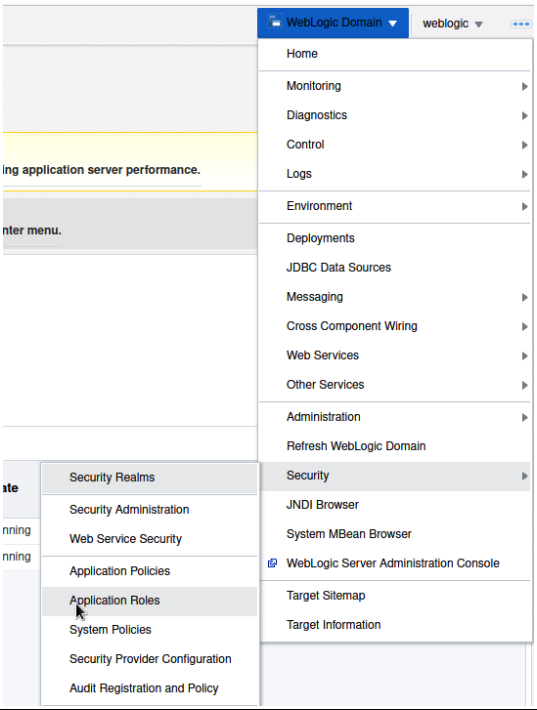
15.3.2 Step 2- Create Mapping of BI Service Administrator to EMBIPAdministrator

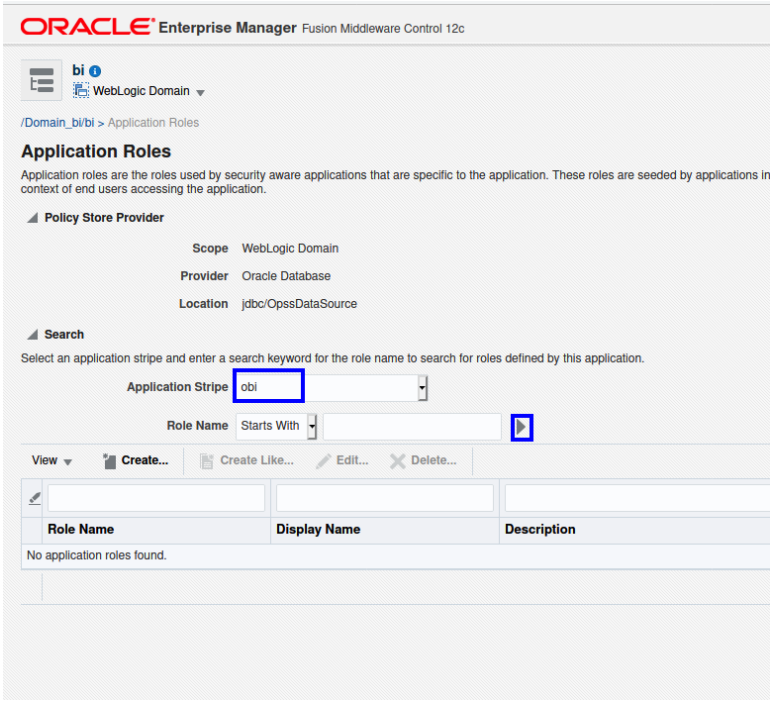
To achieve the mapping shown in Figure 54 - Mapping of EMBIP* Roles to base OAS Roles, the following steps are required:

15.3.2.1 Step 2, Part 1 - Login to Fusion Middleware Control

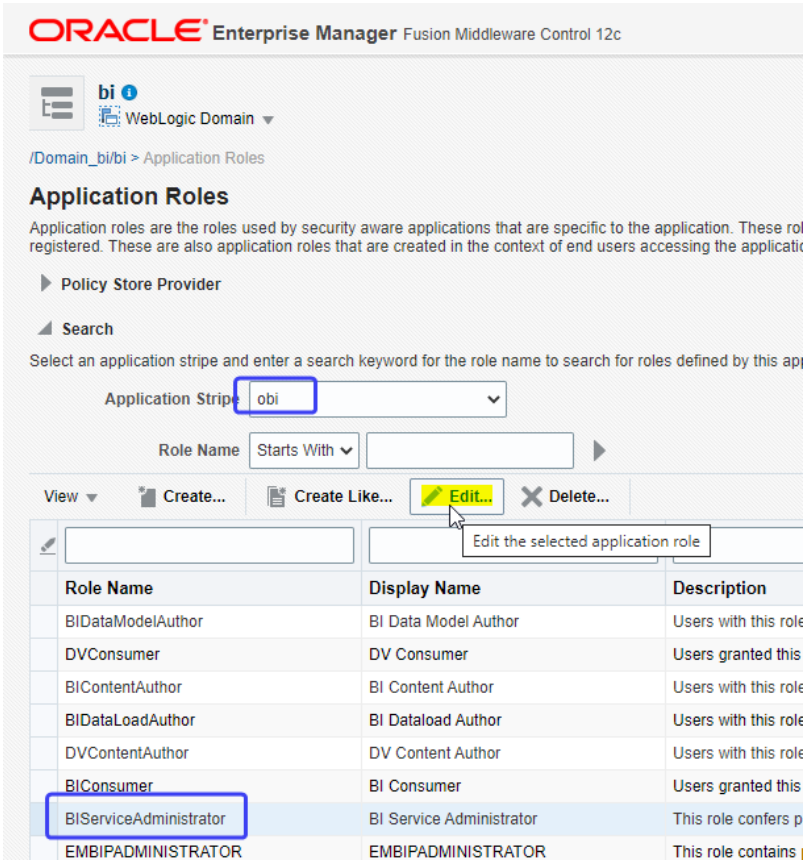


15.3.2.2 Step 2, Part 2 - Navigate to OBI Application Stripe

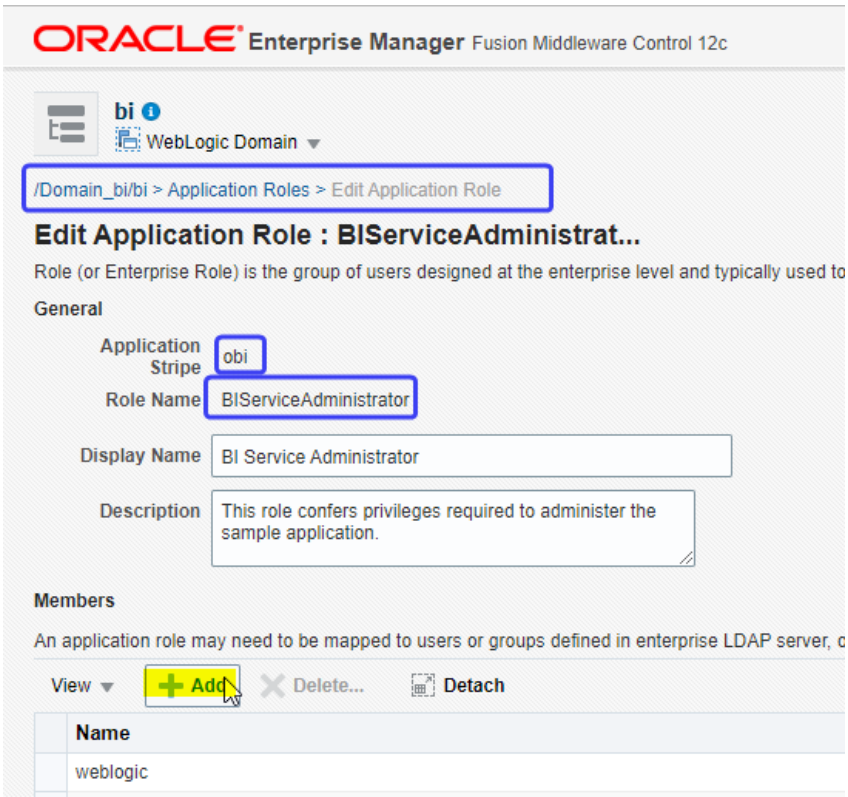




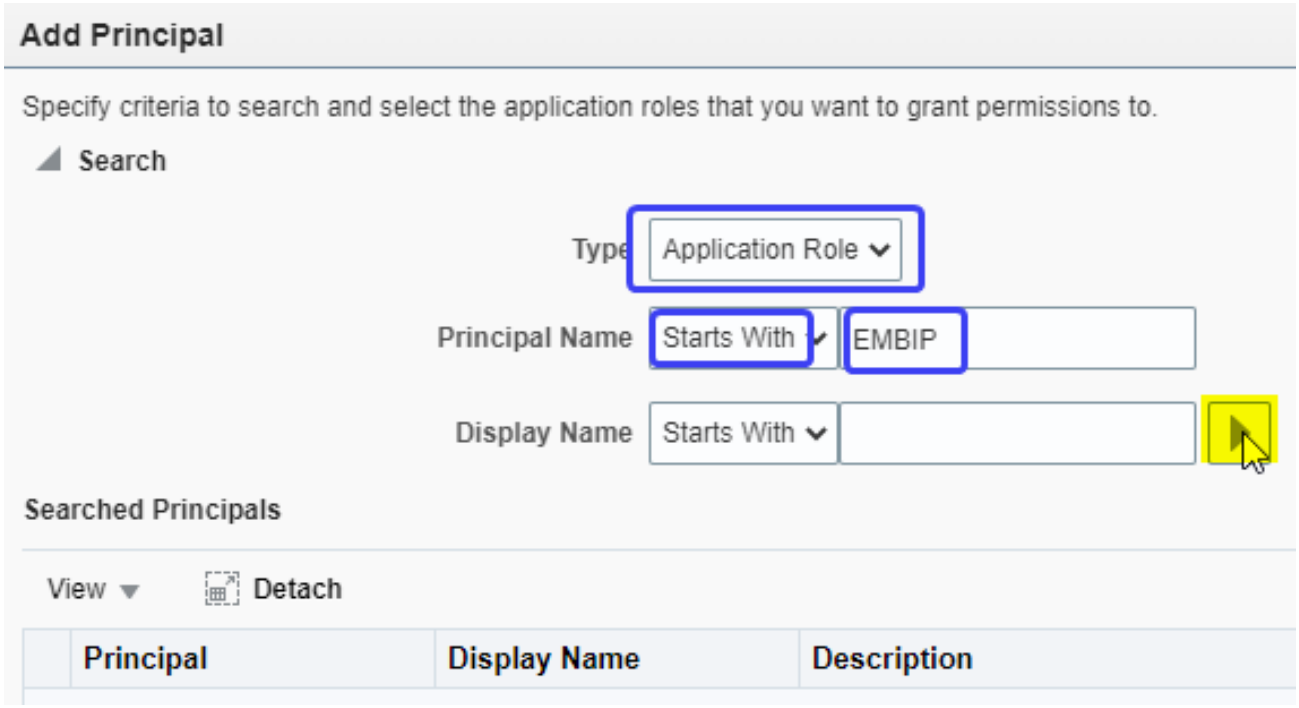
15.3.2.3 Step 2, Part 3 - Edit the BIServiceAdministrator role



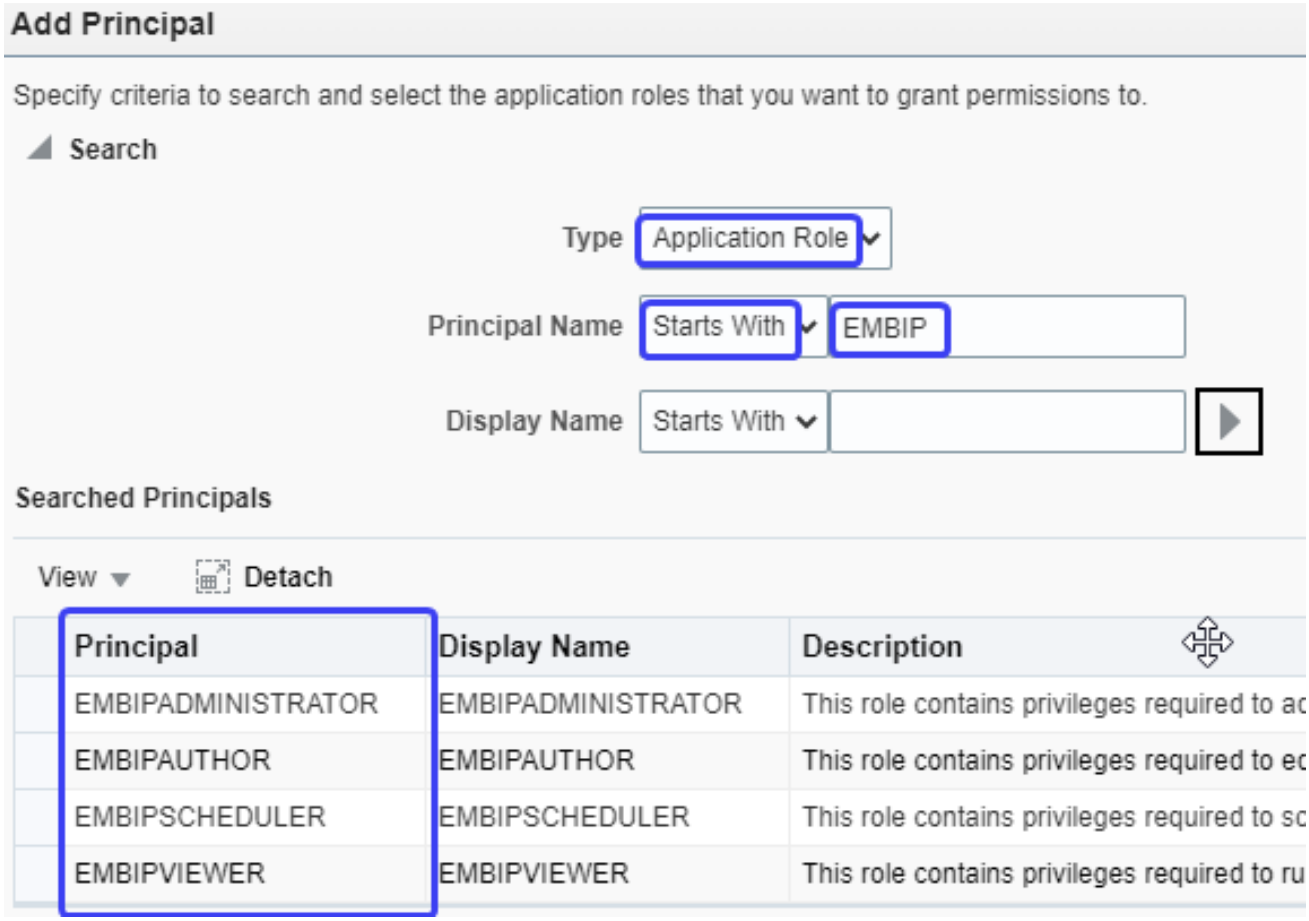
15.3.2.4 Step 2, Part 4 - Click Add to add a role mapping



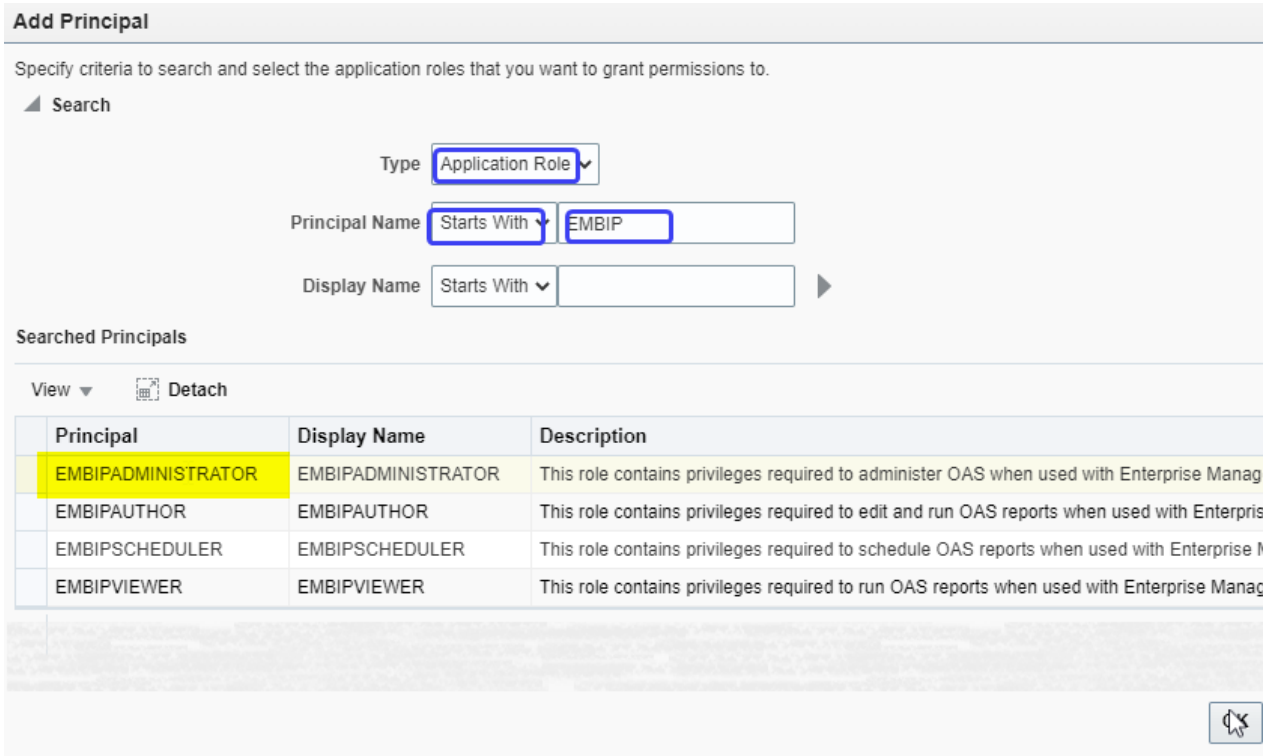
15.3.2.5 Step 2, Part 5 - Search for the EMBIP roles



15.3.2.6 Step 2, Part 6 - Results of the search

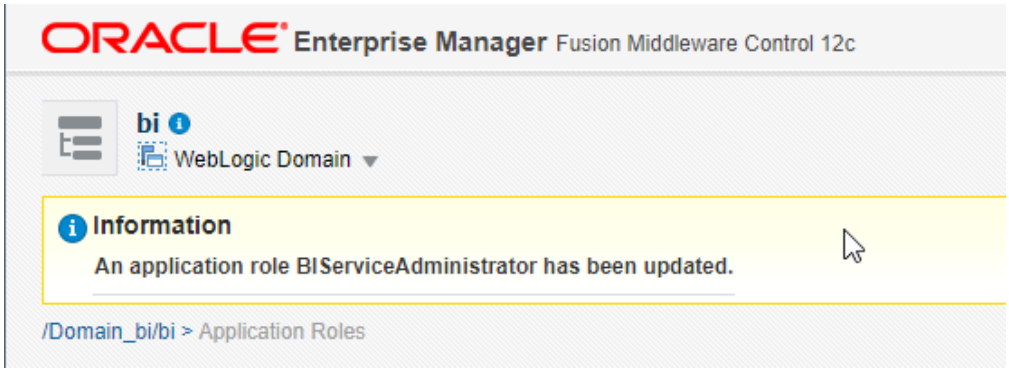


15.3.2.7 Step 2, Part 7 - Select the EMBIPADMINISTRATOR role and click OK



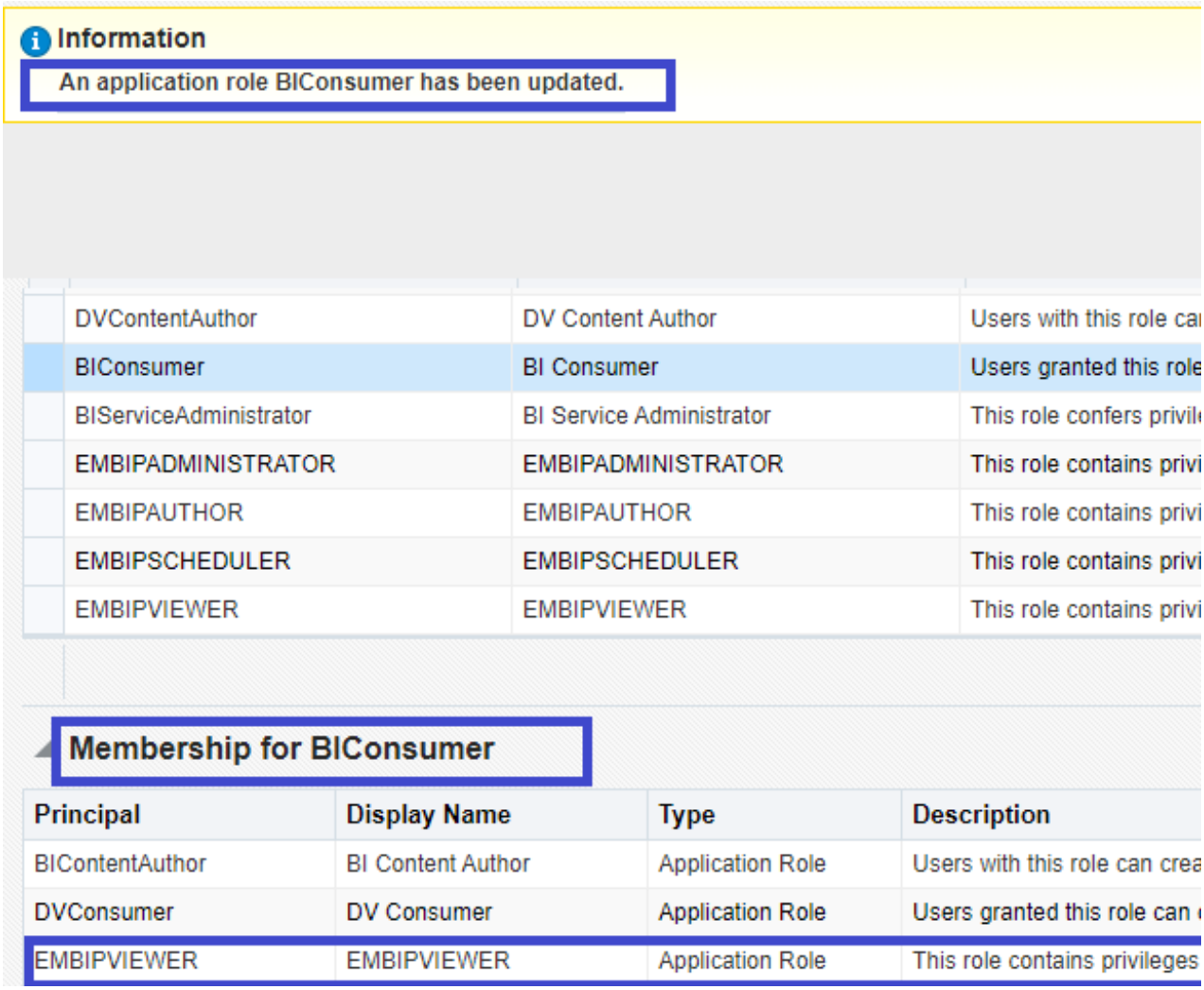
15.3.2.8 Step 2, Part 8 - The New list is shown. press OK

