Oracle® Retail Service Backbone

Installation Guide

Release 14.1.3.2

F36546-01

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ORACLE®

Oracle® Retail Service Backbone Installation Guide, Release 14.1.3.2

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Contents

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Oracle® Retail Service Backbone Installation Guide, Release 14.1.3.2.

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

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

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

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Preface

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

Audience

The Installation Guide is written for the following audiences:

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

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

Review Patch Documentation

When you install the application for the first time, you install either a base release (for example, 14.1) or a later patch release (for example, 14.1.3). If you are installing the base release and additional patch releases, read the documentation for all releases that have occurred since the base release before you begin installation. Documentation for patch releases can contain critical information related to the base release, as well as information about code changes since the base release.

Improved Process for Oracle Retail Documentation Corrections

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

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

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

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

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

Oracle Retail Documentation on the Oracle Technology Network

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

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

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

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.

Convention	Meaning
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1
Introduction

This document is the installation guide for the Retail Service Backbone (RSB) product. Generally, an RSB installation contains the following components:

- An installation of RSB's Decorator Services on Java EE 5 compliant application server.
- An installation of the Retail Integration Console (RIC).
- (Optional) Installation of the Java Service Interface Tester tool (JSIT)

It is important to also follow all installation steps of the Oracle Retail Applications that are being connected to the RSB. Failure to follow these may result in a faulty RSB installation. See the installation guides for the relevant Oracle Retail applications for more information.

Note: The instructions provided in this guide apply to a full installation of the RSB 14.1.3.2.

2

RSB Installation Master Checklist

RSB Installation Master Checklist

This list covers all of the sequential steps required to perform a full installation of the RSB using a command line installation.

Task	Notes
Install JDK 1.8	Prerequisite
Prepare the Oracle Database schemas that the RIB will use: ■ Install Repository Creation Utility (RCU) 12.2.1 ■ Create DB schema for OSB using RCU	Prerequisite
Prepare the Oracle WebLogic Servers for installation of the RSB Components: ■ Install Oracle Service Bus (OSB) on WebLogic ■ Configure OSB domain and ADF runtime (Oracle JRF-12.2.1.4) ■ Configure OSB OWSM Extension-12.2.1.4 ■ Create Cluster	Prerequisite
Install Retail Integration Bus (RIB) (Optional)	Prerequisite. A valid RIB home is required for the deployment of RSB, if RIB is enabled.
Verify that the applications to which RSB will be integrating are configured appropriately	
Gather information for the installation (URLs, credentials, path information etc)	During the prerequisites steps, there is information that should be noted that will be used to configure the RSB during the installation process.
Install using the RSB command line tools.	

3

Technical Specifications

RSB has several dependencies on Oracle Retail Application installations, as well as on the Oracle WebLogic servers. This section covers these requirements.

Requesting Infrastructure Software

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

Server Requirements

Supported On	Versions Supported
Database Server OS	OS certified with Oracle Database 12c (12.x) Enterprise Edition or 19c (19.3.0.0.0) Enterprise Edition. Options are: ■ Oracle Linux 6 for x86-64 (Actual hardware or Oracle virtual machine). ■ Red Hat Enterprise Linux 6 for x86-64 (actual hardware or Oracle virtual machine) ■ IBM AIX 7.1 (actual hardware or LPARs) ■ Solaris 11 Sparc (actual hardware or logical domains) ■ HP-UX Itanium 11.31 Integrity (Actual hardware, HPVM, or vPars)

Database Server 12c	Oracle Database Enterprise Edition 12c (12.1.0.2) with the following specifications: **Components:** ■ Enterprise Edition ■ Examples CD (formerly the companion CD) **Oneoff Patches:** ■ 19623450: MISSING JAVA CLASSES AFTER UPGRADE TO JDK 7. ■ 20406840: PROC 12.1.0.2 THROWS ORA-600 [17998] WHEN PRECOMPILING BY 'OTHER' USER ■ 20846438: ORA-600 [KKPAPXFORMFKK2KEY_1] WITH LIST PARTITION ■ 20925154: ORA-39126: WORKER UNEXPECTED FATAL ERROR IN KUPW$WORKER GATHER_ PARSE_ITEMS JAVA ■ 19672263: GTT SESSION LEVEL STATISTICS RETURNS ORA-20006 **RAC Only:** ■ 21260431: APPSST 12C : GETTING ORA-4031 AFTER 12C UPGRADE ■ 21373473: INSTANCE TERMINATED AS LMD0 AND LMD2 HUNG FOR MORE THAN 70 SECS **Other Components:** ■ Perl interpreter 5.0 or later ■ X-Windows interface ■ JDK 1.7
Database Server 19c	Oracle Database Enterprise Edition 19c (19.3.0.0.0) with the following specifications: **Components:** ■ DB HOME ■ Examples CD **Other Components:** ■ Perl interpreter 5.0 or later ■ X-Windows interface ■ JDK 1.8
Application Server OS	OS supported with Oracle Fusion Middleware 12.2.1.4.0. Options are: ■ Oracle Linux 6 for x86-64 (Actual hardware or Oracle virtual machine). ■ Red Hat Enterprise Linux 6 for x86-64 (actual hardware or Oracle virtual machine) ■ IBM AIX 7.1 (actual hardware or LPARs) ■ Solaris 11 Sparc (actual hardware or logical domains) ■ HP-UX Itanium 11.31 Integrity (Actual hardware, HPVM, or vPars)

Application Server	Oracle Fusion Middleware 12.2.1.4 **Components:** ■ Oracle WebLogic Server 12.2.1.4 ■ Java: JDK 1.8.0+ latest security updates 64 bit
Minimum required JAVA version for all operating systems	JDK 1.8.0+ latest security updates 64 bit

Important: If there is an existing WebLogic installation on the server, you must upgrade to WebLogic 12.2.1.4. All middleware components associated with WebLogic server should be upgraded to 12.2.1.4.

Back up the weblogic.policy file ($WLS_HOME/wlserver/server/lib) before upgrading your WebLogic server, because this file could be overwritten. Restore the weblogic.policy from backup file after the WebLogic upgrade is finished and the post patching installation steps are completed.

Additional Requirement for Retail Integration Console (RIC)

The RIC model and view components require ADF runtime to run properly. Verify that ADF runtime 12.2.1.4 or higher is available in the WebLogic Application Server (12.2.1.4) and applied to the domain where RIC will be installed.

Other Resources

For information about WebLogic Application Server 11g, see the Oracle WebLogic Server Documentation Library.

- WebLogic Application Server 11g - Index
  http://download.oracle.com/docs/cd/E15523_01/index.htm
- WebLogic Application Server 11g - Documents
  http://download.oracle.com/docs/cd/E15523_01/wls.htm.

Note: See also the Oracle Database Administrator's Guide 12c (12.1) and the Oracle WebLogic Application Server 12.2.1.4 documentation.

Additional Requirement for Installing JSIT

JSIT requires WebLogic Application Server 12c. Before installing JSIT, verify that the WebLogic Application Server 12c is available in your environment. For more information on installing JSIT, see Install JSIT.

Supported Oracle Retail Products

Retail Product	Version Supported
Oracle Retail Warehouse Management System (RWMS) 14.1.3.2	RIB 14.1.3.2
Oracle Retail Merchandising System (RMS) 14.1.3.2	RIB 14.1.3.2

Oracle Retail Price Management (RPM) 14.1.3.2	RIB 14.1.3.2
Oracle Retail Store Inventory Management (SIM) 14.1.3.2	RIB 14.1.3.2
Oracle Retail Advanced Inventory Planning (AIP) 14.1.3.2	RIB 14.1.3.2
Integration Gateway Services (IGS) 14.1.3.2	RSB 14.1.3
Oracle Retail Financial Integration (ORFI) 14.1.3.2	RSB 14.1.3.2
Oracle Retail Returns Management (RM) 14.1.3.2	RSB 14.1.3.2
Oracle Retail Invoice Matching (ReIM) 14.1.3.2	RSB 14.1.3.2
POS Suite 14.1.3.2	RSB 14.1.3.2
Rib4OMS 14.1.3.2	RSB 14.1.3.2

The RSB and Oracle WebLogic Server Cluster

Oracle Service Bus (OSB) supports three types of topologies: Admin-only topology, Admin + Managed Server topology and Cluster topology. The first two topologies are non-clustered topologies which are not high-available; therefore it is recommended that you use Cluster topology.

Clustering allows OSB to run on a group of servers that can be managed as a single unit. An OSB deployment can use clustering and load balancing to improve scalability by distributing the workload across nodes. A WebLogic server clustered domain consists of only one Admin Server, and one or more managed servers. The managed servers in an OSB domain can be grouped in a cluster. When OSB resources are configured, resources are targeted to the named cluster. The advantage of specifying a cluster as the target for resource deployment is that it makes it possible to dynamically increase capacity by adding Managed Servers to the cluster.

Singleton Resources

While most resources used by OSB are deployed homogeneously across the cluster, there are a few resources that must be pinned to a single Managed Server in order to operate correctly. The following table lists these components:

- ALSB Cluster Singleton Marker Application
- ALSB Domain Singleton Marker Application
- Message Reporting Purger
- configwiz-jms service

Load balancing in an OSB cluster

Load balancing distributes the workload proportionately across all the servers in a cluster so that each server can run at full capacity. Web services (SOAP or XML over HTTP) can use HTTP load balancing. External load balancing can be accomplished through the WebLogic HttpClusterServlet, a WebServer plug-in or a hardware router. In the steps described in this document, it uses a HTTP proxy server which is a managed server in the same domain and is not a part of the cluster.

4

Preinstallation Tasks

Before you begin installation, check to be sure that you have the most recent version of this installation guide. Oracle Retail installation guides are available on the Oracle Technology Network.

Prepare WebLogic Application Server

Oracle Service Bus (OSB) supports 3 types of topologies: Admin-only, Admin + Managed Server and Cluster. The first two topologies are non-clustered topologies which are not high-available, therefore we recommend using Cluster topology and this document describes how to configure a sample cluster topology for RSB applications.

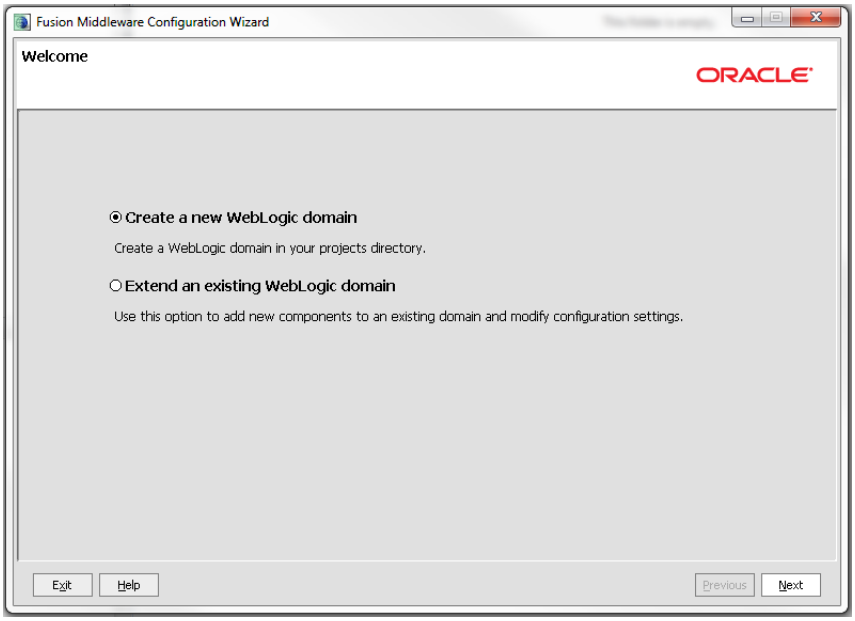
Steps for Configuring OSB Domain

This section describes step-by-step process of creating and configuring an OSB domain using the configuration wizard. In this configuration, there are following servers:

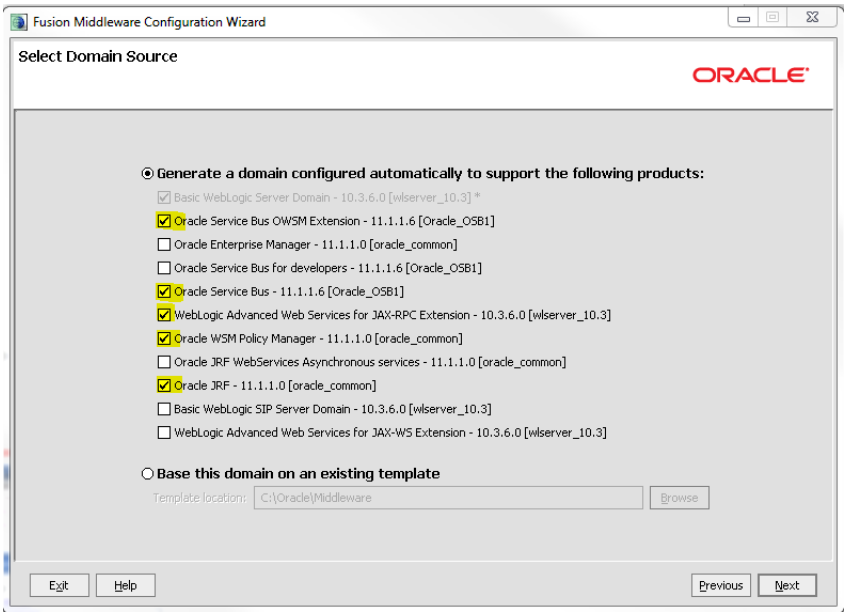
- One Admin Server
- Three Managed Servers: *rsb_server1*, *rsb_server2* and *rsb_http_proxy*.
- Cluster: The cluster consists of rsb_server1 and rsb_server2 as managed servers. OSB features are deployed on this cluster. Also, rsb_server1 hosts the singleton resources of OSB.
- Managed server *rsb_http_proxy* acts as the proxy server of the cluster. It does not have OSB code installed on it.