15.3.2.9 Step 2, Part 9 - Confirmation

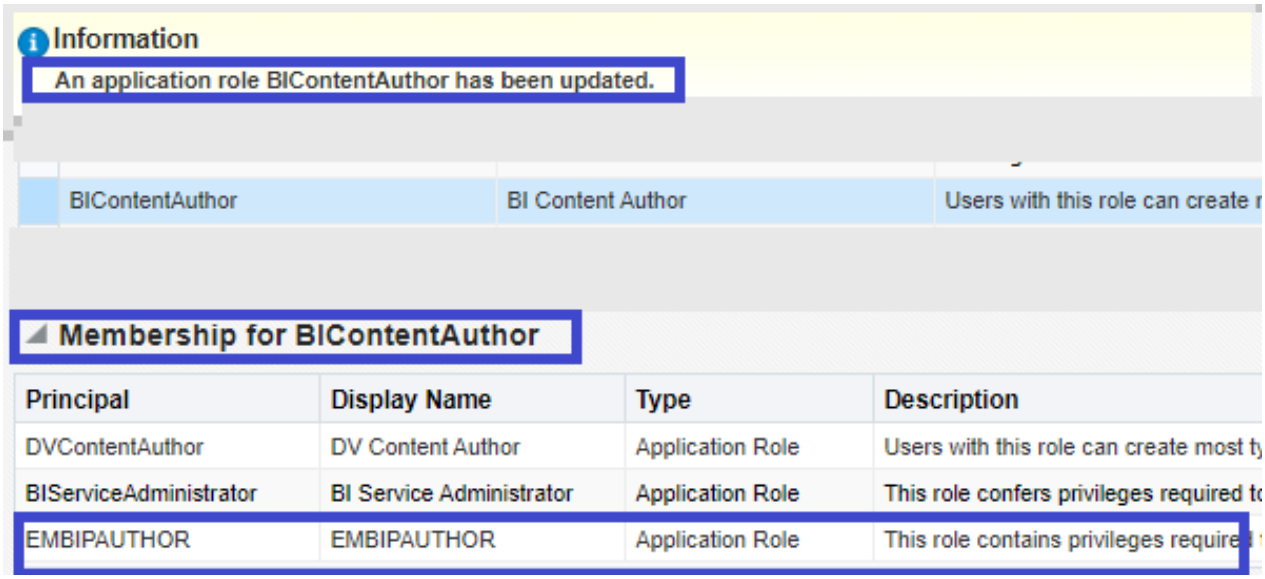


15.3.3 Step 3 -Repeat step 2 twice more, for the other EMBIP roles: Completed Screen Shots Shown

1. EMBIPAUTHOR



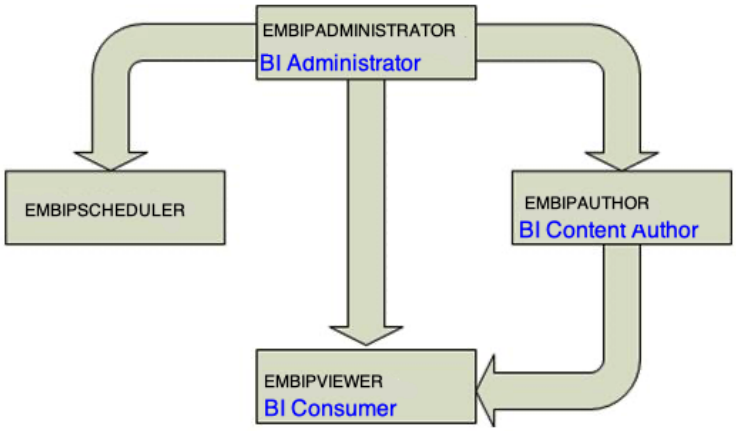
2. EMBIPVIEWER



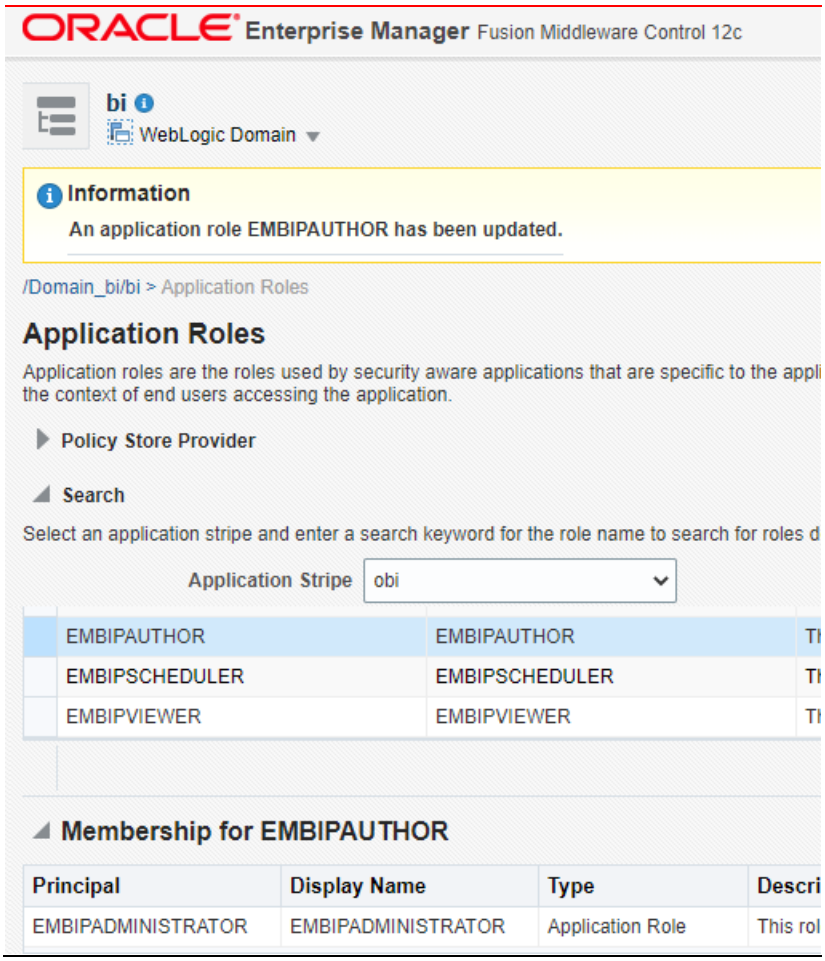
15.3.4 Step 4 – Configure Role Hierarchy for EM roles (EMBIP*)

Referring to 'Figure 53- Required Role Hierarchy for OAS Roles, including EM roles', the roles created in the prior step need to be repeated for the specific EMBIP* roles.

```
   EMBIPAUTHOR role        requires EMBIPADMINISTRATOR            as a member.
EMBIPSCHEDULER role        requires EMBIPADMINISTRATOR            as a member.
   EMBIPVIEWER role        requires EMBIPAUTHOR                   as a member.
```



An example showing the proper membership for the EMBIPAUTHOR role is shown below:



15.3.5 Step 5 – Summary

Once all the prior steps are completed, the basic role hierarchy that is required for proper management and execution of the Oracle provided reports that are installed alongside Enterprise Manager 13.5.

However, for individual Enterprise Manager administrators to have access to the various required permissions, these Enterprise Manager administrators need to be granted membership in one of the specified roles.

As a simple example, if the EM administrator named EMBIP_VIEWER1 needs to be able to execute Oracle provided reports, then EM administrator EMBIP_VIEWER1 needs to be granted membership in the EMBIPVIEWER application role.

Likewise, if the EM administrator named EMBIP_AUTHOR1 needs to be able to edit and create private reports, then the EM administrator EMBIP_AUTHOR1 needs to be granted membership in the EMBIPAUTHOR role.

- Note that direct editing of the Oracle provided reports is not supported. However, these reports can be copy/pasted and then the copy can be customized.

Please also note that the EM administrators above would normally have their credentials managed by the appropriate LDAP provider that was setup in 'section 11.2.5.3- Detailed Steps for Configuration of OAS for LDAP'.

CHAPTER 16. MIGRATING CUSTOMIZED BIP REPORTS TO STANDALONE OAS

In addition to support for the Oracle provided out of box reports, customized reports developed in EM 13.4, on BIP 12.2.1.3, can be migrated to OAS.

The standard process for this, using BIP or OAS, is to download the report from the prior release, and upload the report to the current release.

Make sure to download these customized reports from EM 13.4 prior to the upgrade to EM 13.5.

Since BIP reports are composed of 2, and sometimes 3, separate objects, all these need to be downloaded/uploaded.

Additionally, the complete folder path(s) for these objects needs to be maintained.

It is often easiest to download/upload whole catalog folders as opposed to individual objects.

The steps documented in this chapter assume that the download steps are executed against the embedded BIP included with Enterprise Manager 13.4, and that the upload steps are executed against the standalone OAS.

16.1 Example Use Case

For this example, a customized report named Targets has been developed.

- This report uses the BIP interactive report editor and viewer.
- The data model and the report are in the BIP shared folder named MyReports.
- Inside of this shared folder are two subfolders: Datamodels and Reports.
- Inside of these two subfolders are the report Datamodel and report, respectively.

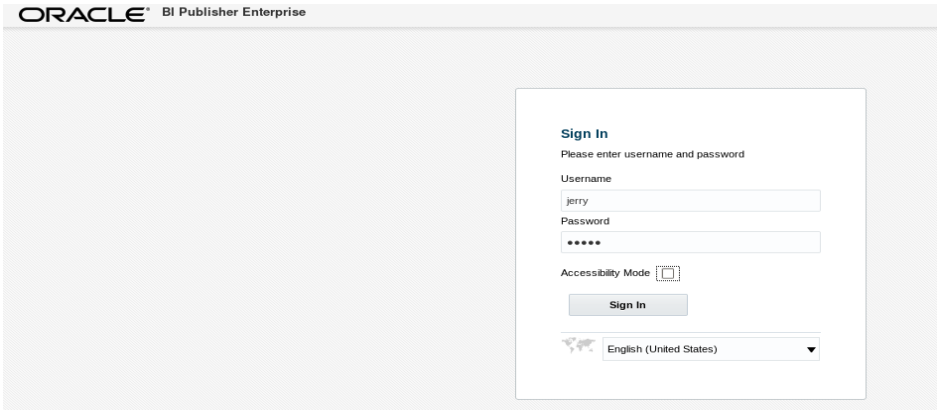
For this example, the EM administrator that developed the report is named 'jerry'.

16.2 Outline of steps to download the report from EM 13.4:

1. Login to the embedded BIP from Enterprise Manager 13.4
2. Navigate to the BIP catalog.
3. Expand the 'Shared Folders'
4. Click on your customized report folder.
5. Click on Download from the tasks pane.
6. Use the operating system dialog, if required, to save the folder as a xdrz file.
7. Confirm that the file was downloaded correctly.

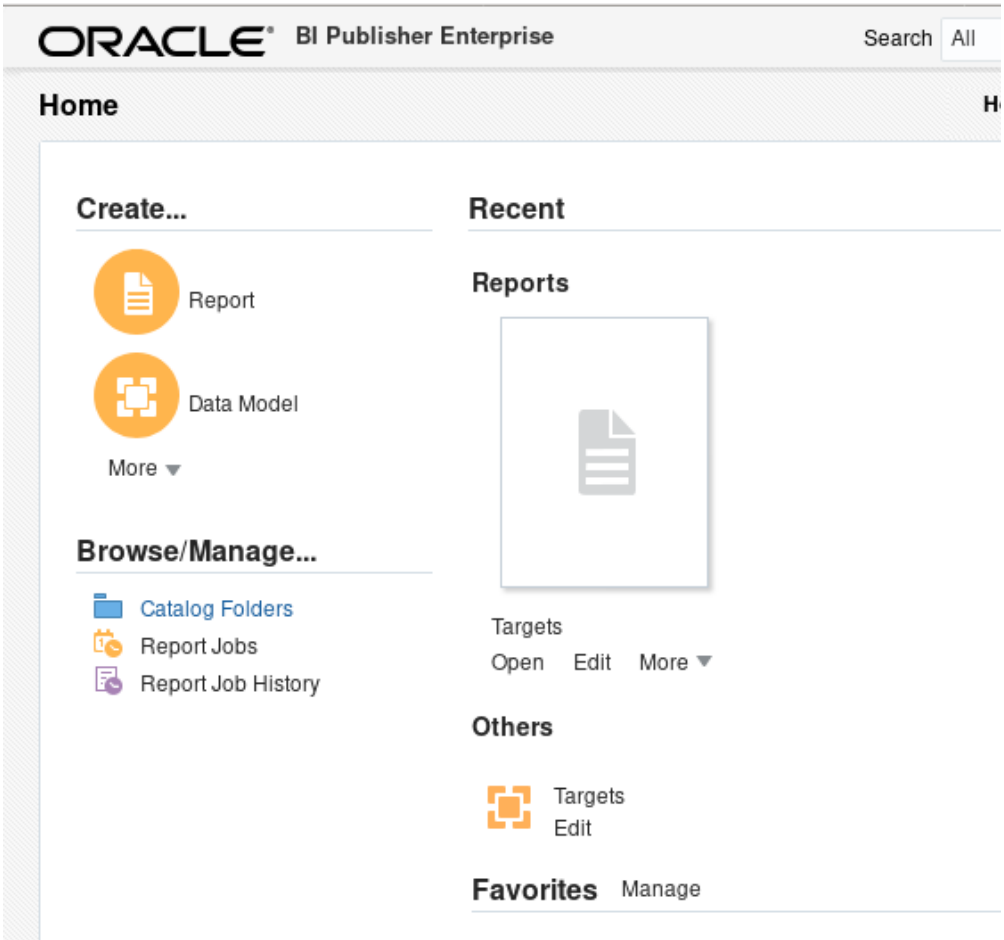
16.2.1 Step 1 – EM 13.4 – Login to BIP

Login to the BIP system on the EM 13.4 host as the user 'jerry'.



16.2.2 Step 2 – From the BIP home screen, click on the link for 'Catalog Folders'

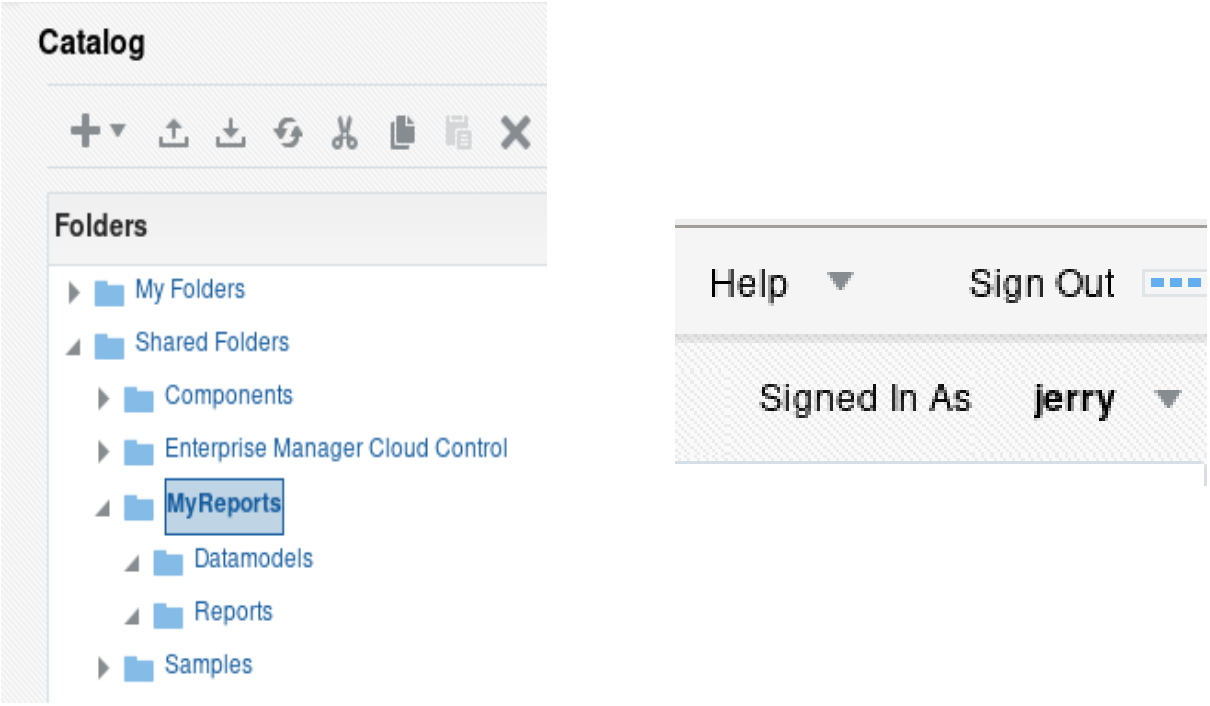
Underneath the Browse/Manage… heading, chose **the Catalog Folders** link.



16.2.3 Step 3 – If needed, expand the 'Shared Folders' node in the catalog tree.

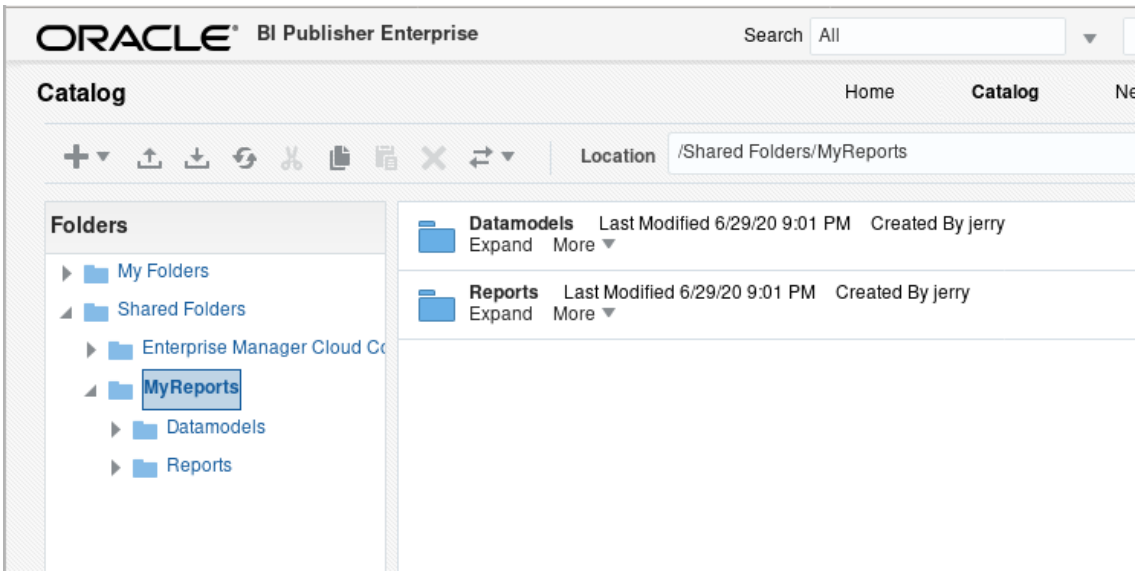
Make sure that you are logged in as the correct user (jerry in this example).

Navigate the OAS catalog tree such that the MyReports node is expanded with two sub-folders.



16.2.4 Step 4 - Click on the MyReports' Folder.

After the node is clicked on the left-hand tree, the right-hand side of the browser will show the contents of that folder. In this case, there are two sub-folders.