Perform the following steps to create a new WebLogic domain:

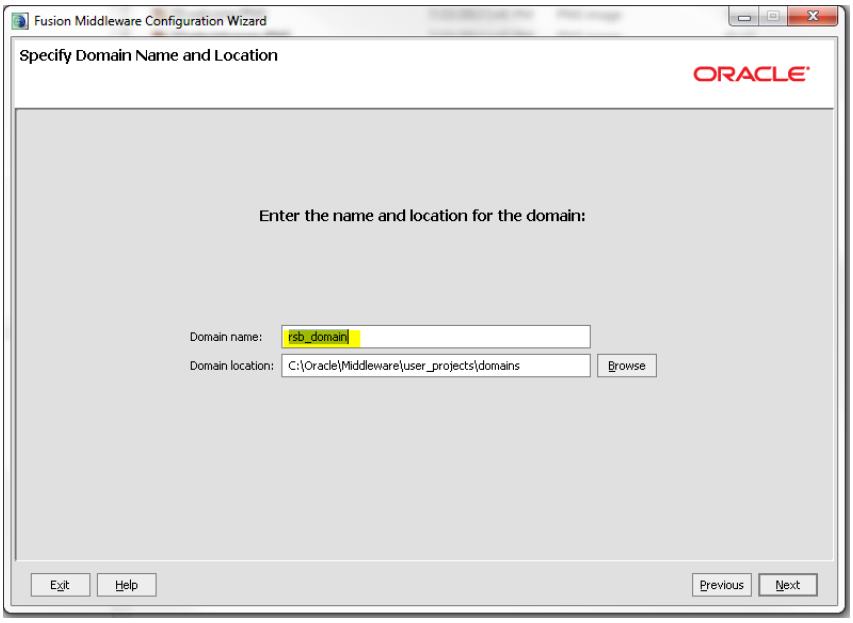
1. Run <WLS_HOME>/wlsserver_10.3/common/bin/config.sh.
2. Select **Create a new WebLogic domain** option. Click **Next**.



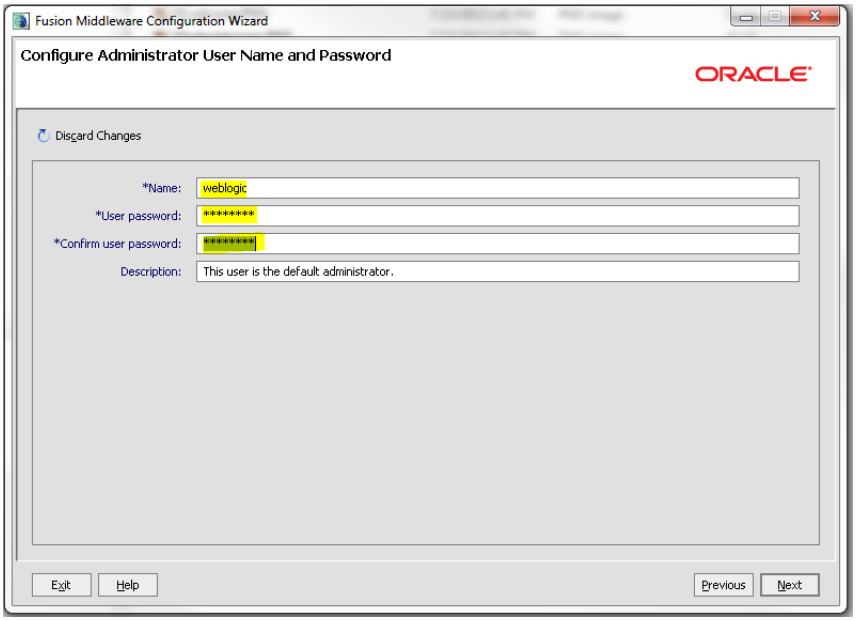
3. Select the OSB features for the domain.



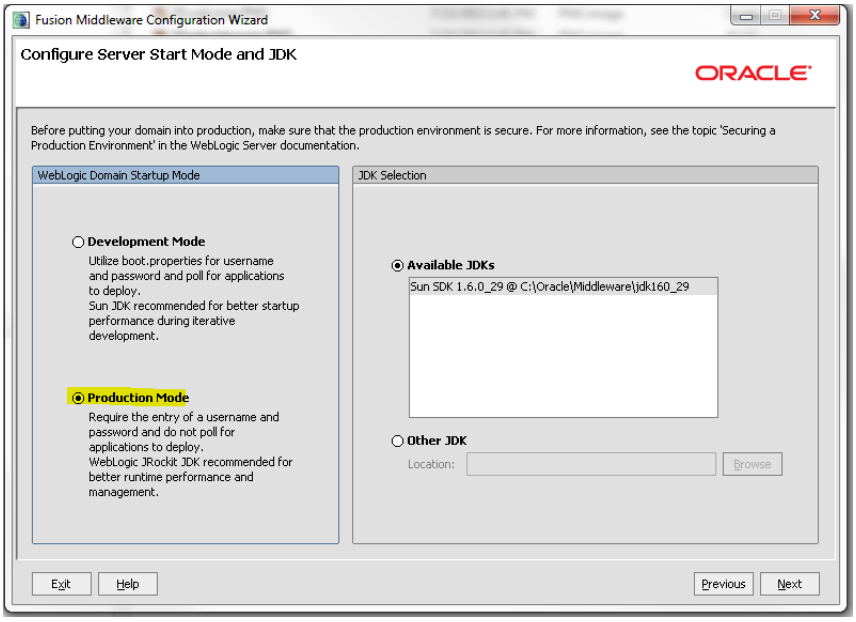
4. Enter the **Domain name**, for example: rsb_domain.



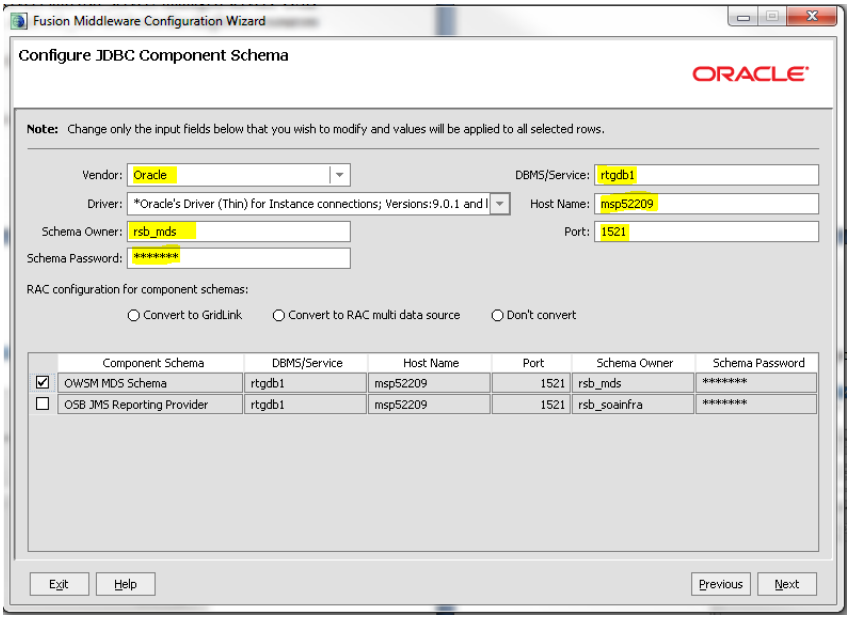
5. Enter **Name** (Username) and **User password** for the domain. Please note down the username and password. These are required again in the compilation phase of RSB.



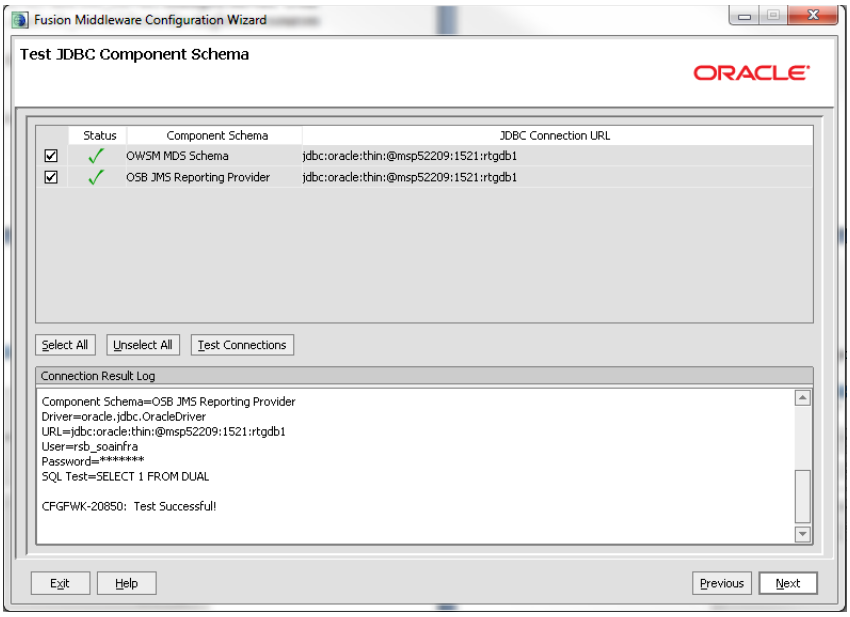
6. Select the JDK (1.7) and Start Mode.



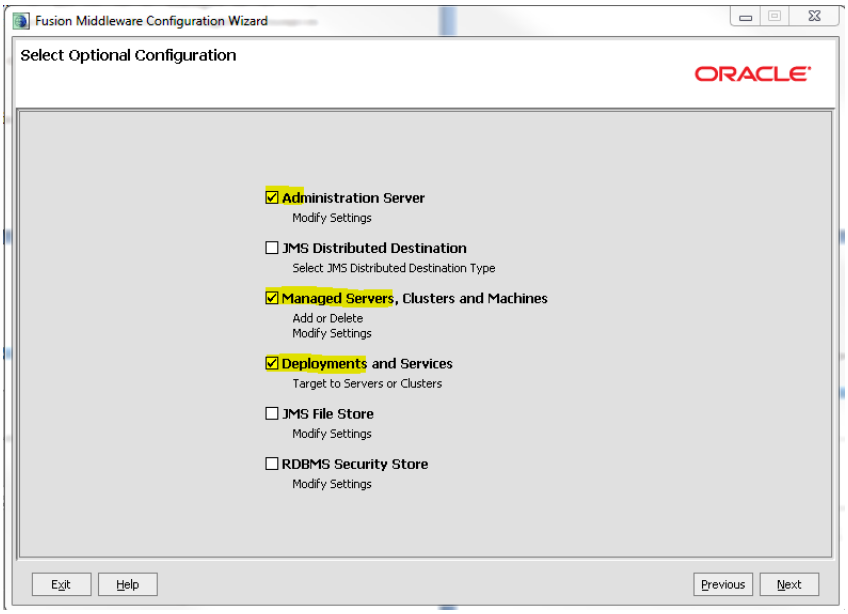
7. Provide the database details for SOAINFRA and MDS Schema. Connection details (as highlighted in the screenshot) for both schemas must be provided. The schema must be created already using the RCU tool. Specify configuration information for both schemas (in this example; rsb_soainfra and rsb_mds).



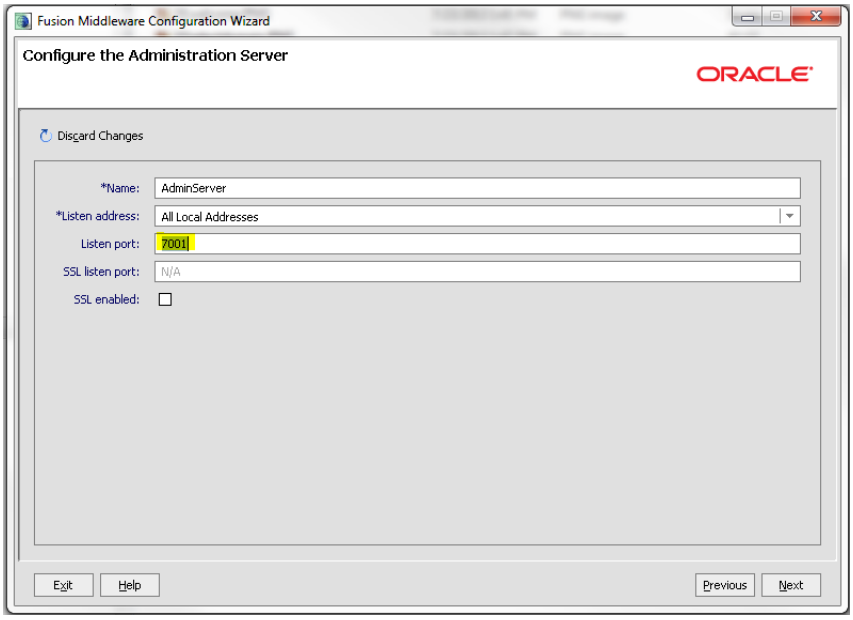
8. Test the JDBC Schema connection.



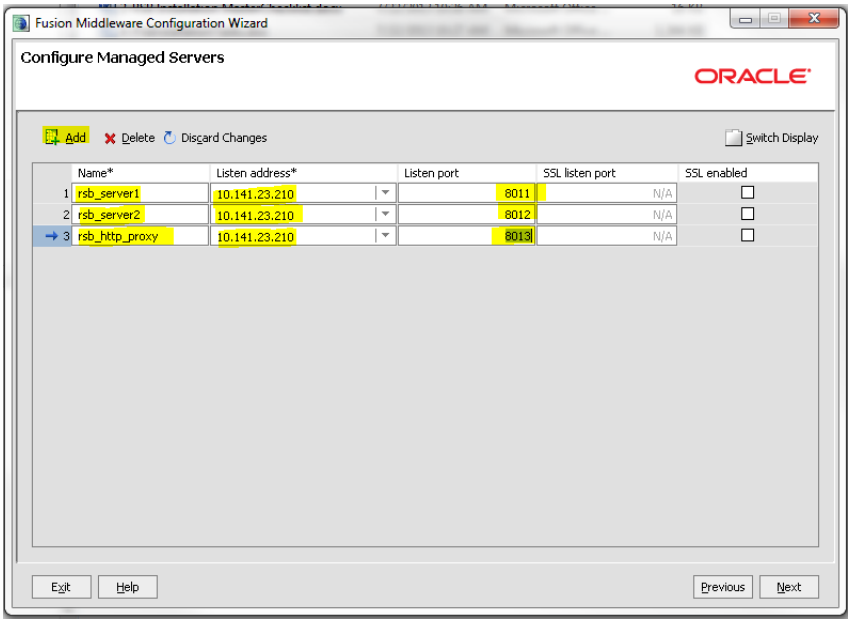
9. Select the options for creating managed servers and cluster.