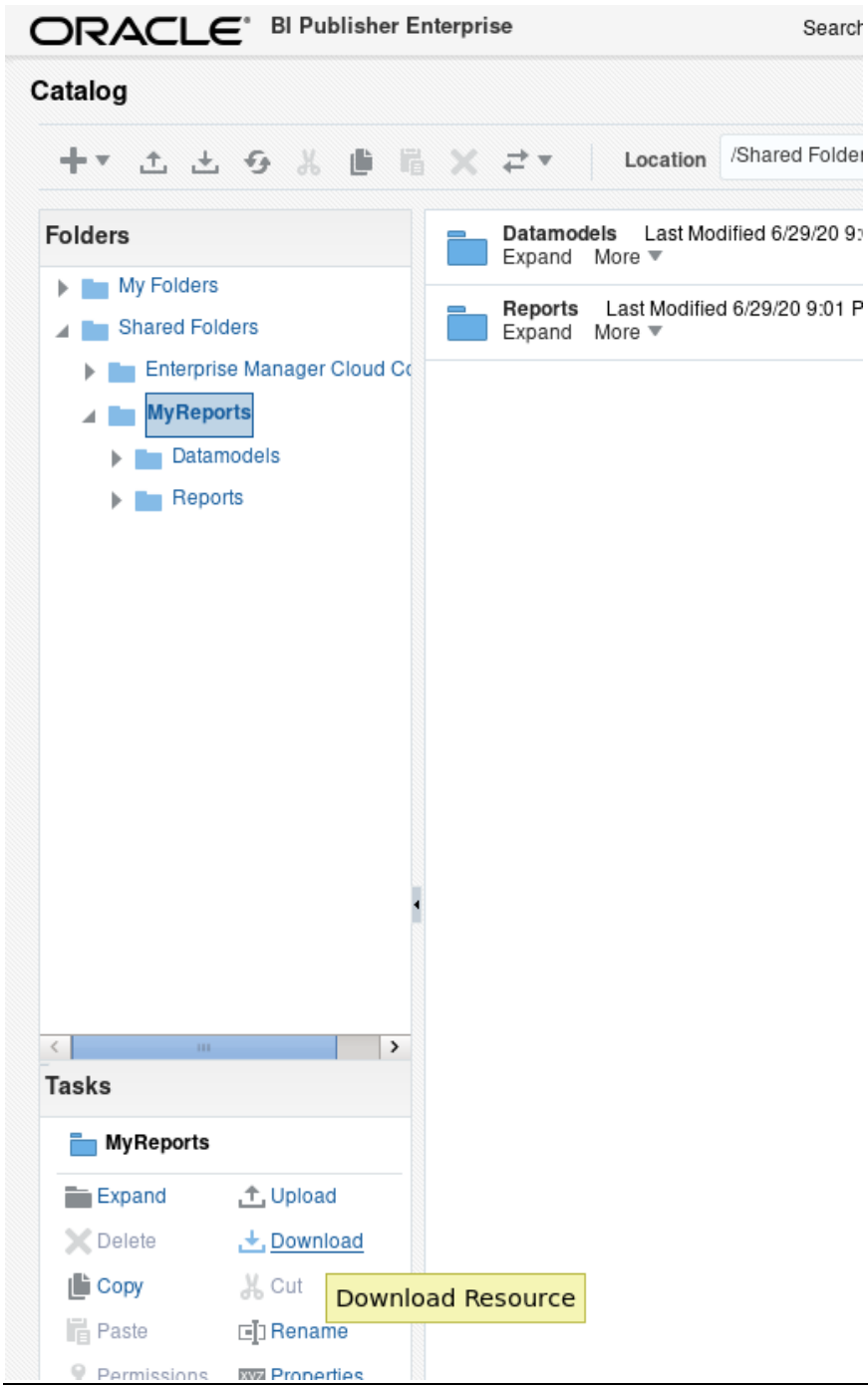


16.2.5 Step 5 - Click on Download.

The Download link is in the bottom-left-hand side of the browser window, in the 'Tasks' pane.

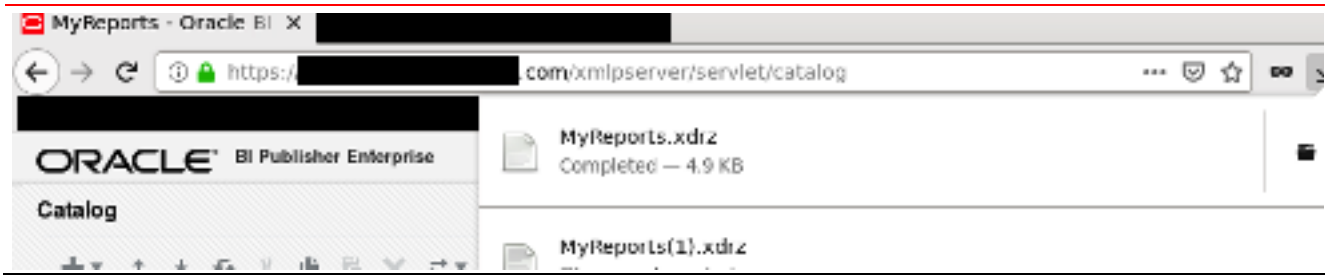
All catalog related activities can be access in the Tasks pane.

When you click on the Download link, an operating system, or browser, dialog may come up asking where to save the downloaded file.



16.2.6 Step 6 – You may be asked what to do with the file named MyReports.xdrz

» Choose to save this on your local disk.



»

16.2.7 Step 7 - Confirm that the file was downloaded correctly.

```
$ unzip -l MyReports.xdrz
Archive:  MyReports.xdrz
  Length      Date    Time    Name
---------  ---------- -----   ----
      456  06-29-2020 21:17   ~metadata.meta
        0  06-29-2020 21:17   Reports/
      420  06-29-2020 21:17   Reports/~metadata.meta
     2459  06-29-2020 21:17   Reports/Targets.xdoz
        0  06-29-2020 21:17   Datamodels/
      423  06-29-2020 21:17   Datamodels/~metadata.meta
     1453  06-29-2020 21:17   Datamodels/Targets.xdmz
---------                     -------
     5211                     7 files
```

16.3 EM 13.5 – Upload Report Folder to OAS

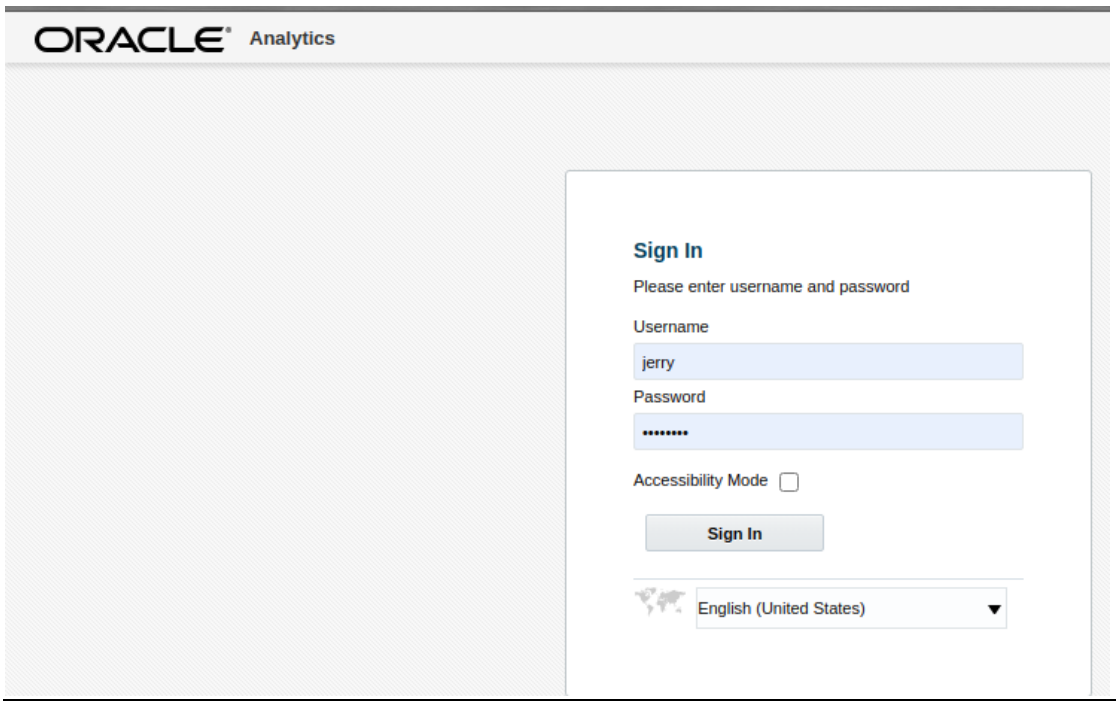
Outline of steps to upload the BIP report folder to the standalone OAS:

Assumption: The standalone OAS has been configured using the detailed steps from this guide.

1. Login to OAS.
2. Click on Catalog Folders.
3. Expand Shared Folders.
4. Choose the Upload link from the Tasks pane.
5. Press the Choose File button.
6. Choose the file previously downloaded, for example, MyReports.xdrz
7. Optionally choose the Overwrite checkbox.
8. Click the Upload button.
9. Confirm the OAS catalog is displayed as expected.
10. Run the report.

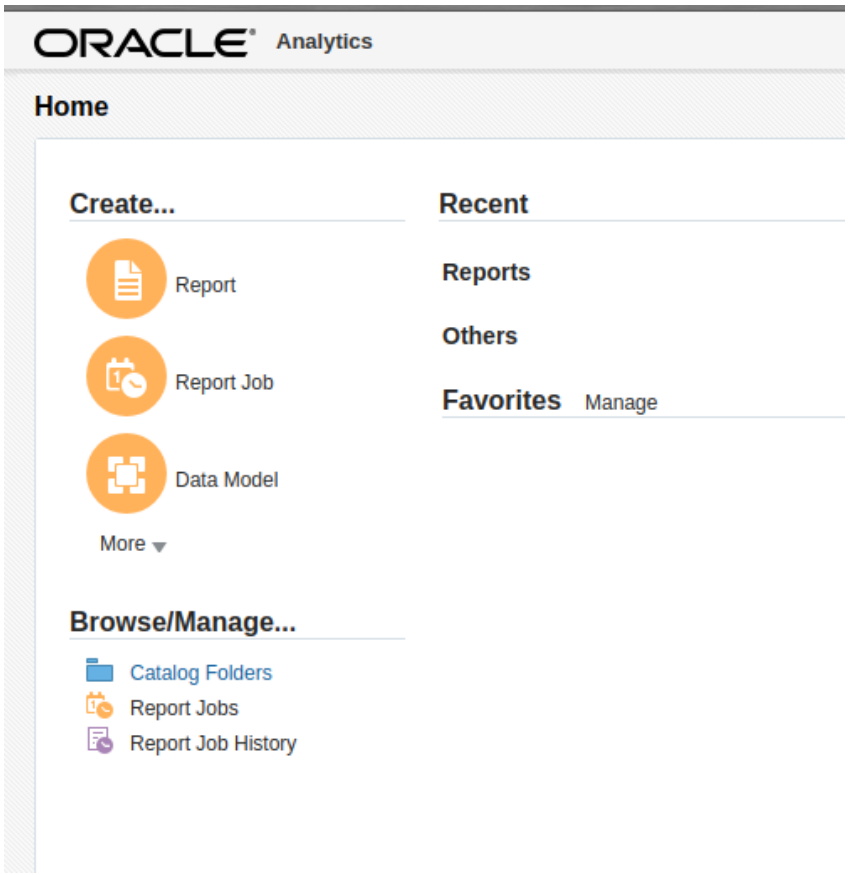
16.3.1 Step 1 - Login to the OAS system on the standalone OAS host

- Login to the OAS system as the user 'jerry'.



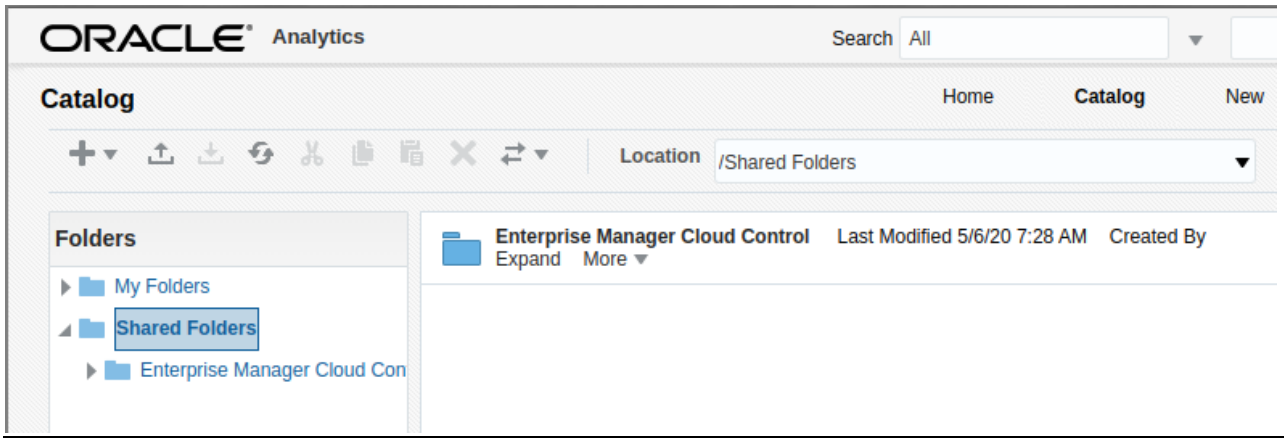
16.3.2 Step 2 - From the OAS home screen, click on the link for 'Catalog Folders'.

Underneath the Browse/Manage... heading, click on the Catalog Folders link.



16.3.3 Step 3 - If needed, expand the 'Shared Folders' node in the catalog tree.

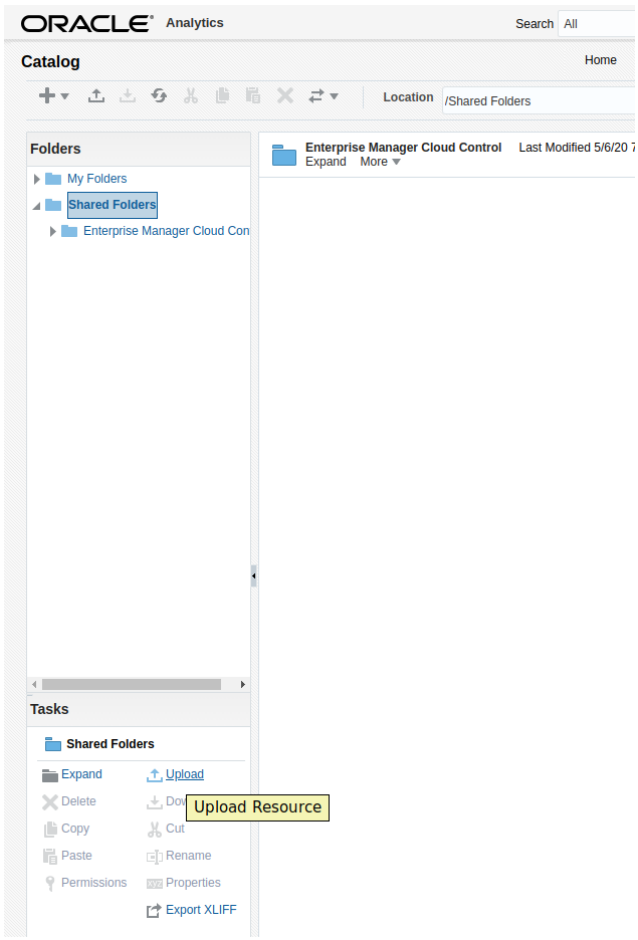
It may be necessary to expand the Shared Folders node to see the equivalent screen shot below.



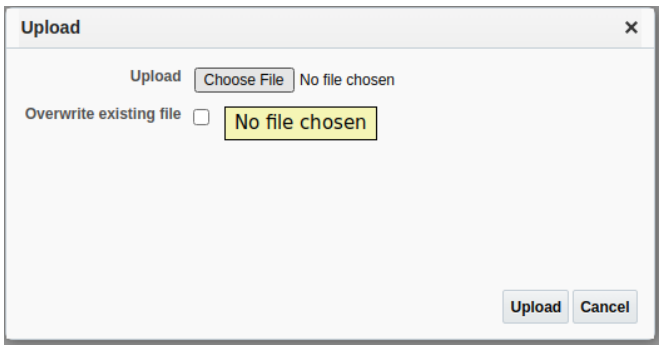
16.3.4 Step 4 - Click on Upload.

The Upload link is in the bottom-left-hand side of the browser window, in the Tasks pane.

» NOTE: This step is symmetrical to the Download steps we performed on BIP earlier.

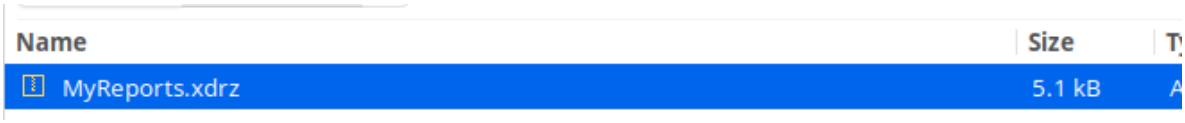


16.3.5 Step 5 - Click the button 'Choose File' in the Upload popup window.



16.3.6 Step 6 - Choose the file named 'MyReports.xdrz'

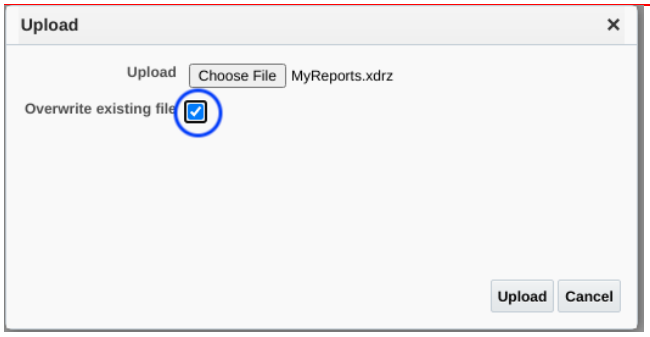
- On the operating system dialog, choose the file named MyReports.xdrz.

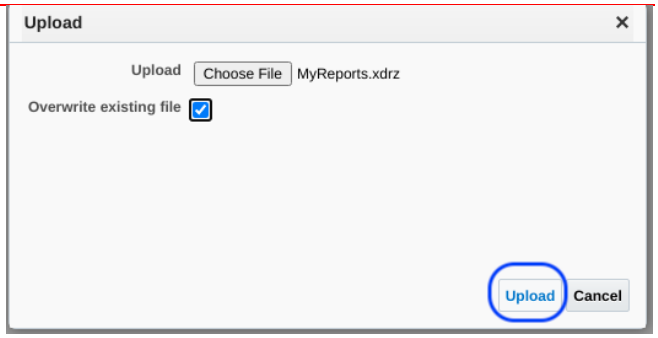


16.3.7 Step 7 – Proceed with the upload

» If desired, choose the Overwrite existing file checkbox.

» Press the Upload button.

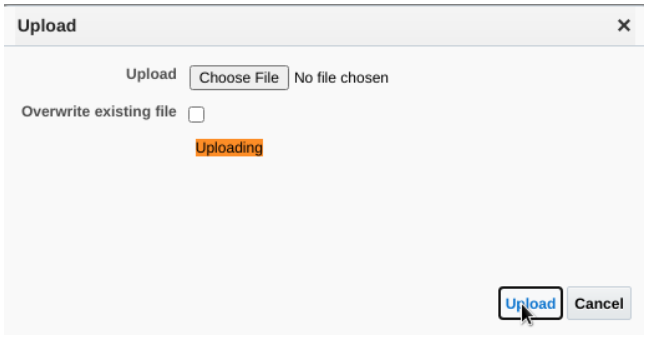


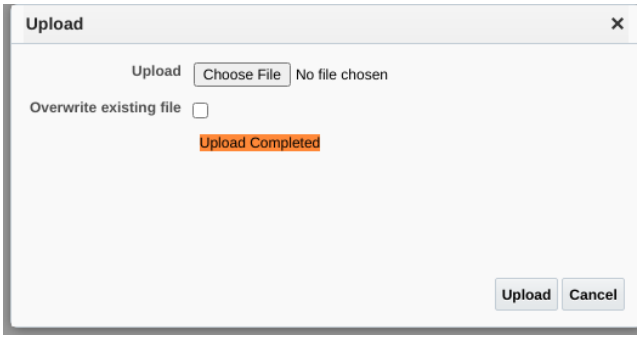


16.3.8 Step 8 – Monitor the status of the upload

» Initially the message Uploading is show.

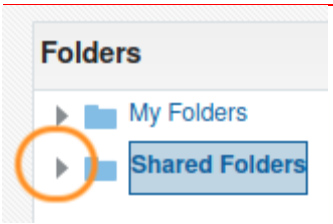
» Once the upload is completed, the message Upload Completed is briefly displayed.



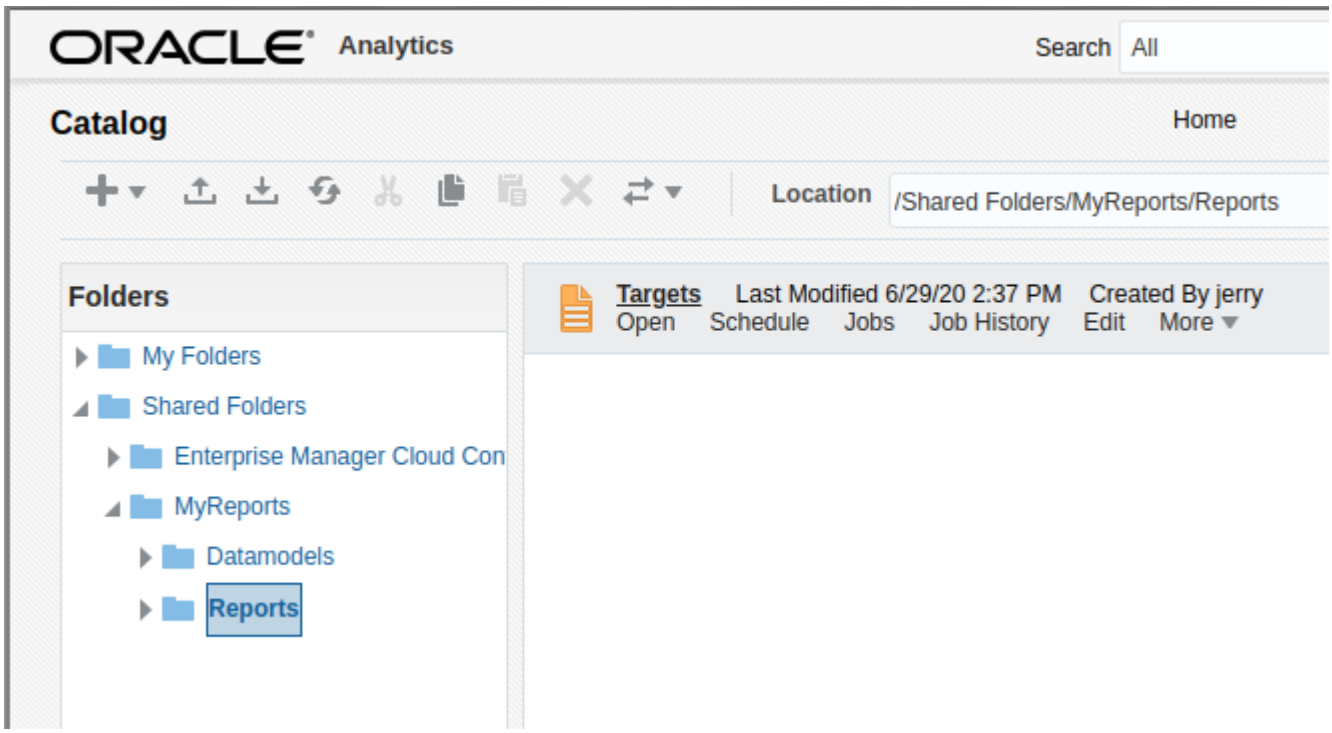


16.3.9 Step 9 – Confirm the correct layout of the OAS Catalog Folders.

» It might be necessary to expand and collapse the Shared Folders node in the tree, as shown below:



» OAS Catalog after successful upload.



16.3.10 Step 10 - Confirm that the report executes as expected.

- » If the report fails to execute with the message Error with Data XML, then the Datamodel may need to be edited to change the Datasource name.
- » For example, in EM 13.4 all reports used the Datasource named EMREPOS.
- » For EM 13.5, when utilizing LDAP for OAS and EM, multiple EM systems can be reported against, using Datasource named 'EMREPOS1, EMREPOS2 ...'
- » In this case, change the Datasource name, in the Datamodel, as appropriate.
- » For example, from EMREPOS to EMREPOS1.

CHAPTER 17. UPGRADING TO ENTERPRISE MANAGER 13.5

17.1.1 Step A: Follow the detailed steps in this workbook before upgrading to EM 13.5.

1. Part 1: Install and Configure the standalone OAS:
   - Utilize this technical brief to install and configure a standalone OAS 6.4.0 installation on a separate, dedicated, host system.
   - Ensure that all relevant procedures up to and including the prior chapter are complete.
     - Integrate the standalone OAS security configuration, as detailed, against an existing Enterprise Manager 13.4 installation(s).
2. Part 2: Migrate customized Reports: Detailed in 'Chapter 16 -Migrating customized BIP reports to standalone OAS'
   - Utilize the existing Enterprise Manager 13.4 environment, and the embedded BI Publisher user interface, to download any customized reports to your local PC or desktop system.
   - Utilize the standalone OAS 6.4.0 user Interface to upload these same customized reports, from your local PC or desktop system to the standalone OAS.
   - Do not proceed to step B until all relevant internal corporate requirements are met.

17.1.2 Step B: Upgrade to Enterprise Manager 13.5

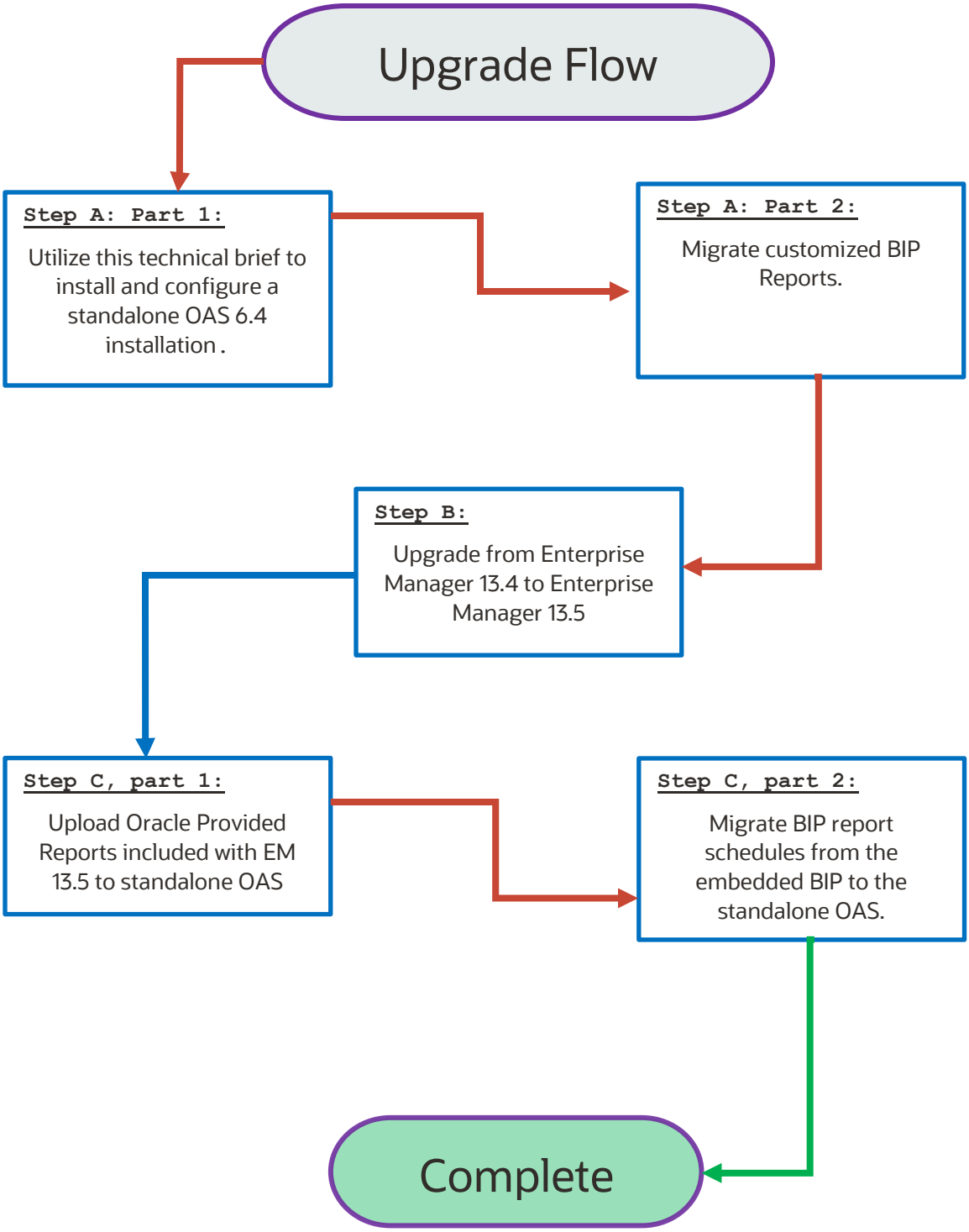
1. Follow all documented procedures according to the official Enterprise Manager documentation set.
2. Do not proceed to step C until all relevant corporate internal requirements are met.

17.1.3 Step C: Update the standalone OAS installation for use with Enterprise Manager 13.5

1. Part 1: Detailed in 'Chapter 18- Uploading Enterprise Manager Provided Reports'
   - Upload the updated set of Oracle Provided out of Box reports that are included with EM 13.5.
     - Utilize the standalone OAS User Interface to upload this new set of Oracle Provided Out-of-Box reports to OAS.
2. Part 2: Detailed in 'Chapter 19- Migrating BIP Schedules from EM 13.4'
   - Migrate the BIP report schedules, from the embedded BIP included in EM 13.4, to the standalone OAS.

The following flow chart illustrates the upgrade steps

Figure 55. Flow chart of best practice upgrade procedure



CHAPTER 18. UPLOADING ENTERPRISE MANAGER PROVIDED REPORTS

18.1 Framework Reports

The Enterprise Manager Provided Reports for the base framework will be in the MW_HOME in which EM 13.5 is installed.

```
$ ls -sh $MW_HOME/sysman/jlib/Enterprise\ Manager\ Cloud\ Control.xdrz
2.5M ..../sysman/jlib/Enterprise Manager Cloud Control.xdrz
```

18.2 Plugin Reports

Each EM plugin that is bundled with EM Provided Out of Box Reports, whether installed during the initial install/upgrade of EM 13.5, or subsequently installed via self-update or other mechanism, will follow this pattern:

```
$ ls -sh $MW_HOME/plugins/oracle.sysman.*.plugin_13.5*/metadata/bipublisherreport/emreports/*.xdrz
216K .../plugins/oracle.sysman.cfw.oms.plugin_13.5.1.0.0/metadata/bipublisherreport/emreports/Enterprise Manager Cloud Control.xdrz
. . . . . .
. . . . . .
1.5M ..../plugins/oracle.sysman.xa.oms.plugin_13.5.1.0.0/metadata/bipublisherreport/emreports/Enterprise Manager Cloud Control.xdrz
. . . . . Enterprise Manager Cloud Control.xdrz
```

18.3 Common File name for all Oracle Provided Out of Box Reports

Each set of these out-of-box reports has the name below, which facilitates straightforward upgrades to the standalone OAS installation:

```
Enterprise Manager Cloud Control.xdrz
```

18.4 Bundle Enterprise Manager 13.5 Out of Box Reports

In preparation for uploading the EM provided reports, copy all instances of files named **`Enterprise Manager Cloud Control.xdrz`** from the EM 13.5 MW_HOME, to your local desktop (i.e., using putty, scp, etc...).

On Linux systems, these files can be located using these commands:

```
$ bash
$ cd $MW_HOME
$ find . -name 'Enterprise Manager Cloud Control.xdrz'
./plugins/oracle.sysman.xa.oms.plugin_13.5.1.0.0/metadata/bipublisherreport/emreports/Enterpr
ise Manager Cloud Control.xdrz
./plugins/oracle.sysman.db.oms.plugin_13.5.1.0.0/metadata/bipublisherreport/emreports/Enterpr
ise Manager Cloud Control.xdrz
...
...
./sysman/jlib/Enterprise Manager Cloud Control.xdrz
$
```

Figure 56. Locating Oracle Provided BI Publisher Reports in Enterprise Manager 13.5 Oracle Home

Once all XDRZ files are copied to your local desktop, one may see the following structure:

```
.
├── [3.1M]  plugins
│   ├── [1.5M]  oracle.sysman.db.oms.plugin_13.5.1.0.0
│   │   └── [1.5M]  metadata
│   │       └── [1.5M]  bipublisherreport
│   │           └── [1.5M]  emreports
│   │               └── [1.5M]  Enterprise Manager Cloud Control.xdrz
│   └── [1.5M]  oracle.sysman.xa.oms.plugin_13.5.1.0.0
│       └── [1.5M]  metadata
│           └── [1.5M]  bipublisherreport
│               └── [1.5M]  emreports
│                   └── [1.5M]  Enterprise Manager Cloud Control.xdrz
└── [2.6M]  sysman
    └── [2.5M]  jlib
        └── [2.5M]  Enterprise Manager Cloud Control.xdrz

5.6M used in 11 directories, 3 files
```

Figure 57. Example layout of Enterprise Manager 13.5 Provided Out-of-Box Reports

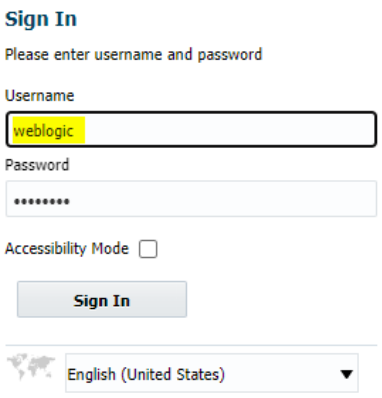
Once the example layout above is created on your local desktop system, these set(s) can then be directly uploaded to the new OAS installation using the standard OAS upload process.

Any subsequent updates or patching of Enterprise Manager out-of-box reports would be done using the standard OAS user interface, against one or more reports.

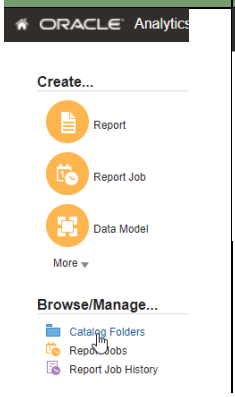
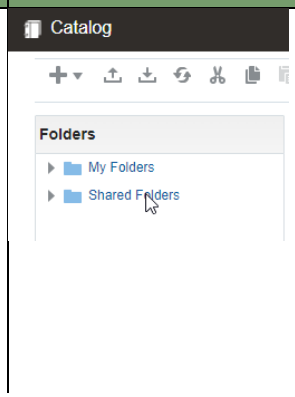
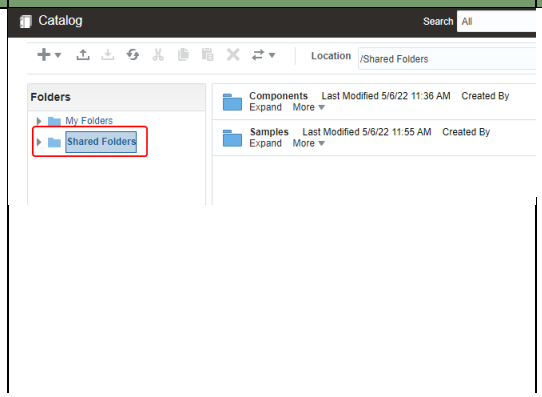
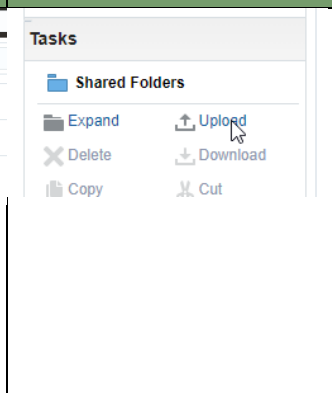
The following screenshots demonstrate some examples of uploading these out-of-box reports.

18.5 Upload Oracle Provided Out-of-box Reports to standalone OAS

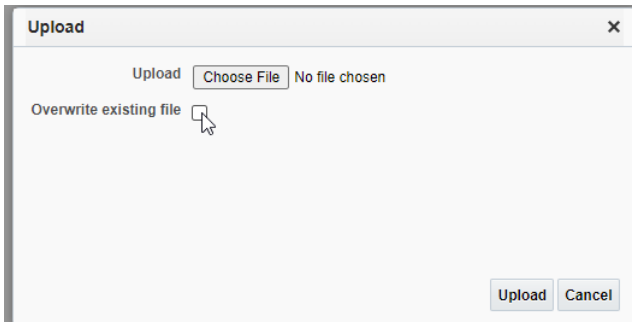
18.5.1 Step 1 - Login to the standalone OAS as a user with OAS Administrator privileges.

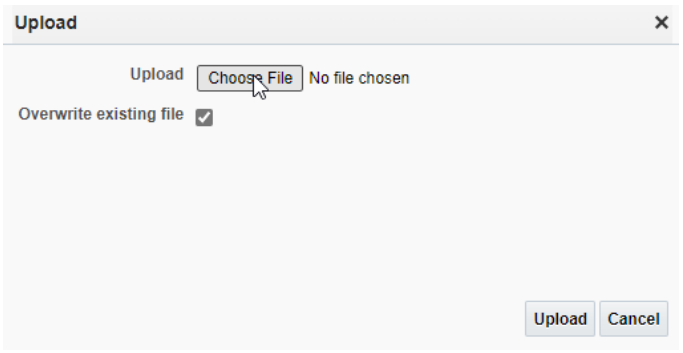
OAS for EM Repository-Based Security	OAS for LDAP Based Security
	

18.5.2 Steps 2 through 5 - Prepare to Upload to Shared Folders

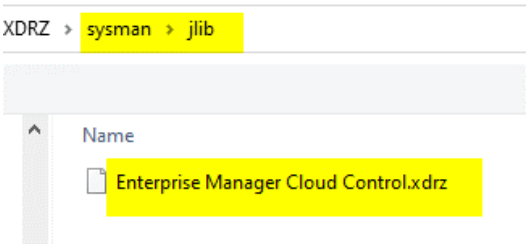
1. Navigate to Catalog	2. Navigate to Shared Folders	3. Make sure Shared Folders is highlighted	4. Select Upload
			

18.5.5 Steps 5 and 6 – Choose to upload the Reports - Ensure to select 'Overwrite Existing file'

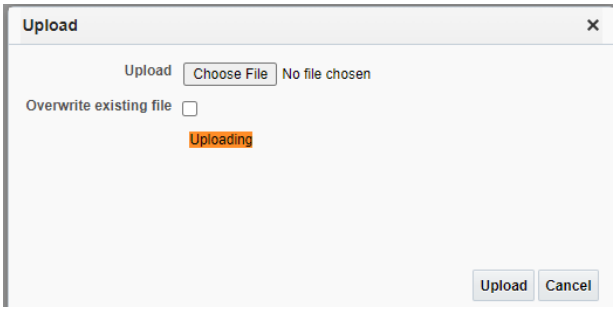


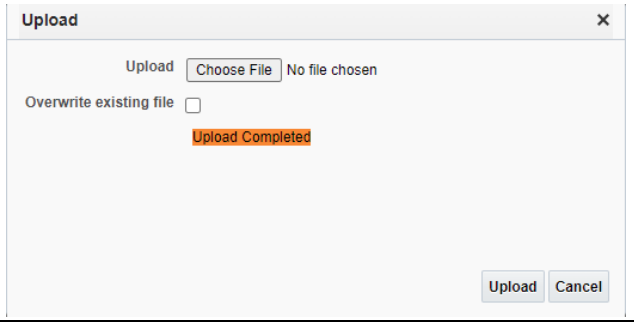


18.5.7 Step 7 and 8 – Choose the Platform Reports

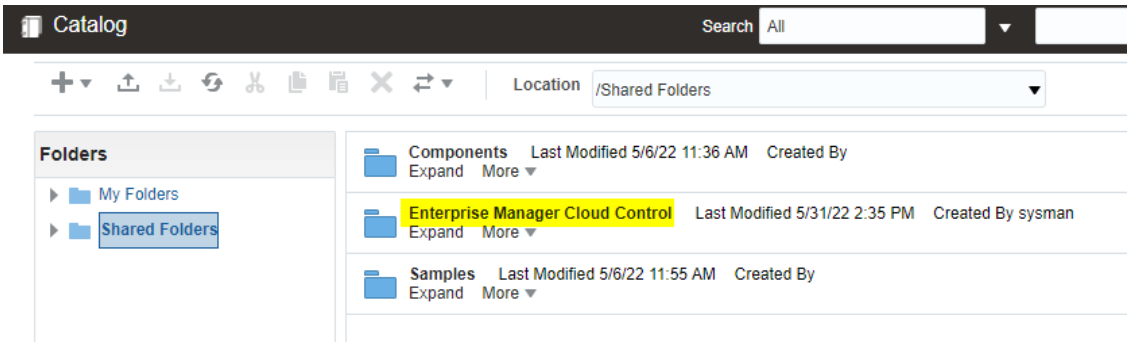


18.5.9 Steps 9 and 10 - Uploading status is shown, and in a few minutes, Upload Completed is shown.

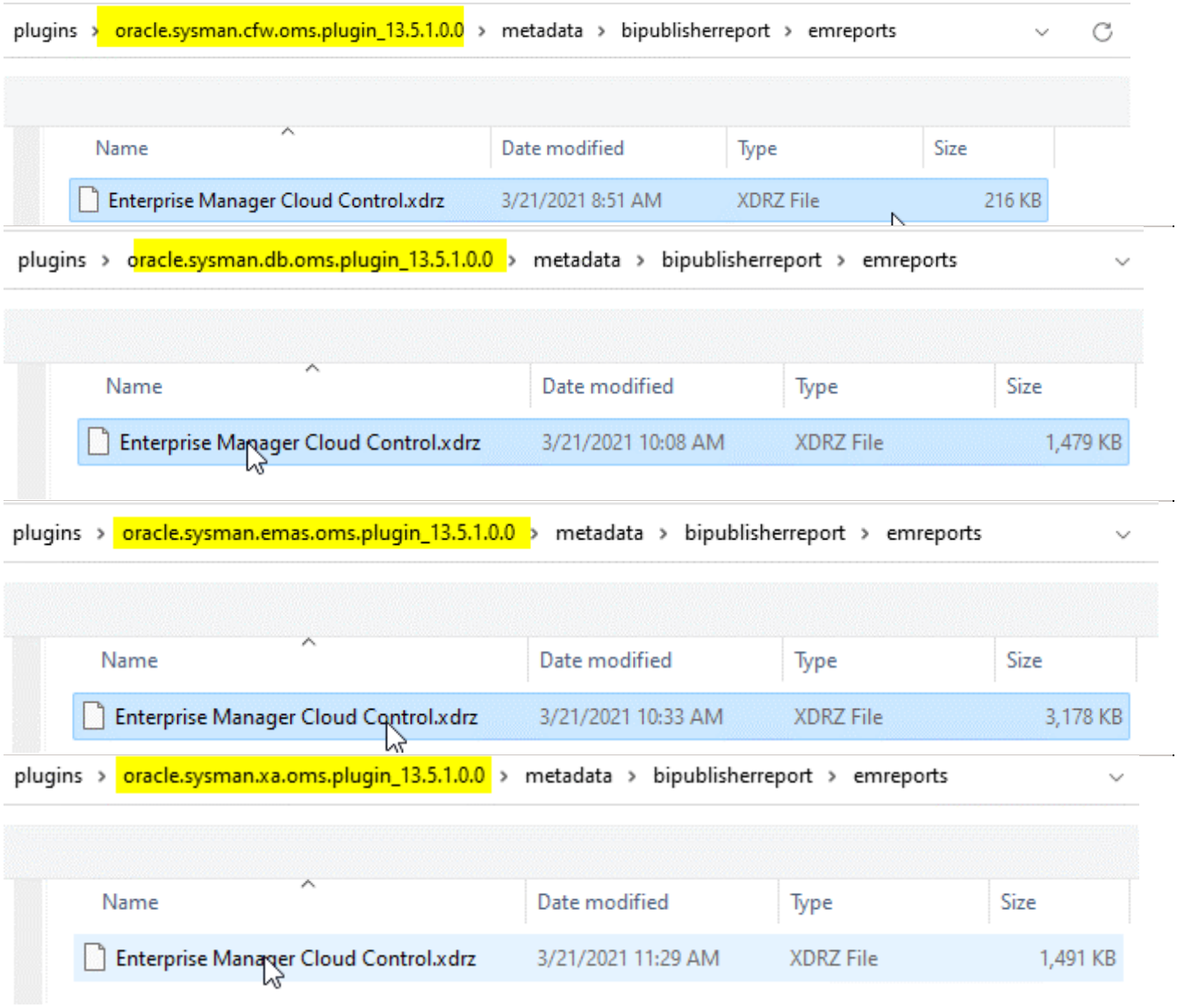




18.5.11 Step 11 – Operation Completed



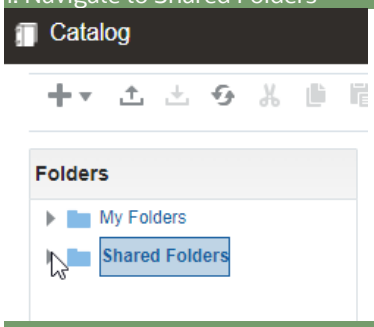
18.6 Repeat the above procedure for each EM plugin



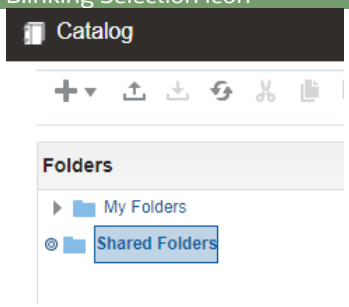
18.7 Verify Sample Report

- This series of 4 steps demonstrate testing the sample report.