10. Enter Admin Server details. If you are using SSL, you can enable SSL in this step and specify the SSL port.

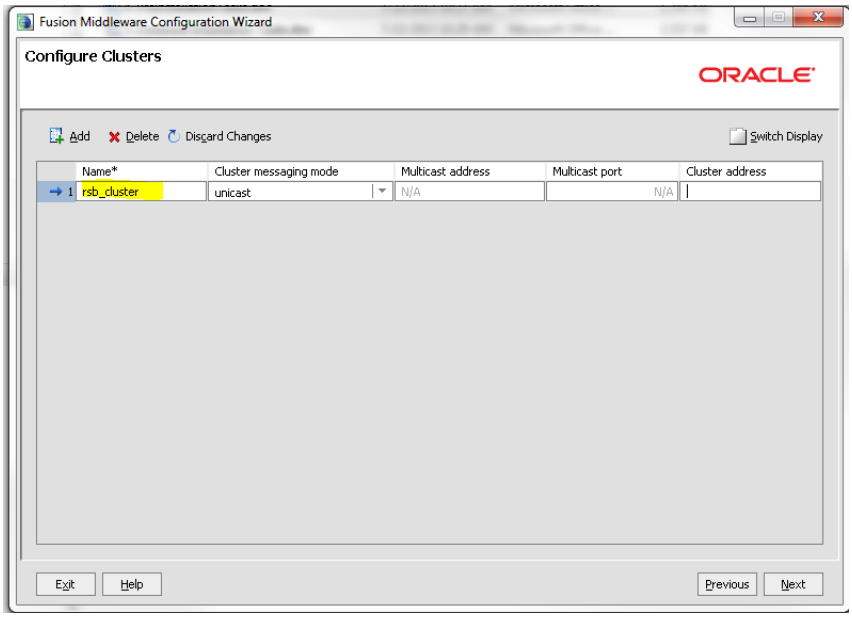


11. Enter details of all managed servers. If you are using SSL, you can enable the SSL in this step and specify the SSL port. Click **Next**.

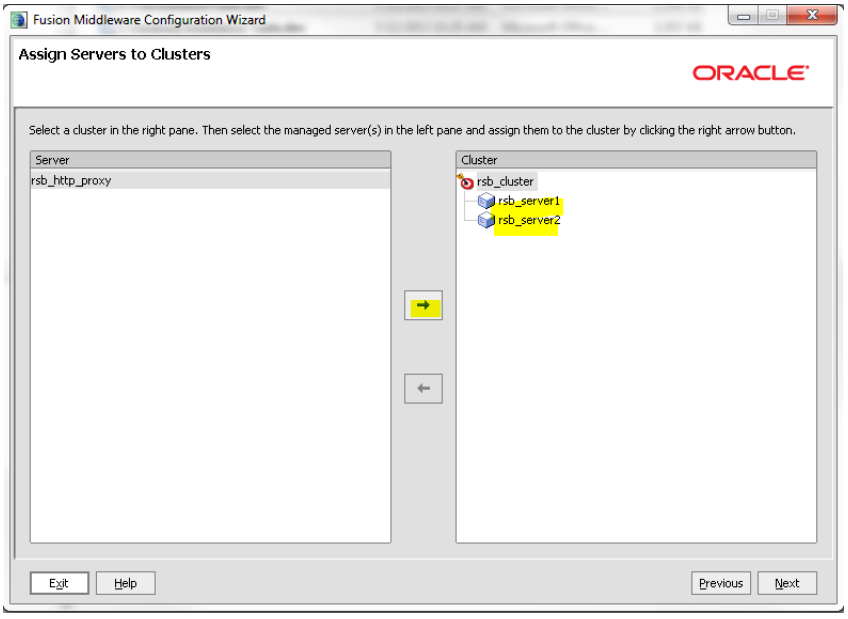


Note: Due to known vulnerabilities, SSLv3.0 is not considered secure and should be disabled in WLS. For secured installations the latest TLS version is recommended

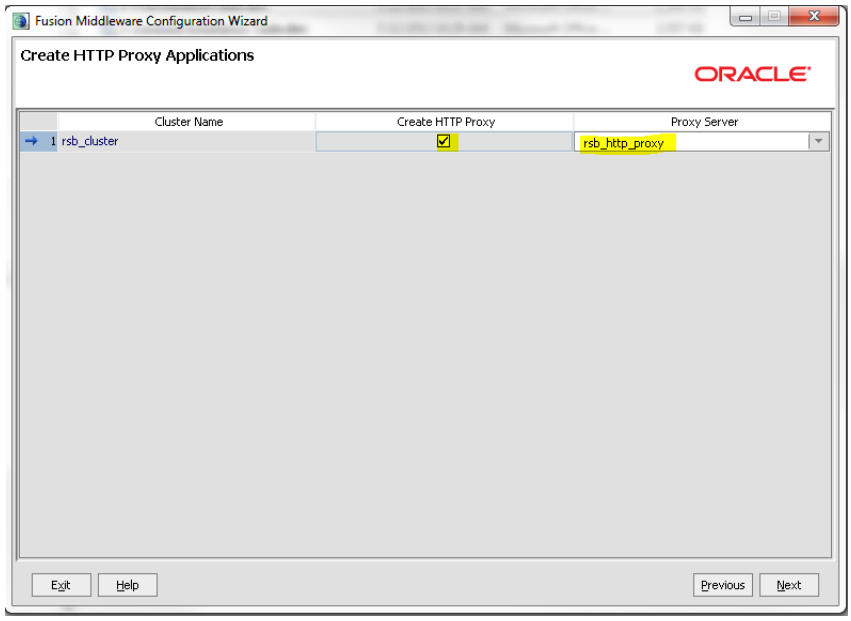
12. Enter the cluster name.



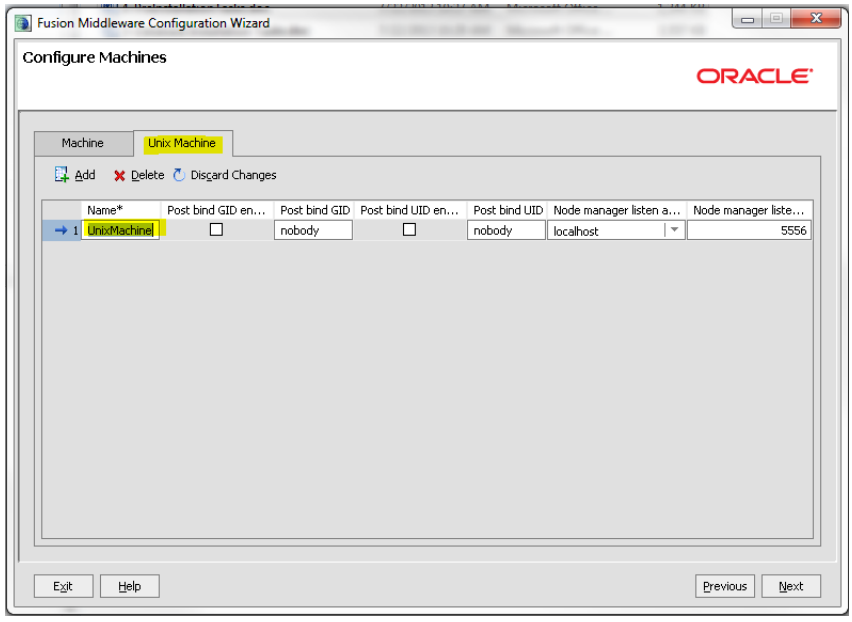
13. Add managed servers to the cluster. Notice that the proxy server, rsb_http_proxy, is not added to the cluster because we need that server as the HTTP proxy of the cluster.



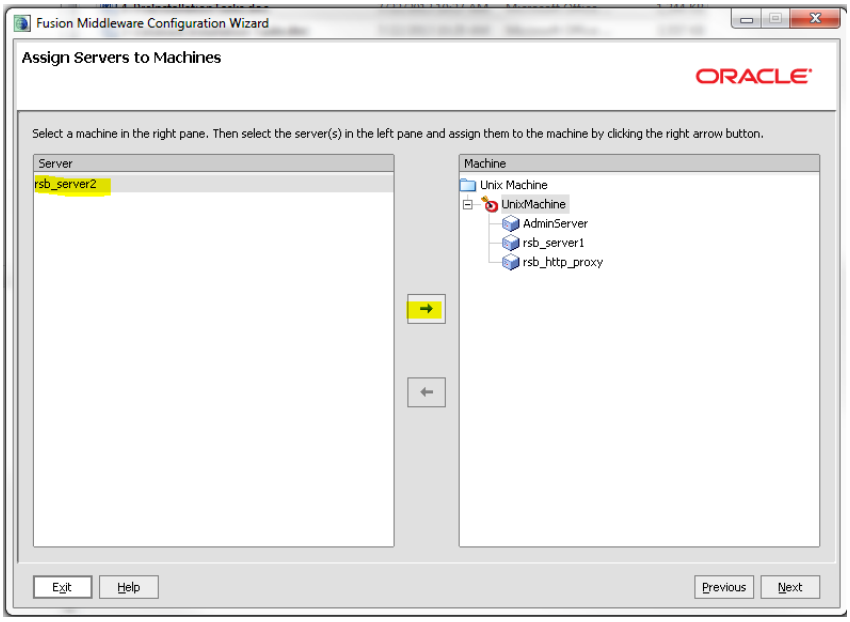
14. Enter HTTP Proxy details.



15. Configure Machine details. Click **Unix Machine** and specify the Name, Node Manager hostname and port. Click **Next**.

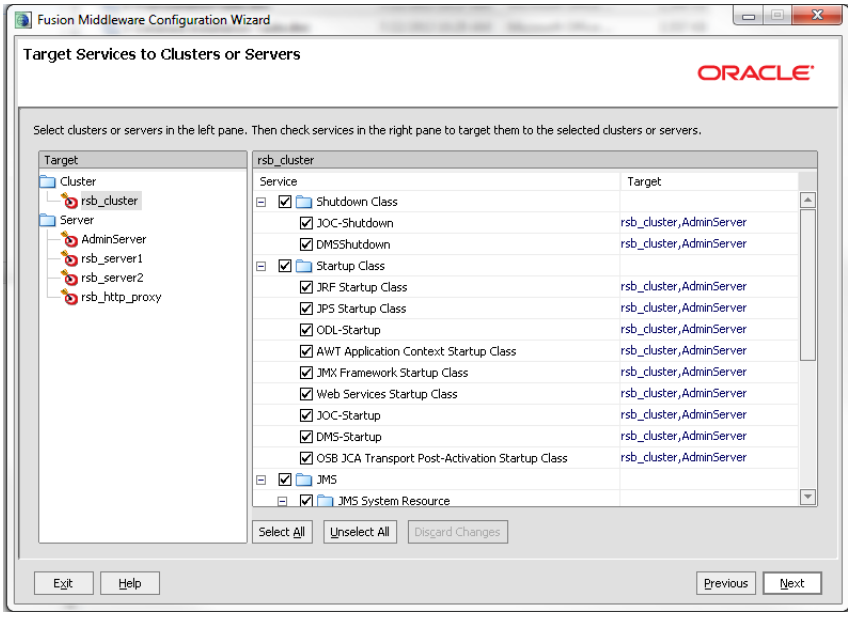


16. Add servers to the machine. Add all the servers.

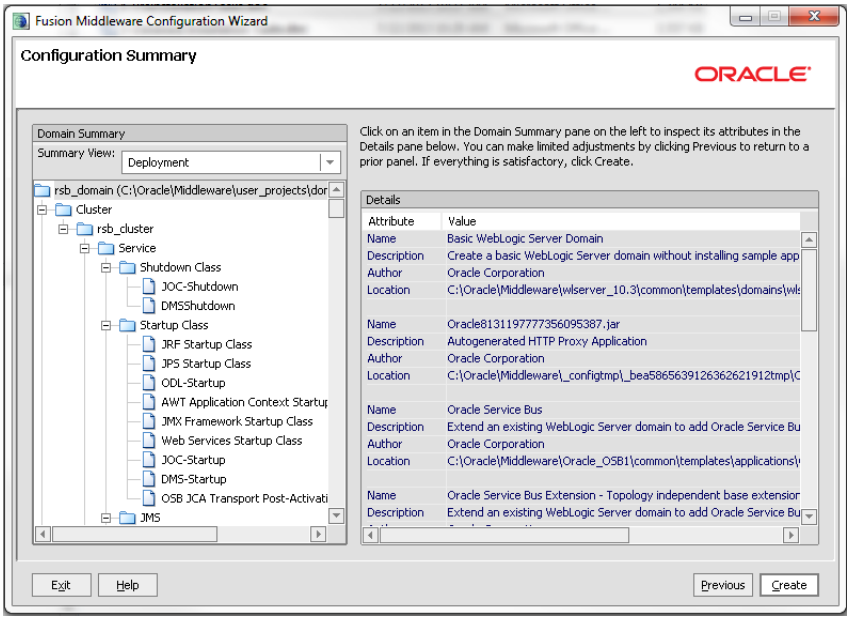


17. The next screen shows all the deployments that have been targeted to appropriate servers. You must not make any changes in this screen.

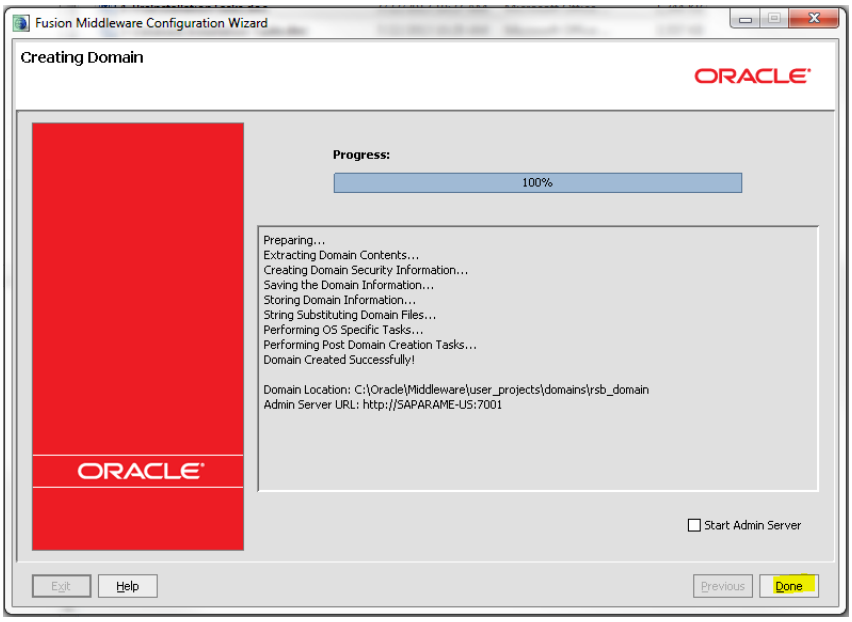
    The next screen shows all the services that have been targeted to appropriate servers. You must not make any changes in this screen.