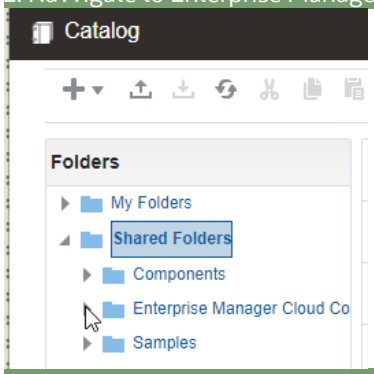
1. Navigate to Shared Folders



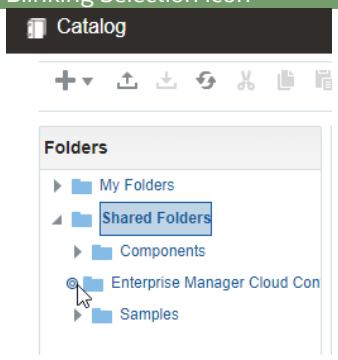
Blinking Selection Icon



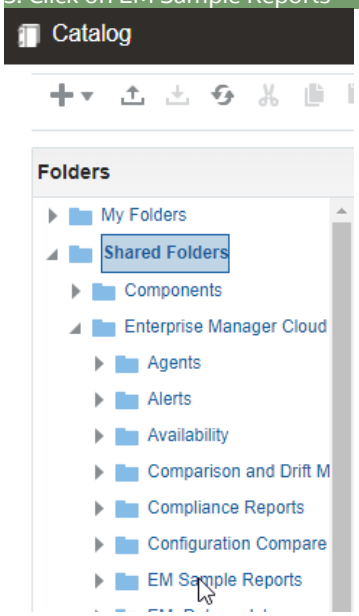
2. Navvigate to Enterprise Manager Cloud Control Folder



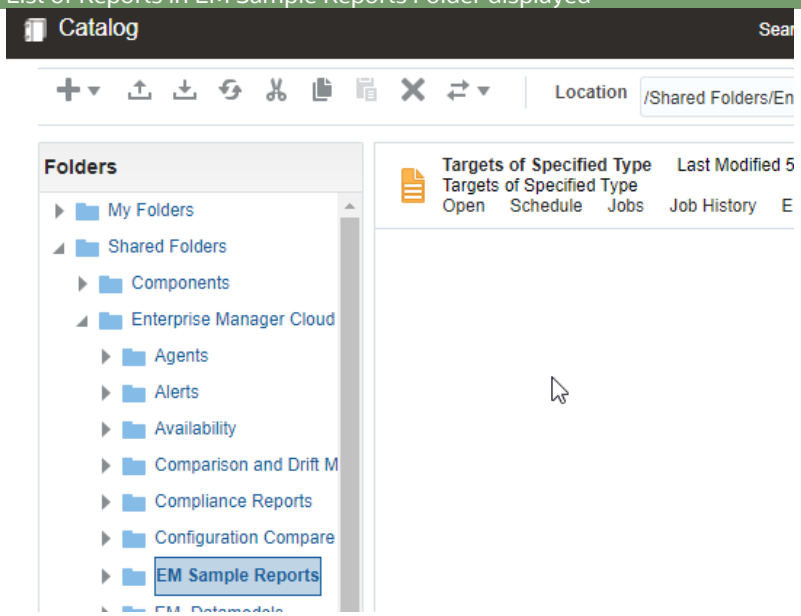
Blinking Selection Icon



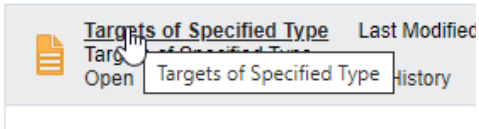
3. Click on EM Sample Reports



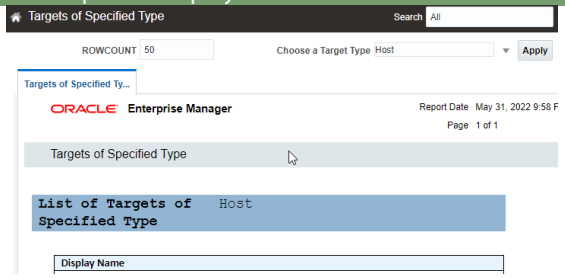
List of Reports in EM Sample Reports Folder displayed



4. Click on the "Targets of Specified Type" Report



The Report is Displayed



18.8 Steps to complete after uploading the Enterprise Manager Provided Reports

In certain circumstances, the OAS catalog's root folder, which is displayed in the user interface via the Shared Folders icon, does not have the correct permissions.

The symptom of this would be for OAS users without the Super Admin privilege (either BI Administrator, EMBIPADMINISTRATOR, or XMLP_ADMIN, depending on the security model) will be unable to see the reports that were just uploaded.

There can be circumstances that arise from time to time when the same behavior can be exhibited for customized reports that are either developed directly in OAS, or uploaded to OAS, show this same behavior.

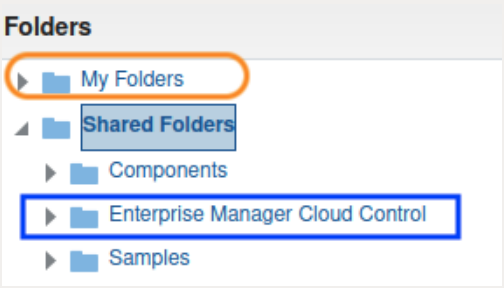
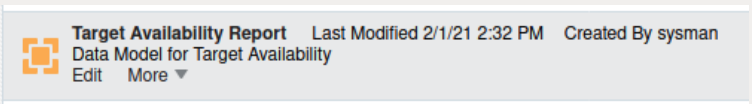
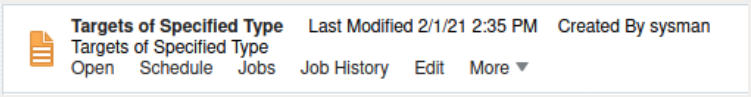
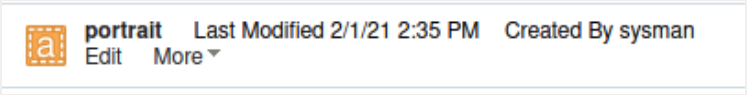
In order to repair or set appropriate permissions for an OAS Catalog Object, note the four types of Catalog Objects that are available.

18.8.1 OAS Catalog Object Types

Every OAS catalog Object has an associated set of permissions, which are derived from the set of available roles.

Note that the roles are stored as appropriate, depending on the OAS Security Model.

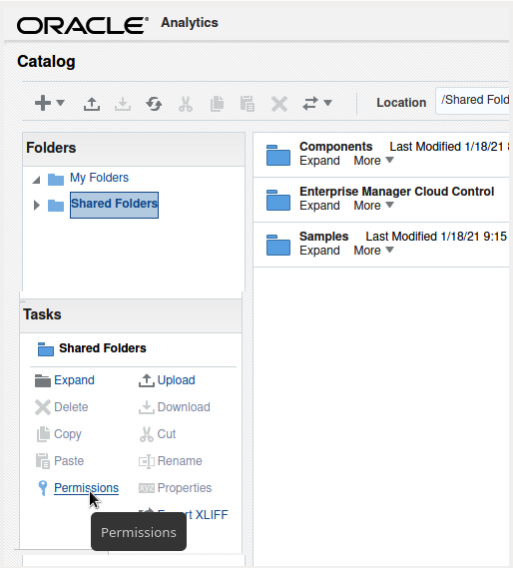
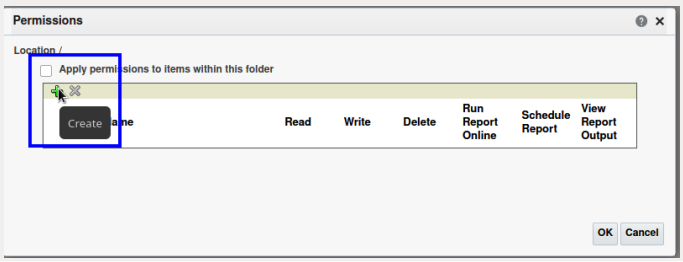
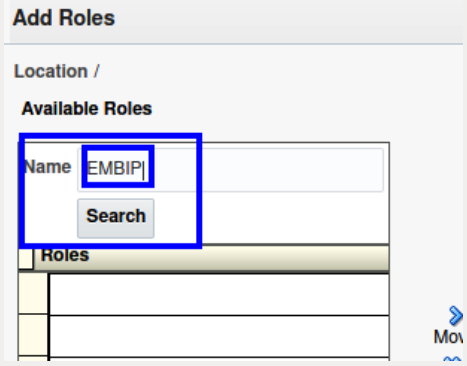
Review 'Figure 54- Mapping of EMBIP* Roles to base OAS Roles' for review.

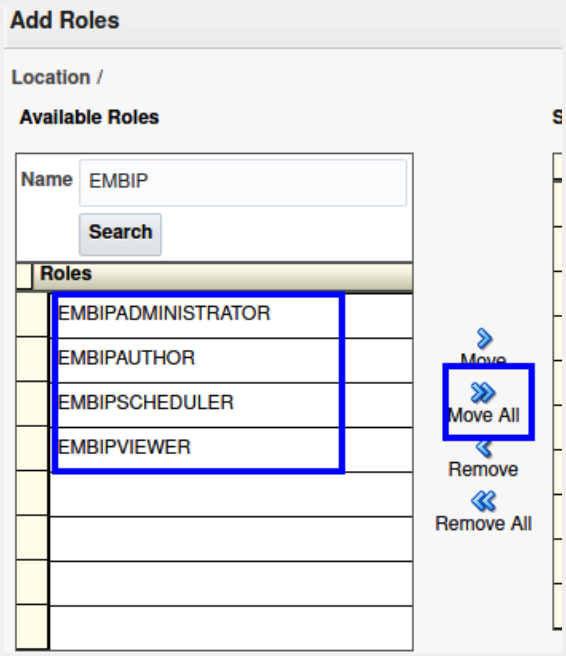
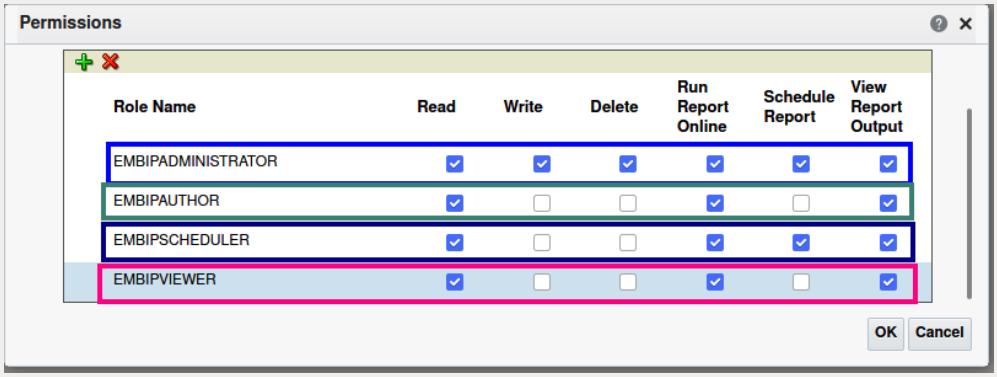
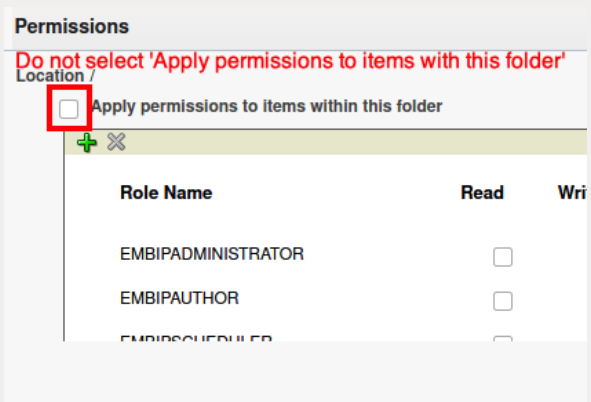
Object	Comment	Screenshot
Folder	Root of My Folders tree. A subfolder of Shared Folders.	
Datamodel	SQL Queries against EM repository data.	
Report	Layout and properties for viewing report content.	
Subtemplate	Can be included by Report's (i.e., for headers/footers).	

18.8.2 Resolving Permissions issues against one or more OAS Catalog Object(s)

As a user with OAS super admin privileges (i.e., sysman, weblogic, etc...), navigate to the OAS Catalog Object that needs to have its catalog permissions set or reset.

For this example, The Shared Folders OAS Catalog Object is demonstrated:

Step	Screenshot
1. Select Shared Folders **2. Do not highlight any other items.** 3. Press Permissions link.	
4. An empty list. 5. Press the + sign.	
6. Enter EMBIP in Name. 7. Press Search button.	

Step	Screenshot
8. List shown. 9. Press Move All	
10. Fill to match the screen shot.	
11. If this checkbox is selected, the catalog operation can take significantly more time. 12. Only select this checkbox if it is required.	

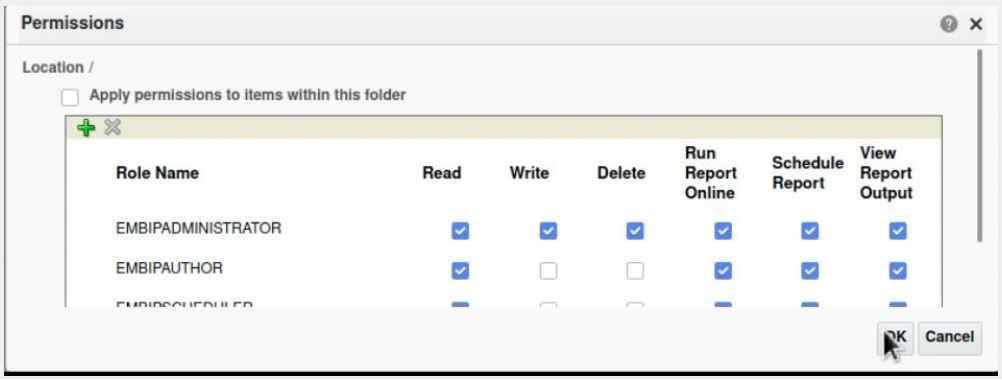
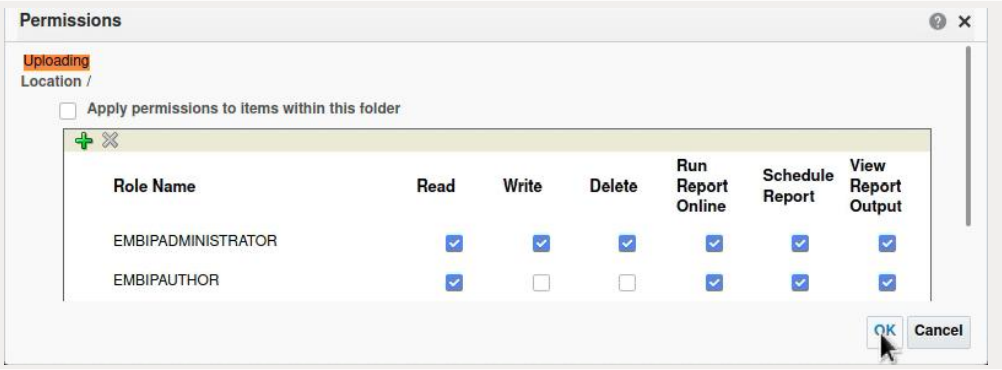
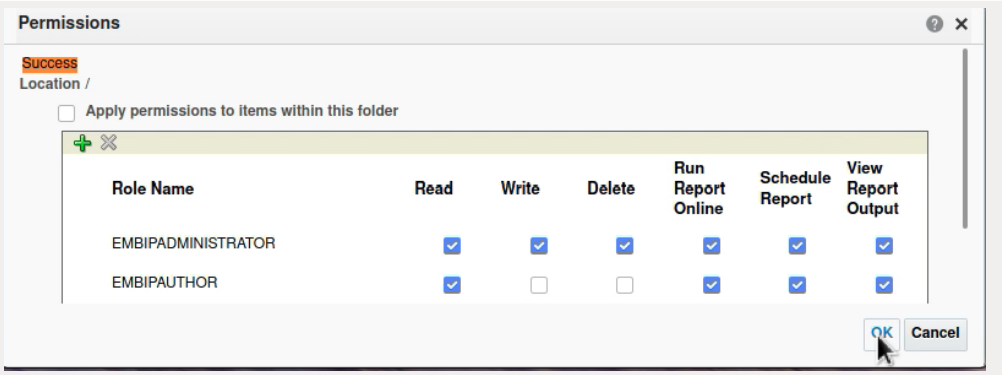
Step	Screenshot
13. Press OK	
14. Uploading	
15. Success	

Table 8. Ensure correct Catalog Permissions for OAS Shared Folder

18.9 Reminder On Required Roles for EM Administrators

Anytime that a new Enterprise Manager Administrator is configured, refer to the relevant section, depending on whether Repository Based Authentication, or LDAP Based Authentication, for the steps to provide access to this new EM user.

Refer to section '**Error! Reference source not found.** - **Error! Reference source not found.**' for further details.

```
REM Setup an EMCC Report Viewer named 'USER3'
grant EMBIPVIEWER to USER3
```

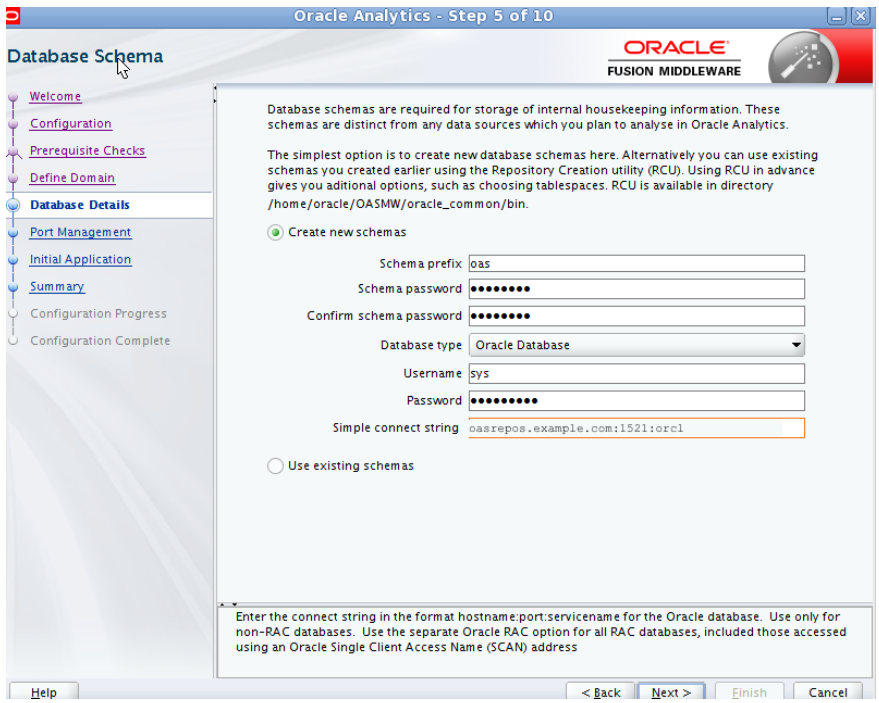
CHAPTER 19. MIGRATING BIP SCHEDULES FROM EM 13.4

If an upgrade from Enterprise Manager 13.4 to Enterprise Manager 13.5 has been completed, it is necessary to migrate any existing schedules from the embedded BI Publisher to the standalone OAS.

After all steps in this handbook are completed, and the standalone Oracle Analytics Server environment is fully functional, the scheduler jobs and the job history data can be migrated from the embedded BIP in EM 13.4.

The standalone OAS provides a script to perform this migration.

Many of the required arguments to the script can be gleaned from the flow during the initial standalone OAS configuration, from section “8.7.5 - Step 5 - Database ”, and from the section “14.2.5- Part 5 - Fill in the required details”, which are repeated below:




```
                  Name: EMREPOS
           Driver Type: Oracle 12c
        Database Class: oracle.jdbc.OracleDriver
      Connection String: jdbc:oracle:thin:@//emrepos1.example.com:1521/orclpdb.example.com
        Use System User: Do Not Check
               Username: MGMT_VIEW
               Password: ********
   Pre Process Function: sysman.gc$bip.bip_set_em_user_context(:xdo_user_name)
  Post Process Function: Leave Blank
     Client Certificate: Leave Blank
Use Proxy Authentication: Leave Blank
```

19.1 Arguments for OAS Scheduler Migration Script

Context	Argument Value (color coded)	Comments
SQL*plus invocation	sys	The sysdba username usually "sys"
SQL*plus invocation	●●●●●●●●	SYSDBA Password
SQL*plus invocation	@oasrepos.example.com:1521/orcl	The connect descriptor would be the value of the "**Simple connect string**" in the screenshot above, reformatted for use with SQL*plus. oasrepos.example.com:1521/orcl
SQL Script Execution	sysman_biplatform	EM 13.4 Embedded BIP Schema Username.
SQL Script Execution	●●●●●●●	The "**sysman**" User's password.
SQL Script Execution	emrepos1.example.com:1521/orcl.example.com	This value would the same as entered in highlighted value from "14.2.5- Part 5 - Fill in the required details": Connection String: jdbc:oracle:thin:@//**emrepos1.example.com:1521/orclpdb.example.com**
SQL Script Execution	oas_biplatform	The actual username will be the prefixed with the value from the "**Schema prefix**" field in the screenshot: "*Schema_prefix*" + "_" + "BIPLATFORM" In this case, the complete username is: OAS_BIPLATFORM

Table 9. Arguments for OAS Scheduler Migration Script

19.1.1 Example execution of OAS Scheduler Migration Script using example values

19.1.1.1 Change to the directory appropriate for your platform:

```
cd /u01/oracle/OAS/bi/modules/oracle.bi.publisher/upgradeutil
```

19.1.1.2 Using the table above as an example, and the color coding in the table, execute the script as follows:

```
$ sqlplus sys/●●●●●●●●@oasrepos.example.com:1521/orcl as sysdba
```

19.1.1.3 Run the bip_12c_scheduler_migration.sql script

Pass in the command-line parameters, using the color coding from the table.

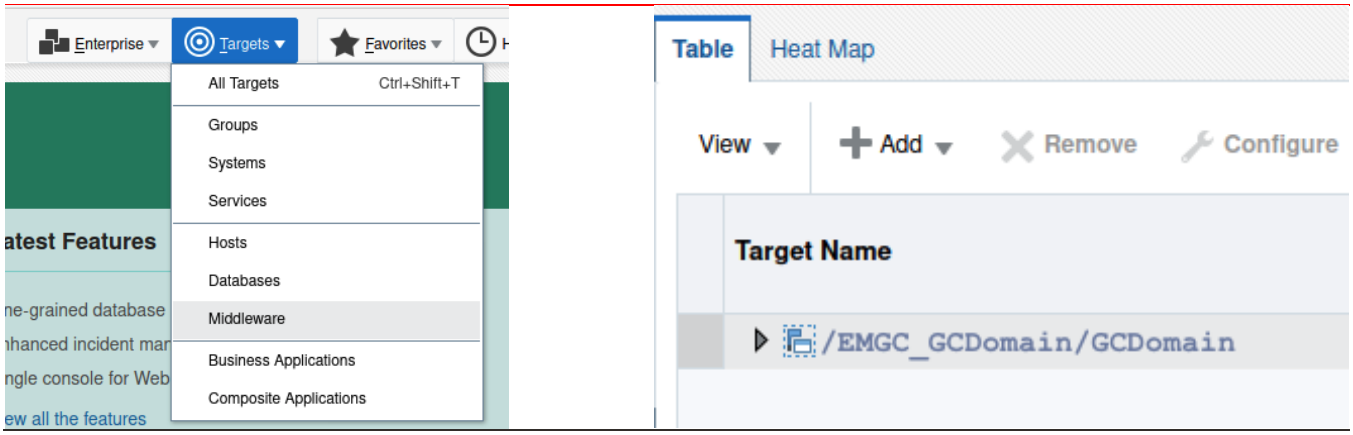
```
SQL> @bip_12c_scheduler_migration.sql sysman_biplatform ●●●●●●● emrepos1.example.com:1521/orcl.example.com oas_biplatform
old 1: &&1 new 1: sysman_biplatform
old 2: &&2 new 2:  ●●●●●●●
old 3: '&&3' new 3: emrepos1.example.com:1521/orcl.example.com
old 4: '&&4' new 4: oas_biplatform
12C_BIPLATFROM_SCHEMA_NAME Database link created.
9979 rows created.
9769 rows created.
9739 rows created.
4159 rows created.
6 rows created.
6 rows created.
6 rows created.
Commit complete.
Database link dropped.
SQL> exit;
$
```

CHAPTER 20. UPDATING THE EM 13.5 WEBLOGIC DOMAIN TARGET

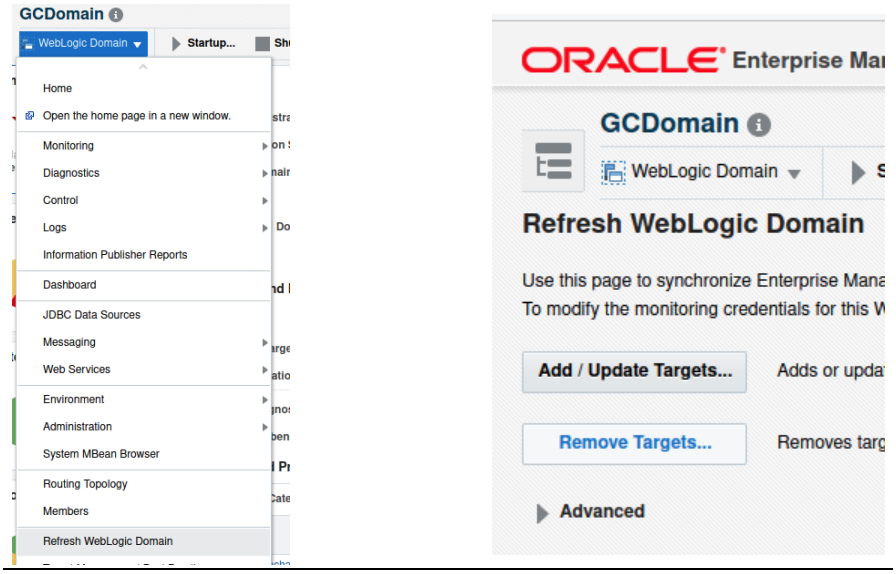
After the upgrade to Enterprise Manager 13.5 is completed, the embedded BIP related WebLogic artifacts will still be shown as monitored targets.

Since these targets no longer exist, they are stale, and it is necessary to refresh the WebLogic domain.

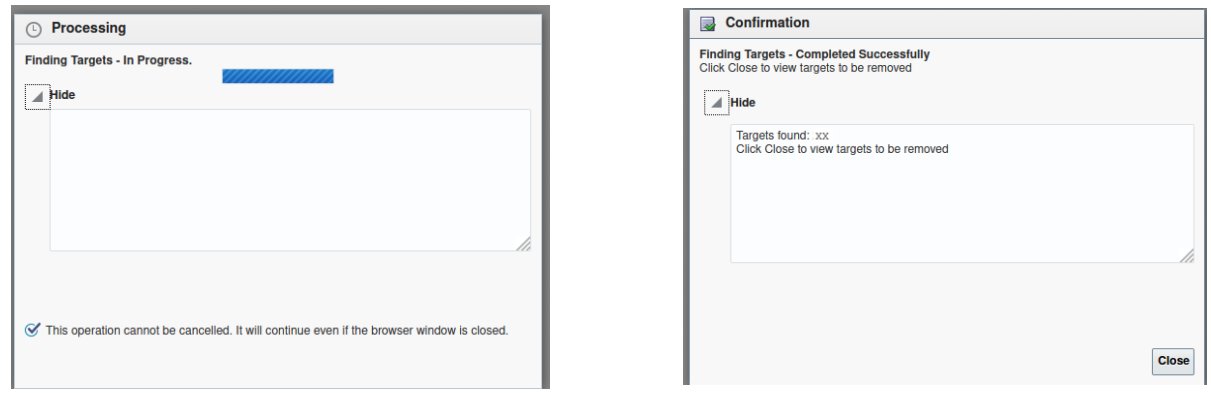
20.1 Login to Enterprise Manager 13.5 and navigate to GCDomain



20.2 Refresh WebLogic Domain and Delete Stale Targets

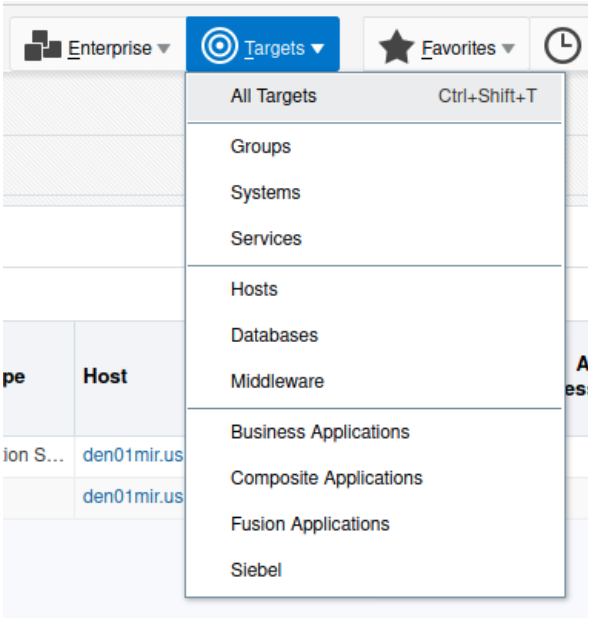


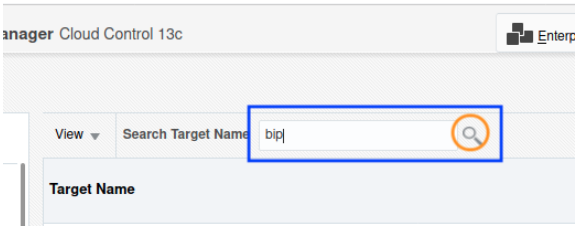
20.3 Stale embedded BIP* targets are removed

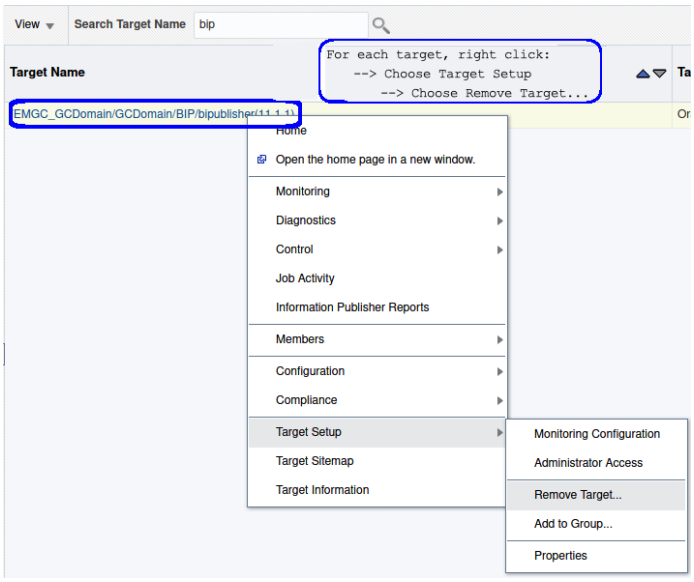


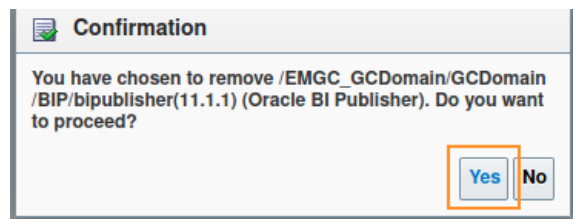
20.4 Delete any remaining stale BIP targets

1. All Targets
2. Search for bip
3. For each target:
   a. Right Click on targets
   b. Choose Target Setup
      i. Choose remove Target...
      ii. Confirm Deletion
      iii. Receive Confirmation









Appendix A. Shutting down OAS using the WebLogic console

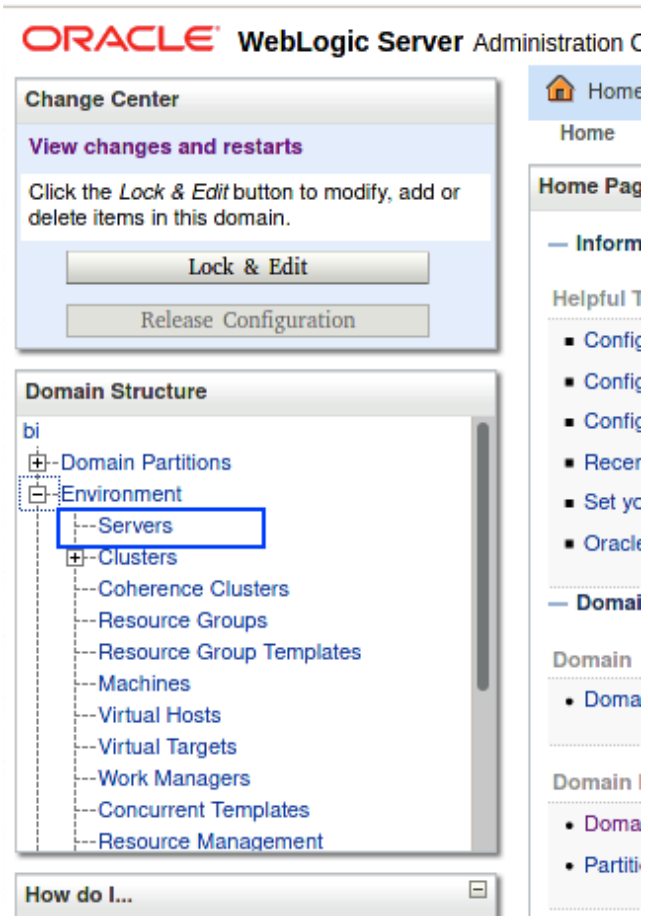
Full details on OAS lifecycles commands are detailed in the below document:

Oracle® Analytics
Administering Oracle Analytics Server
6.4.0
F24224-18

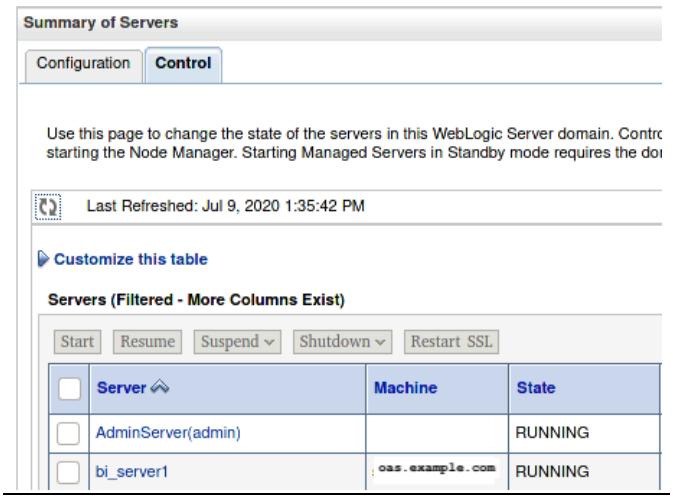
In order to shut down the full OAS stack, see 'Appendix F - Stopping the full OAS stack'

1. Login to WebLogic console

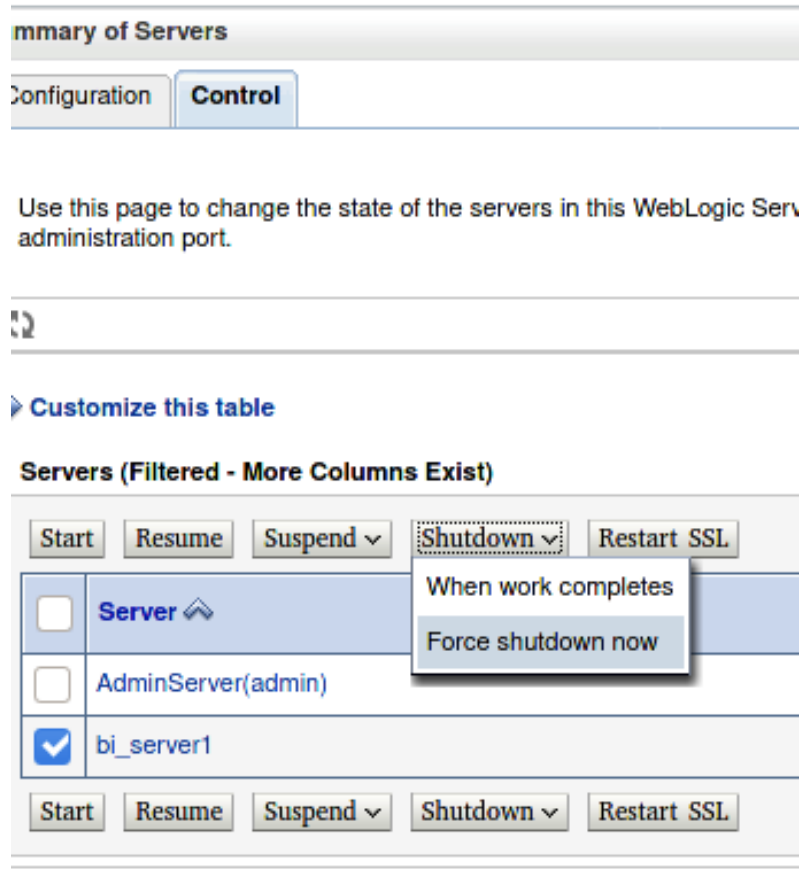
2. In the left hand 'Domain Structure' choose **Servers**



3. The summary of servers is displayed



4. Click the checkbox next to **bi_server1** and choose **Shutdown**->Force Shutdown Now



Appendix B. Shutting down the Admin Server via WebLogic console

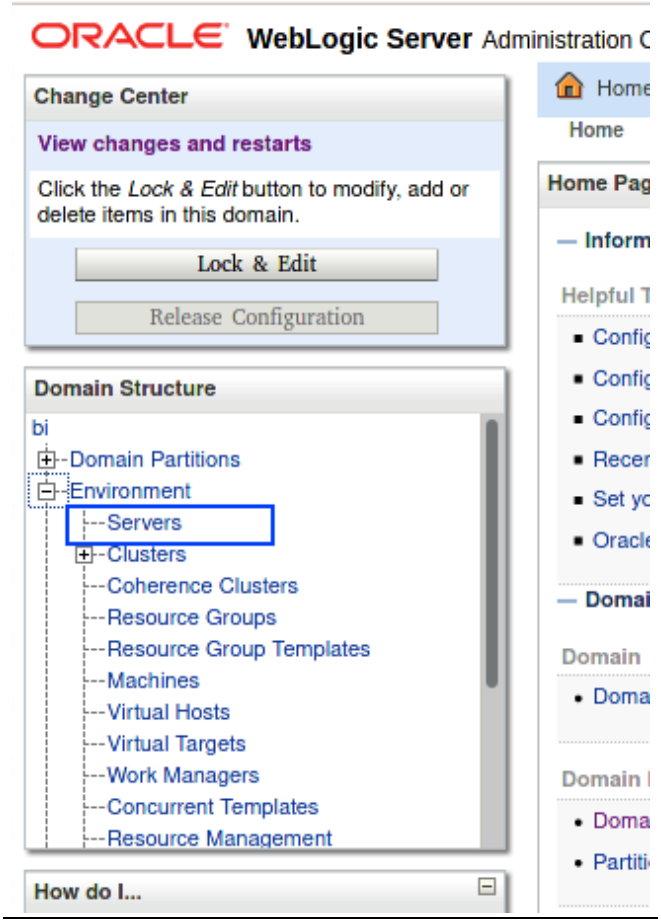
Full details on OAS lifecycles commands are detailed in the below document:

Oracle® Analytics
Administering Oracle Analytics Server
6.4.0
F24224-18

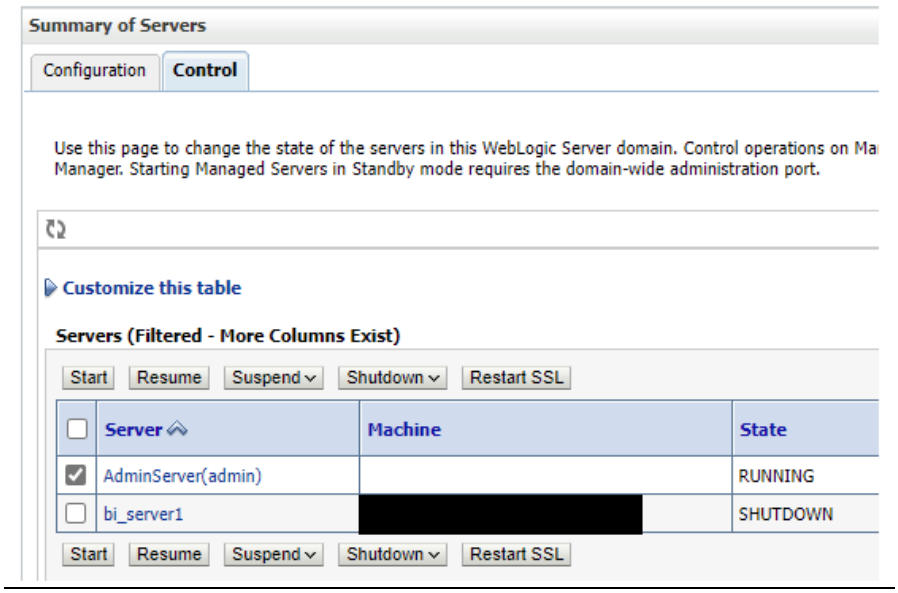
To shut down the full OAS stack, see 'Appendix F - Stopping the full OAS stack'

1. Login to WebLogic console

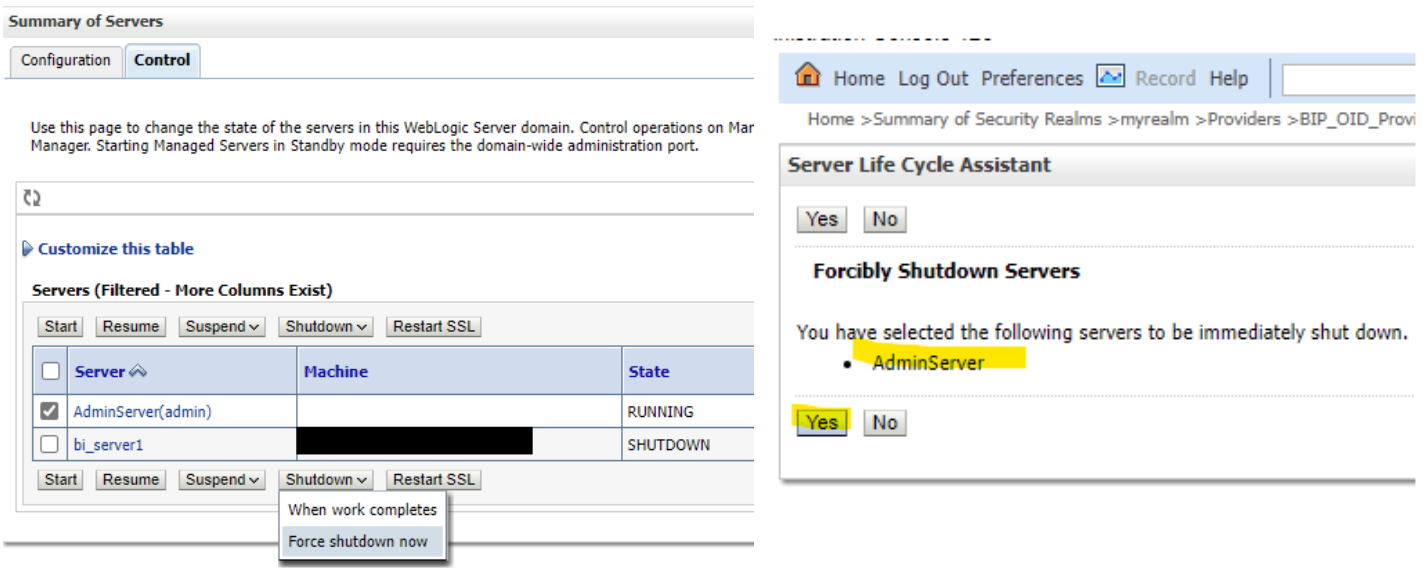
2. In the left hand 'Domain Structure' choose **Servers**