18. From the Configuration Summary page, click **Create**.



19. Domain creation confirmation page



20. Grant required permission for WebLogic to access the credential store. Edit the <wlsHome>/wlserver_10.3/server/lib/weblogic.policy file and add the following permission, after replacing <domain-home> with the correct value.

grant codeBase "file:<domain-home>/-" {

permission java.security.AllPermission;

permission oracle.security.jps.service.credstore.CredentialAccessPermission "credstoressp.credstore", "read,write,update,delete";

permission oracle.security.jps.service.credstore.CredentialAccessPermission "credstoressp.credstore.*", "read,write,update,delete";

};

21. Edit the DOMAIN-HOME/bin/setDomainEnv.sh to add the max and min memory requirement for the servers. It is recommended to use 2GB or more for max memory.

    USER_MEM_ARGS="-Xms1024m -Xmx2048m -XX:MaxPermSize=1024m"

22. If NodeManager is used to control the servers in the cluster, edit WL_HOME/common/nodemanager/nodemanager.properties file to change the StartScriptEnabled property to true and make sure the StartScriptName property is set to startWebLogic.sh. Below is a sample from the file:

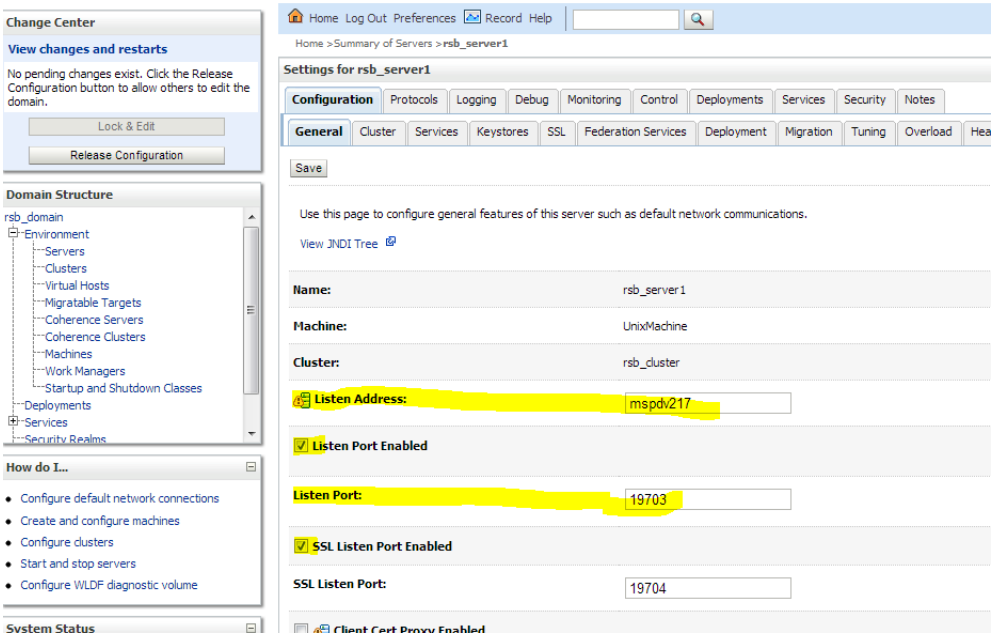
```
StartScriptName=startWebLogic.sh
StartScriptEnabled=true
```

HTTPS Configuration for WebLogic Server

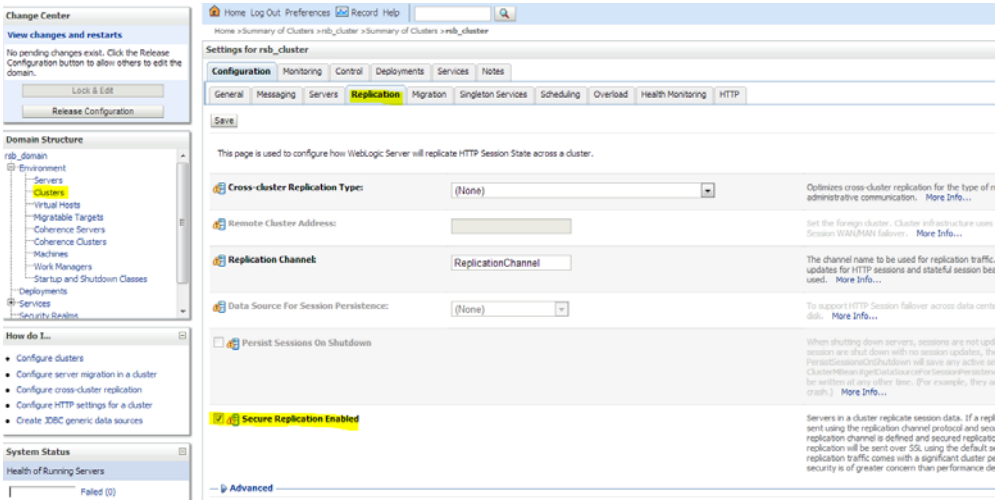
If you are using https (for Policy A), you will have to configure the following:

> **Note:** For additional information on configuring Policy A or Policy B, see the *Oracle Retail Service Backbone Security Guide*.

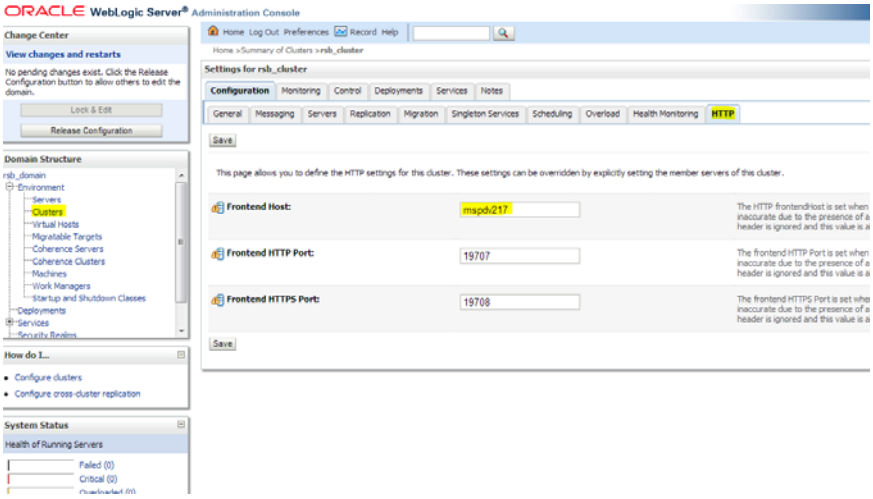
1. Enable https port for AdminServer, Http Proxy Server and all managed servers. Specify the **Listen Address**. The **Listen Address** must match the CN entry of the server certificate. Sometimes the CN entry of the server certificate is the fully qualified name (for example, rsbhost.example.com) instead of the short hostname (for example, rsbhost). If the entries do not match, the security configurations will not work.