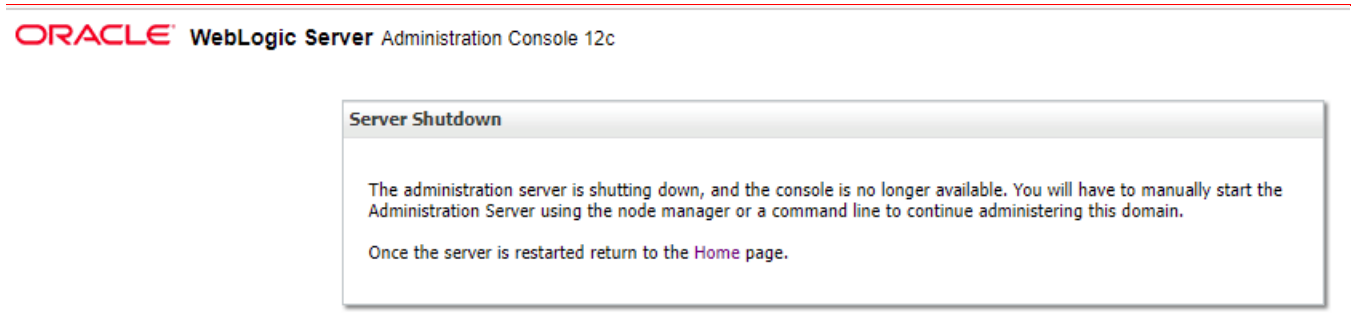
3. The summary of servers is displayed



4. Click the checkbox next to **AdminServer(admin)** and choose **Shutdown**->Force Shutdown Now



5. Since the Admin Server is being stopped, the following message is displayed:



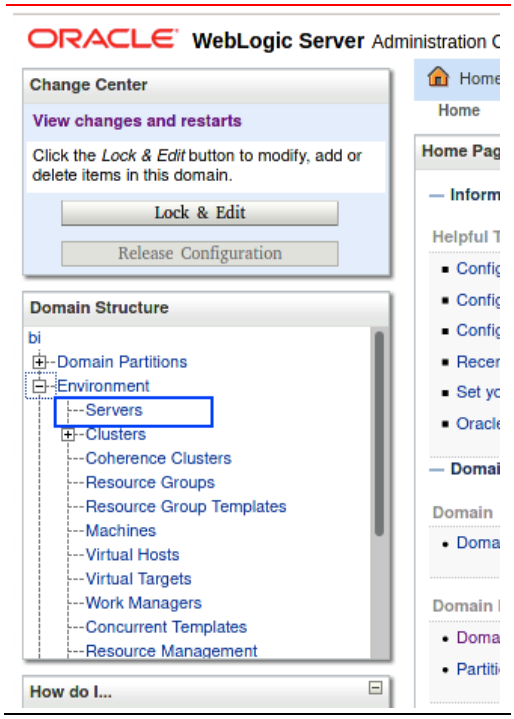
Appendix C. Starting OAS using the WebLogic Console

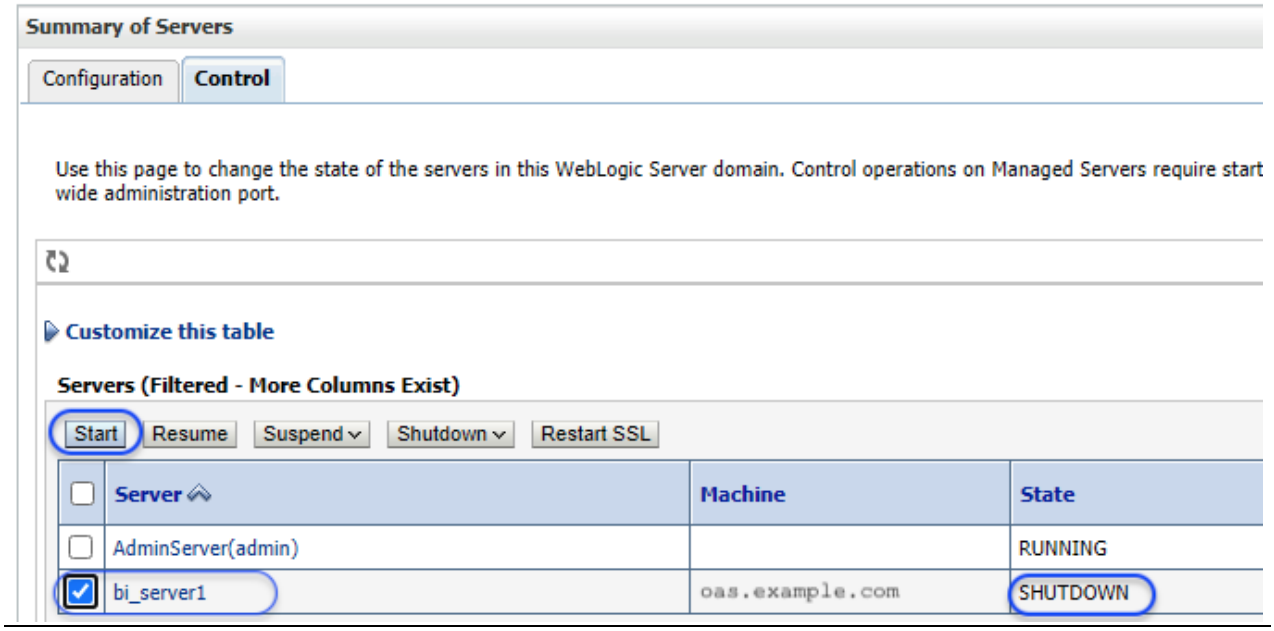
Full details on OAS lifecycles commands are detailed in the below document:

Oracle® Analytics
Administering Oracle Analytics Server
6.4.0
F24224-18

In order to startup the full OAS stack, see 'Appendix E- Starting the full OAS'

If necessary, navigate back to the WebLogic control panel for Servers, click on the "Control" tab, check the box for **bi_server1**, and choose **Start**.





Appendix D. Determine the status of OAS

Full details on OAS lifecycles commands are detailed in the below document:

Oracle® Analytics
Administering Oracle Analytics Server
6.4.0
F24224-18

```
$ cd DOMAIN_HOME/bitools/bin
$ ./status.sh
Domain status; Using domainHome: ..../user_projects/domains/bi ...
Initializing WebLogic Scripting Tool (WLST) ...
...
/Servers/AdminServer/ListenPort=9500
Accessing admin server using URL t3://oas.example.com:9500
Status of Domain: /home/oracle/OASMW/user_projects/domains/bi

NodeManager (oas.example.com:9506:SSL): RUNNING

Name            Type            Machine                   Restart Int Max Restart  Status
----            ----            -------                   ----------- -----------  ------
AdminServer     Server          oas.example.com           unknown     unknown      Unknown
bi_server1      Server          oas.example.com           unknown     unknown      Unknown
```

Appendix E. Starting the full OAS stack

Full details on OAS lifecycles commands are detailed in the below document:

Oracle® Analytics
Administering Oracle Analytics Server
6.4.0
F24224-18

```
$ cd DOMAIN_HOME/bitools/bin
$ ./start.sh
Starting domain; Using domainHome: .../user_projects/domains/bi ...
Initializing WebLogic Scripting Tool (WLST) ...
Welcome to WebLogic Server Administration Scripting Shell
Type help() ...
...
Node manager not running. Starting it...
NMProcess: NODEMGR_HOME is already set to .../user_projects/domains/bi/nodemanager
NMProcess: ...
...
NodeManager started
Reading domain...
/Servers/AdminServer/ListenPort=9500
Accessing admin server using URL t3://oas.example.com:9500
Starting AdminServer ...
nmStart(AdminServer) succeeded
Setting restart interval for all ...
Setting max restart for ...
Starting all servers ...
Starting bi_server1 (Original State:SHUTDOWN) ...
...
Started bi_server1
Set runtime log level...
Setting oracle.wsm log level to WARNING:1 for server: bi_server1
Finished starting servers

./status.sh
Domain status; Using domainHome: ..../user_projects/domains/bi ...
Initializing WebLogic Scripting Tool (WLST) ...
Welcome to WebLogic Server Administration Scripting Shell
Type help() ...
...
/Servers/AdminServer/ListenPort=9500
Accessing admin server using URL t3://oas.example.com:9500
AdminServer already running

Status of Domain: /home/oracle/OASMW/user_projects/domains/bi
NodeManager (oas.example.com:9506:SSL): RUNNING

Name            Type            Machine                   Restart Int Max Restart  Status
----            ----            -------                   ----------- -----------  ------
AdminServer     Server          oas.example.com           unknown     unknown      RUNNING
bi_server1      Server          oas.example.com           unknown     unknown      RUNNING
```

Appendix F. Stopping the full OAS stack

Full details on OAS lifecycles commands are detailed in the below document:

Oracle® Analytics
Administering Oracle Analytics Server
6.4.0
F24224-18

```
$ cd DOMAIN_HOME/bitools/bin
$ ./stop.sh
Stopping domain; Using domainHome: /home/oracle/OASMW/user_projects/domains/bi ...
Initializing WebLogic Scripting Tool (WLST) ...
Welcome to WebLogic Server Administration Scripting Shell
Type help() ...
...
Reading domain...
/Servers/AdminServer/ListenPort=9500
Accessing admin server using URL t3://oas.example.com:9500
AdminServer already running
Stopping all managed servers and system components ...
Stopping bi_server1 (Original State:RUNNING) ...
......
Stopped bi_server1
Finished stopping managed servers and system components
Stopping AdminServer (Original State:RUNNING) ...
.Stopped AdminServer
Stopping NodeManager...


./status.sh
Domain status; Using domainHome: ..../user_projects/domains/bi ...
Initializing WebLogic Scripting Tool (WLST) ...
Welcome to WebLogic Server Administration Scripting Shell
Type help() ...
...
/Servers/AdminServer/ListenPort=9500
Accessing admin server using URL t3://oas.example.com:9500
AdminServer already running

Status of Domain: /home/oracle/OASMW/user_projects/domains/bi
NodeManager (oas.example.com:9506:SSL): RUNNING

Name            Type            Machine                   Restart Int Max Restart  Status
----            ----            -------                   ----------- -----------  ------
AdminServer     Server          oas.example.com           unknown     unknown      RUNNING
bi_server1      Server          oas.example.com           unknown     unknown      RUNNING
```

Appendix G. Recovering from a failed installation/configuration of OAS

The steps below can be utilized to recover from a failed installation/configuration of OAS:

1. Stop any running WebLogic Processes:
   - Utilize 'Appendix F - Stopping the full OAS stack'
2. Clean up all related OAS artifacts from both DBMS and WebLogic:
   a. Run the RCU utility from the OAS $MW_HOME
      ```
      $MW_HOME/oracle_common/bin/rcu
      ```
   b. On the first pages of the RCU utility, choose to drop a schema.
      - Ensure to specify the correct schema prefix (i.e. OAS).
   c. Delete the OAS schema using RCU.
   d. Delete the Domain for OAS in the $MW_HOME for OAS:
      ```
      rm -rf $MW_HOME/user_projects/domains/bi
      ```
3. It is not necessary, nor desirable, to delete the OAS `$MW_HOME`.

Appendix H. Deleting embedded BI Publisher Schema from EM 13.5

After an upgrade of Enterprise Manager to 13.5, the database schema associated with the embedded BI Publisher will still be present in the Enterprise Manager repository database.

This schema is important if the steps in 'section Chapter 19 - Migrating BIP Schedules from EM 13.4' are utilized.

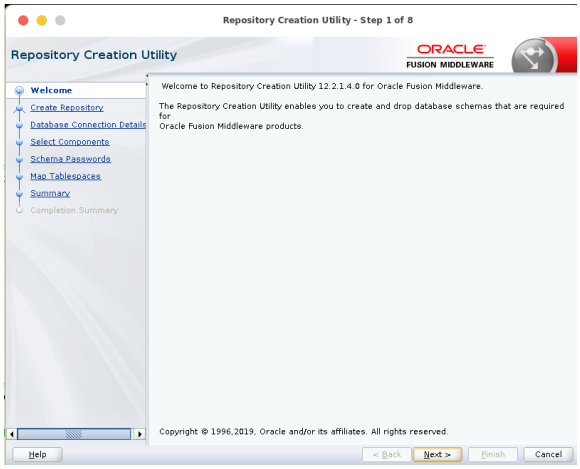
Once the dabase schema from the embedded BI Publisher is no longer needed, this schema can be deleted using the standard Repository Creation Utility (RCU) from the Enterprise Manager 13.5 MiddleWare home.

The following steps outline this procedure:

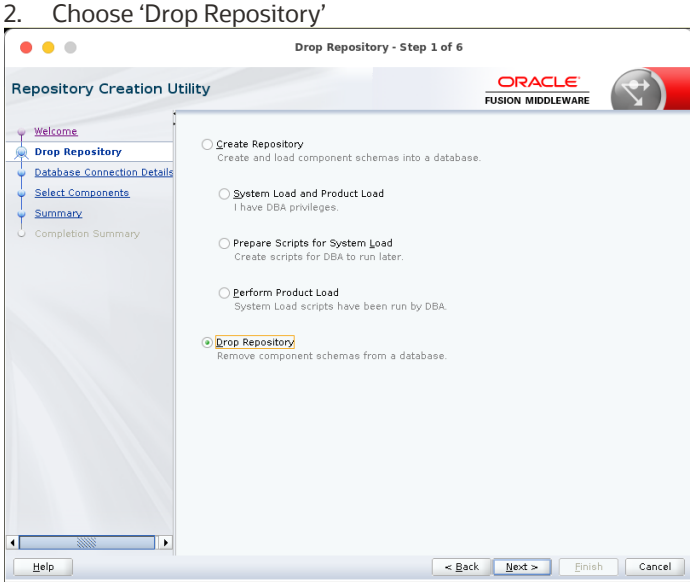
If required, ensure to follow the steps in in 'section Chapter 19 - Migrating BIP Schedules from EM 13.4' to ensure that any existing BI Publisher schedules are not lost.

1. From the Enterprise Manager 13.5 MiddleWare home, run the RCU utility:

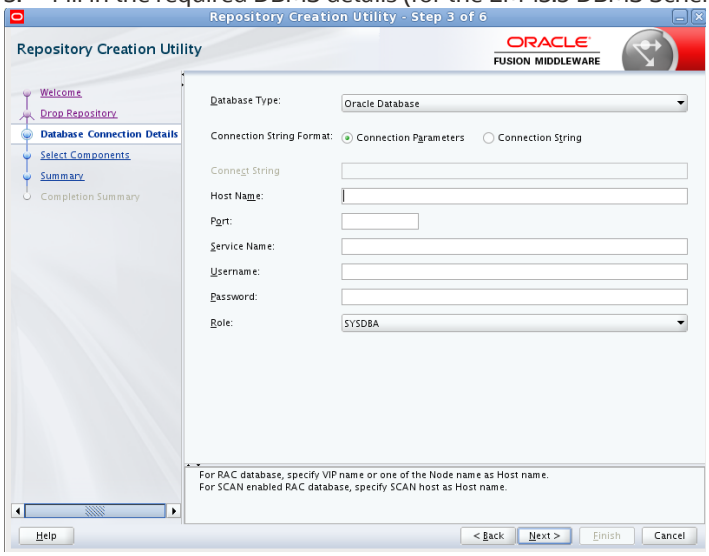
```
% bash
$ $MW_HOME/oracle_common/bin/rcu
```

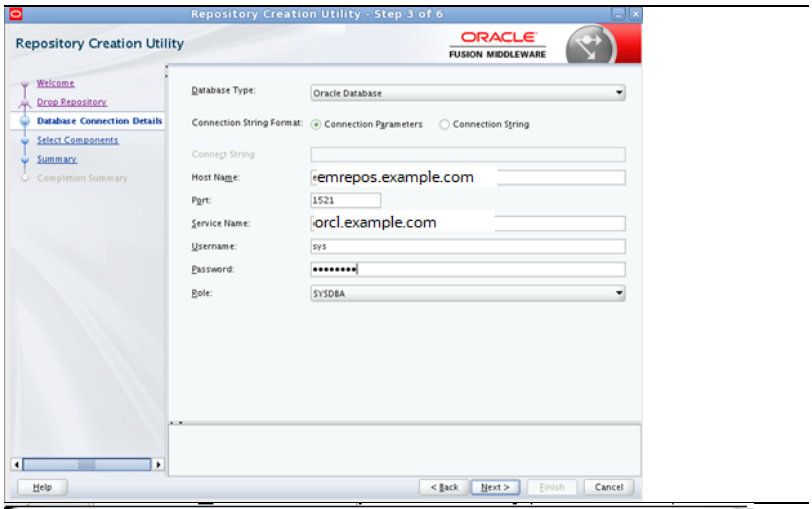


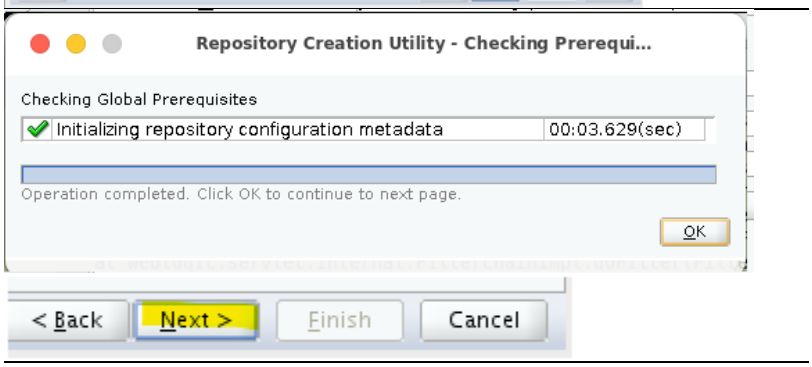
2. Choose 'Drop Repository'



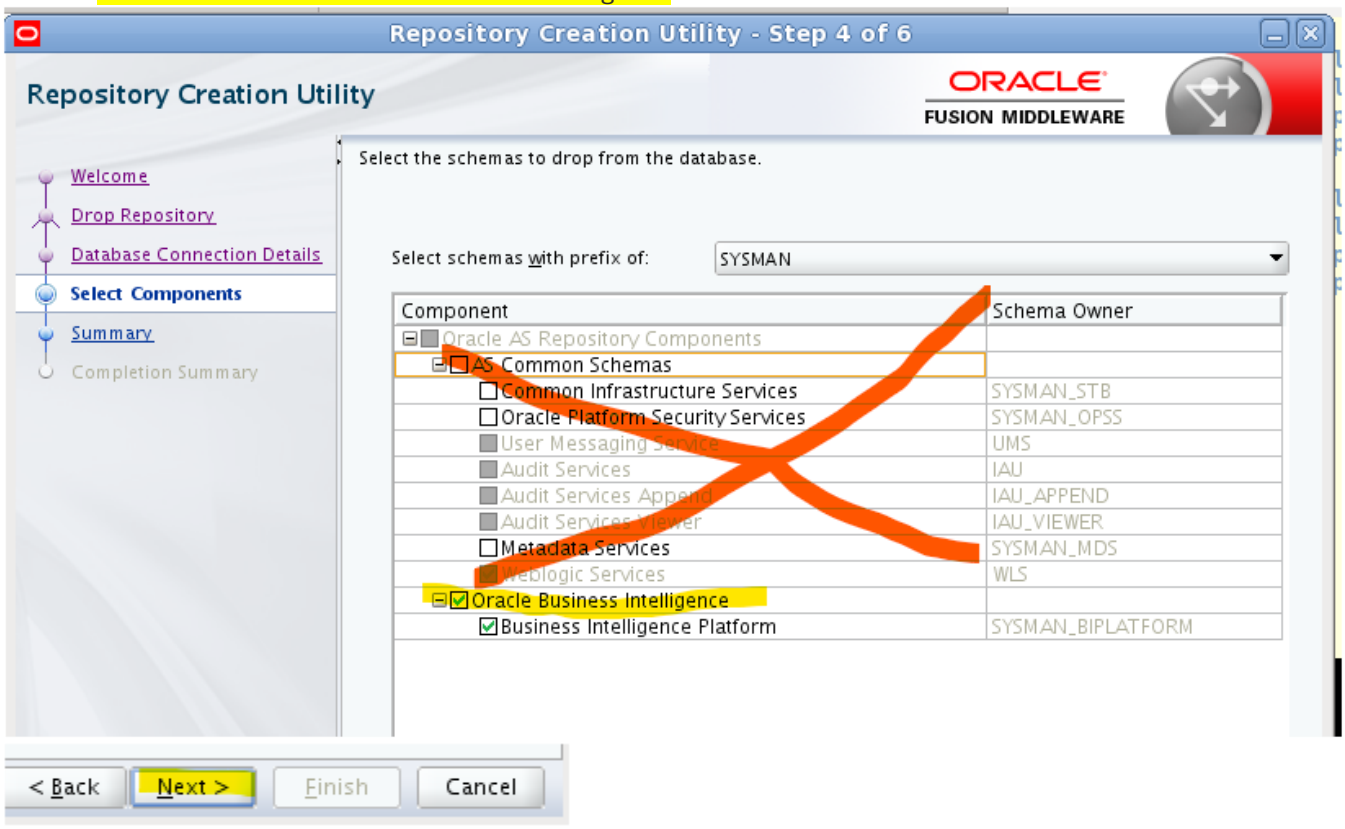
3. Fill in the required DBMS details (for the EM 13.5 DBMS Schema [PDB/CDB]



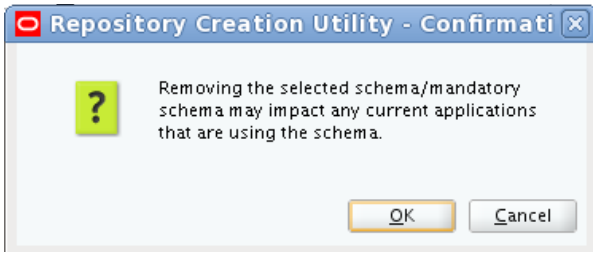


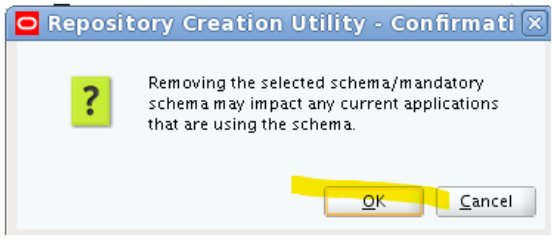


4. Ensure to uncheck the entry for 'AS Common Schemas'
5. Make sure to select 'Oracle Business Intelligence'

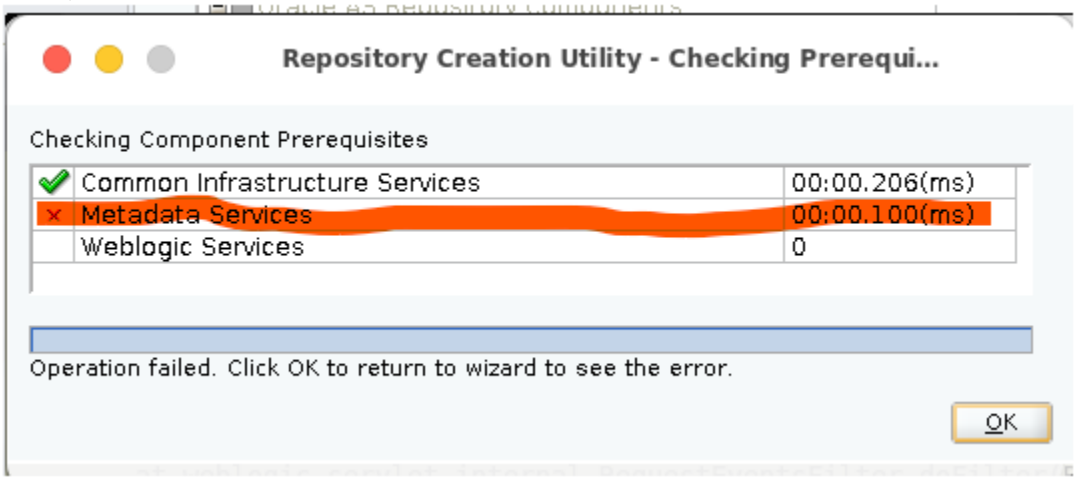


1) Take special note of the warning, and when sure, select ok:

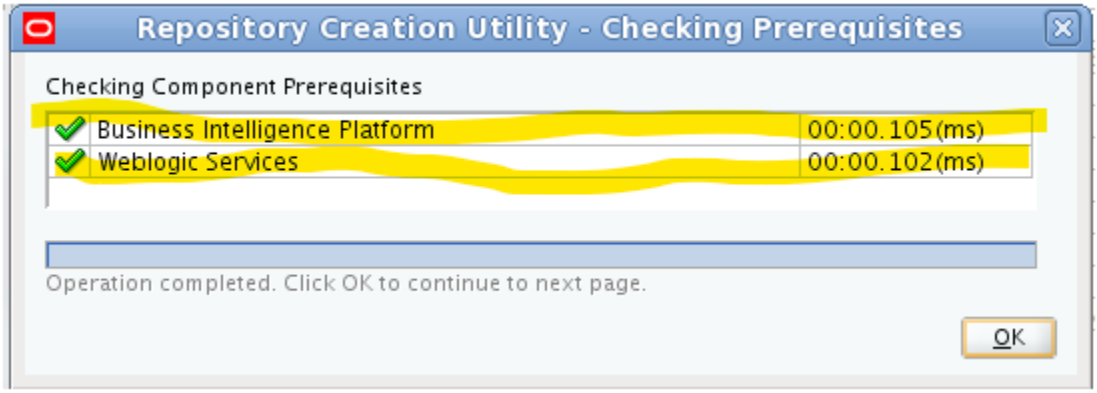




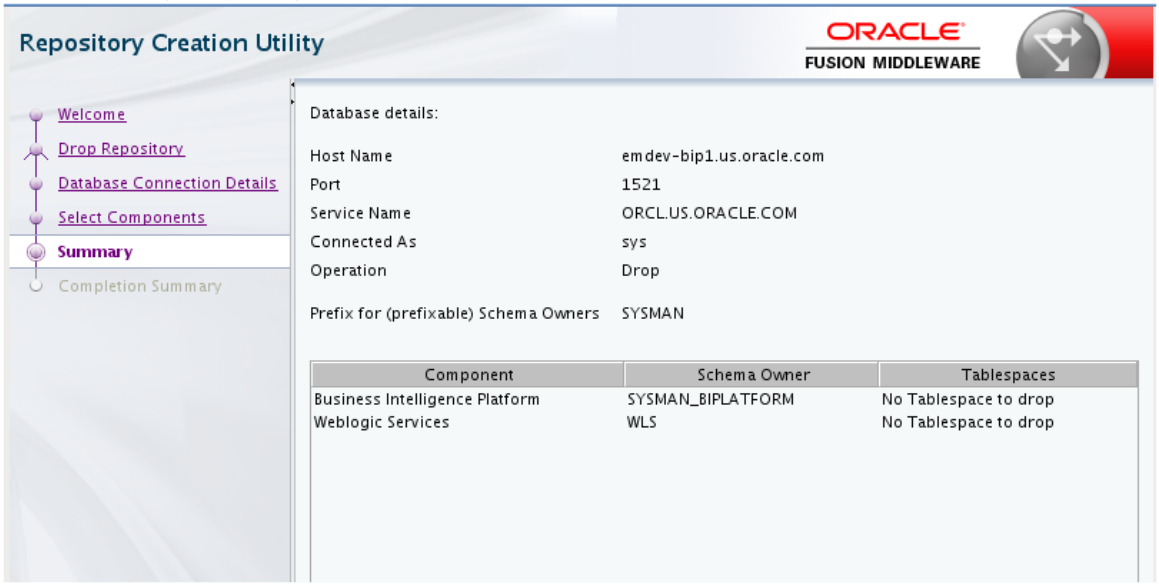
6. If you see an error, please follow the instructions, and start over:



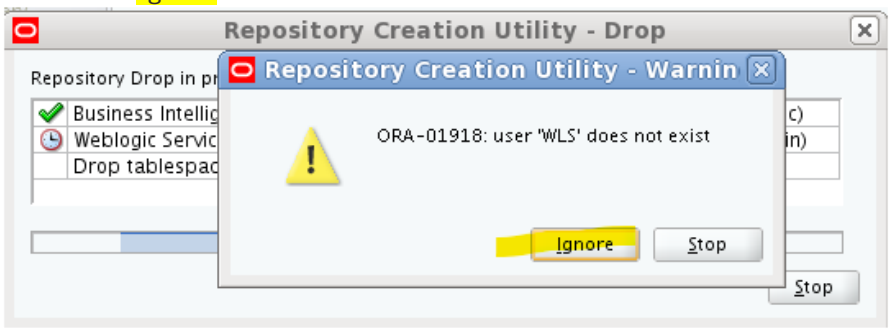
7. You should see this screen

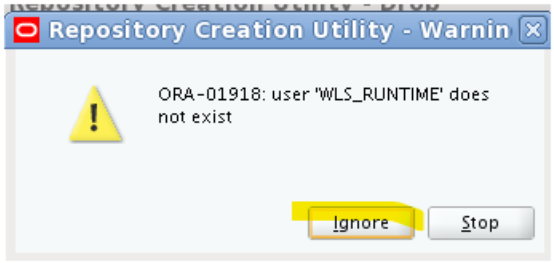


8. And when you hit 'OK' you should see this screen:

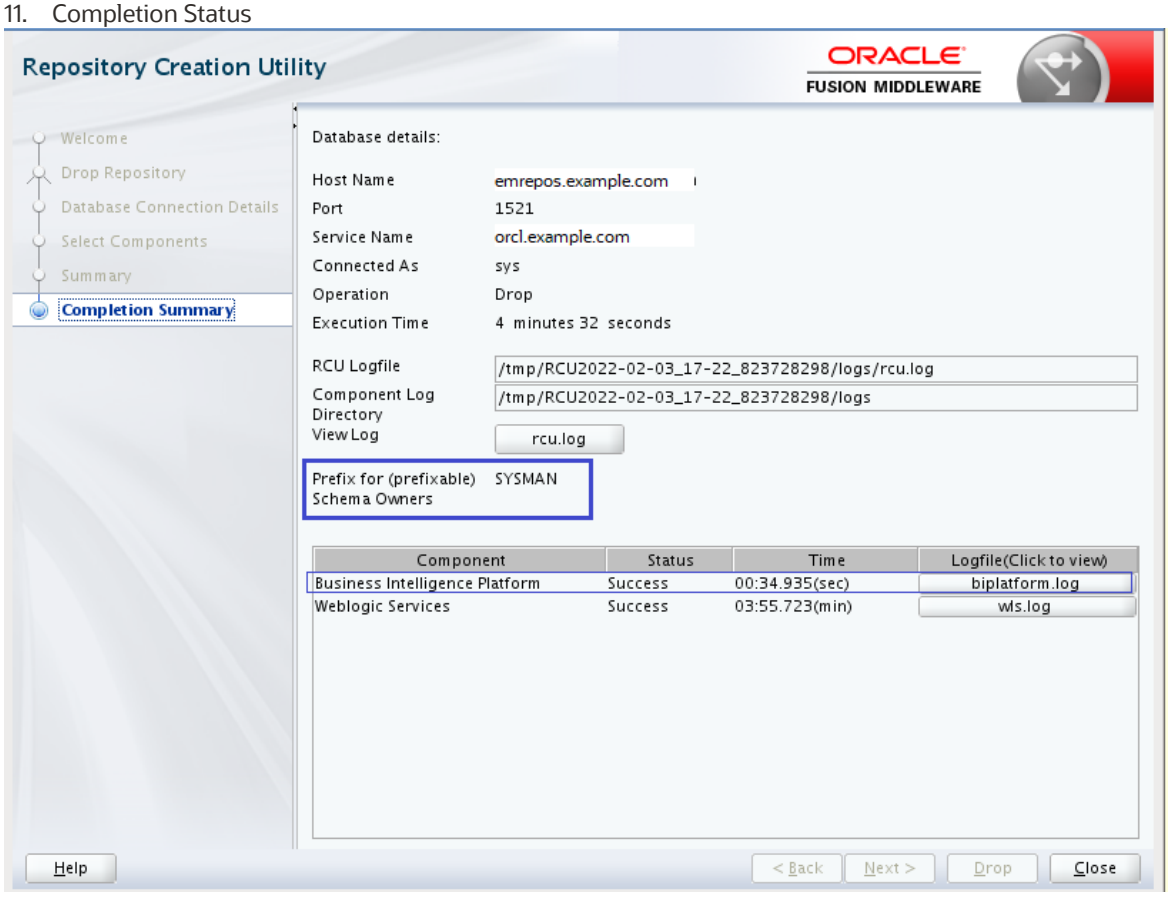


9. It is safe to ignore the warnings:
10. Choose 'Ignore' twice:





11. Completion Status



Appendix I. Stopping and starting OHS using Fusion Middleware Control

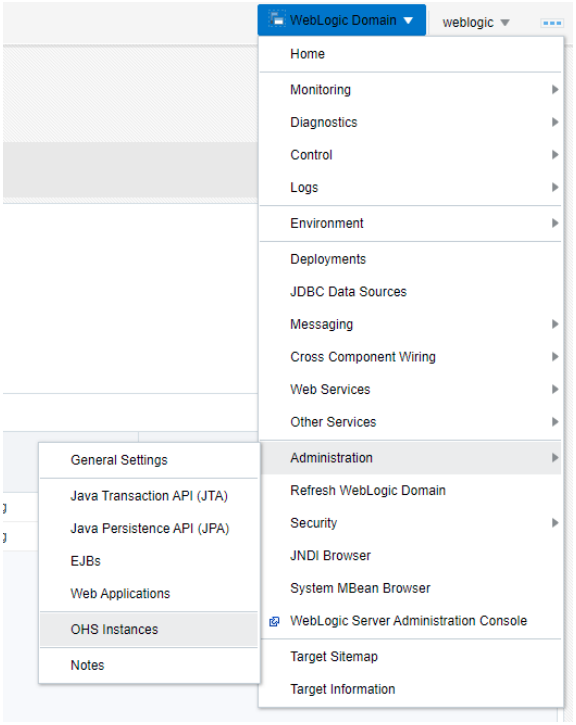
» Login to Fusion Middleware Control

» http://oas.example.com:9500/em

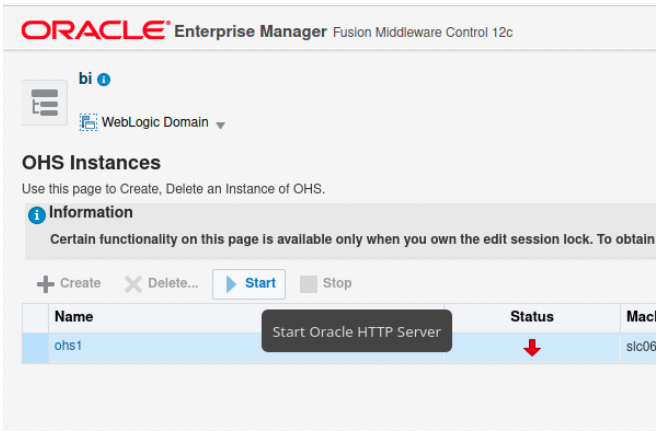
WebLogic Domain

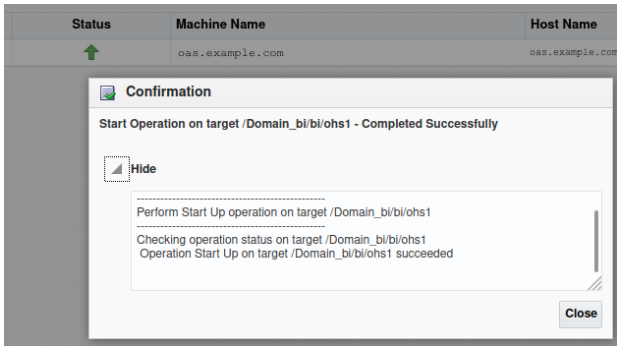
→ Administration

→ OHS Instances



Starting OHS:





Appendix J. Details on the JDBC Simple Connect Descriptor

The JDBC Simple Connect descriptor is used by a Java application, such as Oracle Analytics Server, to connect to a remote Oracle Database.

Some of the common elements in all JDBC Simple Connect Descriptors are:

- Host Name
- TCP/IP Port
- Service Name (or deprecated Oracle SID)

In addition to the above standard elements, many other elements and options can be specified as part of a JDBC Simple Connect Descriptor.

A few examples of this includes:

- Oracle Secure TCPs Wallet
- Oracle RAC Database 'Scan' addresses

There are many other options and capabilities that are available.

Since the JDBC Simple Connect Descriptor is a standardized mechanism for any Java application to connect to an Oracle Database, a small set of tools has been developed to assist with determining the correct value to utilize.

Please see the following web page for a more detailed discussion:

https://blogs.oracle.com/observability/post/Oracle-Analytics-Server-with-Enterprise-Manager

Appendix K. WebLogic Authentication Providers

To understand what the configuration goals are, it is important to provide some background.

WebLogic supports two distinct types of providers:

2. Authentication Providers – Require valid username/password combination.
3. Identity Asserters – Only requires that the given username is valid.

Not shown in the above screen shot is a critical flag associated with each item in the list:

- REQUIRED
  - If the test fails, all the remaining providers are still consulted, but an overall result of FALSE is returned.
  - If the test succeeds, the overall result is temporarily set to TRUE, and the rest of the providers are consulted.
- REQUISITE
  - If the test succeeds, the overall result is temporarily set to TRUE, and the rest of the providers are consulted.
  - If the test fails, all the remaining providers are skipped, and FALSE is returned.
- SUFFICIENT
  - If the test succeeds, the rest of the providers can be skipped, and an overall result of TRUE is returned.
  - Otherwise, processing continues with the next provider in the list (if any).
- OPTIONAL
  - If the test succeeds, the overall result is temporarily set to TRUE.
  - If the test fails, the overall result is temporarily set to FALSE.

These flags, in conjunction with the order of the providers, determines whether a given username/password (for Authenticators) or a given username (for Identity Asserters), is valid.

Furthermore, consider that when a username/password, or just username, is being processed by WebLogic, the list of providers is consulted in order.

If the overall result of the chain of providers is TRUE, then the validation succeeds and an overall result of TRUE is returned, otherwise, an overall result of FALSE is returned.

(Google Search, n.d.)

CHAPTER 21. REFERENCES

Configuring Oracle Analytics Server. (2021, March). Retrieved from Installing and Configuring Oracle Analytics Server: https://docs.oracle.com/en/middleware/bi/analytics-server/install-config-oas/configuring-product.html

Corporation, O. (n.d.). *Configuring the Oracle Analytics Server Domain with the Configuration Assistant*. Retrieved from Installing and Configuring Oracle Analytics Server: https://docs.oracle.com/en/middleware/bi/analytics-server/install-config-oas/configuring-oracle-analytics-server-domain-configuration-assistant.html#GUID-72B6F4ED-C66E-45E0-87F1-6DA73276024E

EM - Security Features : Supported Authentication Schemes. (2021, March). Retrieved from Enterprise Manager Cloud Control Security Guide: https://docs.oracle.com/en/enterprise-manager/cloud-control/enterprise-manager-cloud-control/13.4/emsec/security-features.html#GUID-8FF7D1AE-2BF8-4359-818C-E323AEF818B5

Google Search. (n.d.). Retrieved from https://google.com

Java Platform, Standard Edition - Release 8. (2020, July). Retrieved from Installation Guide - Release 8: https://docs.oracle.com/javase/8/docs/technotes/guides/install/toc.html

Migrating Scheduler Jobs and Job History. (2021, March). Retrieved from Migrating and Upgrading to Oracle Analytics Server - F27231-04: https://docs.oracle.com/en/middleware/bi/analytics-server/migrate-upgrade-oas/migration-steps-oracle-bi-ee.html#GUID-CCC0A118-0AE4-47AE-89E0-473B5DAB6572

OAS - About Alternative Security Options. (2021, March). Retrieved from Administering Oracle Analytics Publisher in Oracle Analytics Server: https://docs.oracle.com/en/middleware/bi/analytics-server/administer-publisher-oas/alternative-security-options.html#GUID-2F2D945F-C5AB-447E-AA1B-B34ACFAAF8CC

OAS - Configure Oracle Fusion Middleware Security Model. (2021, March). Retrieved from Administering Oracle Analytics Publisher in Oracle Analytics Server: https://docs.oracle.com/en/middleware/bi/analytics-server/administer-publisher-oas/configure-oracle-fusion-middleware-security-model.html#GUID-8F5033A3-E912-4407-BF15-E23E3A13F154

OAS - Installing the Oracle Analytics Server Software. (n.d.). Retrieved from Installing and Configuring Oracle Analytics Server: https://docs.oracle.com/en/middleware/bi/analytics-server/install-config-oas/installing-product-software.html#GUID-D5AFD830-8A7D-42CC-8C22-CE68C452CF4A

OAS - Integrate with Oracle Database Security. (2021, March). Retrieved from Administering Oracle Analytics Publisher in Oracle Analytics Server: https://docs.oracle.com/en/middleware/bi/analytics-server/administer-publisher-oas/integrate-oracle-database-security.html#GUID-24D00B59-951C-44FD-A046-7386EF2199FF

OAS - Set Up Data Sources. (2021, March). Retrieved from Administering Oracle Analytics Publisher in Oracle Analytics Server: https://docs.oracle.com/en/middleware/bi/analytics-server/administer-publisher-oas/set-data-sources.html#GUID-13359663-9030-4E6F-B5CC-2D63E43E456F

OAS: Quick Reference For In-Place Upgrade From Oracle Business Intelligence Enterprise 12c To OAS On Linux (Doc ID 2645014.1). (2020, March). Retrieved from https://support.oracle.com/epmos/faces/DocContentDisplay?id=2645014.1

Oracle Maximum Availability Architecture, MAA. (2021). *Oracle Maximum Availability Architecture (MAA)*. Retrieved from Oracle Maximum Availability Architecture (MAA): https://www.oracle.com/database/maximum-availability-architecture/

Oracle® Analytics Enterprise Deployment Guide for Oracle Analytics Server. (2020, September). *Oracle® Analytics Enterprise Deployment Guide for Oracle Analytics Server*. Retrieved from Oracle® Analytics Enterprise Deployment

Guide for Oracle Analytics Server: https://docs.oracle.com/en/middleware/bi/analytics-server/enterprise-deploy-oas/index.html

Oracle® Fusion Middleware. (2020, August). Retrieved from Installing and Configuring the Oracle Fusion Middleware Infrastructure 12c (12.2.1.4.0) - E95088-05: https://docs.oracle.com/en/middleware/fusion-middleware/12.2.1.4/infin/index.html

Oracle®Database JDBC Developer's Guide. (2021). *Oracle®Database JDBC Developer's Guide*. Retrieved from https://docs.oracle.com/en/database/oracle/oracle-database/19/jjdbc/index.html

Required and Recommended Patches and Patch Sets For Oracle Business Intelligence 12c and Oracle Analytics Server (Doc ID 2070465.1). (n.d.). Retrieved from https://support.oracle.com/epmos/faces/DocContentDisplay?id=2070465.1

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January 2323
Author: Abramson, Jerry (Oracle)