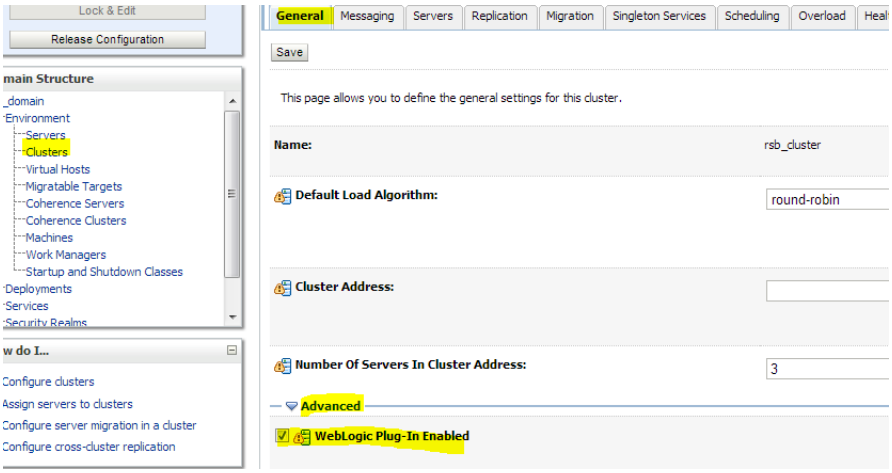
2. Enable secure replication. Enable the Secure Replication Enabled option available in **Environment** --> **Clusters** --> <cluster name> --> **Configuration** --> **Replication**



3. Set the Frontend Hostname for the cluster. This should match the CN entry of the certificate. **Environment** --> **Clusters** --> <cluster name> --> **Configuration** --> **HTTP**



4. Enable WebLogic plug-in. Check **WebLogic Plug-In Enabled** checkbox in **Environment** --> **Clusters** --> <cluster name> --> **Configuration** --> **General** --> **Advanced**. After the change, **Save, Activate Changes** and restart the Admin Server.


Lock & Edit
Release Configuration
main Structure
_domain
Environment
Servers
Clusters
Virtual Hosts
Migratable Targets
Coherence Servers
Coherence Clusters
Machines
Work Managers
Startup and Shutdown Classes
Deployments
Services
Security Realms
w do I...
Configure clusters
Assign servers to clusters
Configure server migration in a cluster
Configure cross-cluster replication
General
Messaging
Servers
Replication
Migration
Singleton Services
Scheduling
Overload
Save
This page allows you to define the general settings for this cluster.
Name:
rsb_cluster
Default Load Algorithm:
round-robin
Cluster Address:
Number Of Servers In Cluster Address:
3
Advanced
WebLogic Plug-In Enabled

5

Database Installation Tasks

This chapter describes how to install the necessary database.

Repository Creation Utility

Many of the Oracle Fusion Middleware components require the existence of schemas in a database prior to installation. These schemas are created and loaded in your database using the Repository Creation Utility (RCU).

See Repository Creation Utility documentation for more information:

http://docs.oracle.com/cd/E12839_01/doc.1111/e14259/toc.htm

RCU can be downloaded from following link:

http://www.oracle.com/technetwork/middleware/data-integrator/downloads/index.html

After downloading the .zip file, extract the contents to a directory of your choice; this directory will be referred to as the *RCU_HOME* directory.

The repository for Oracle Service Bus (OSB) must be created using RCU tool. The repository must contain SOA Infrastructure (SOAINFRA) schema. For OWSM domain, RCU must create Meta Data Services (MDS) schema too. The User Messaging (ORASDPM) schema is automatically created by RCU tool.

While creating a schema using RCU tool, user must select/mention a prefix which is added to all the schemas created by RCU. In the following example, RCU tool is used to create a repository with SOA Infrastructure schema as RSB_SOAINFRA, Metadata Services schema as RSB_MDS. The User messaging schema i.e. RSB_ORASDPM is automatically selected by RCU.

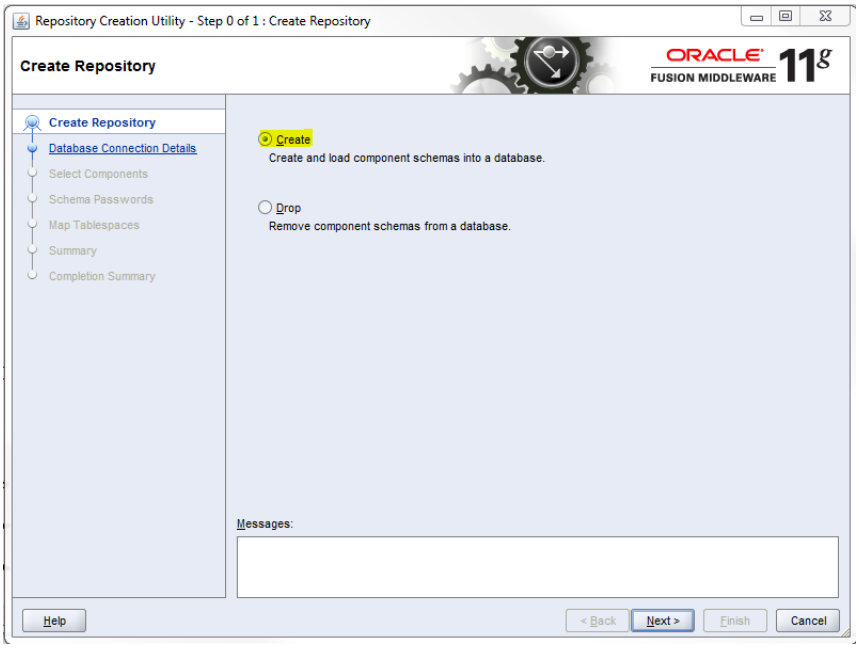
Steps for Installation of Database Schema using RCU

1. Run rcu executable from *RCU_HOME/bin*

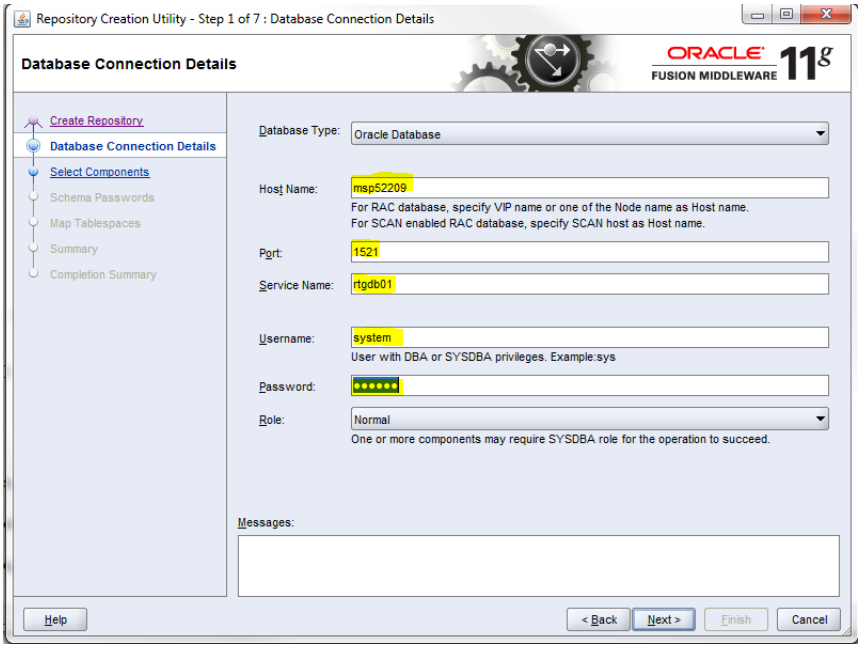
   ```
   cd RCU_HOME/bin
   rcu
   ```

   The Welcome page appears.

2. Click **Next** to continue.



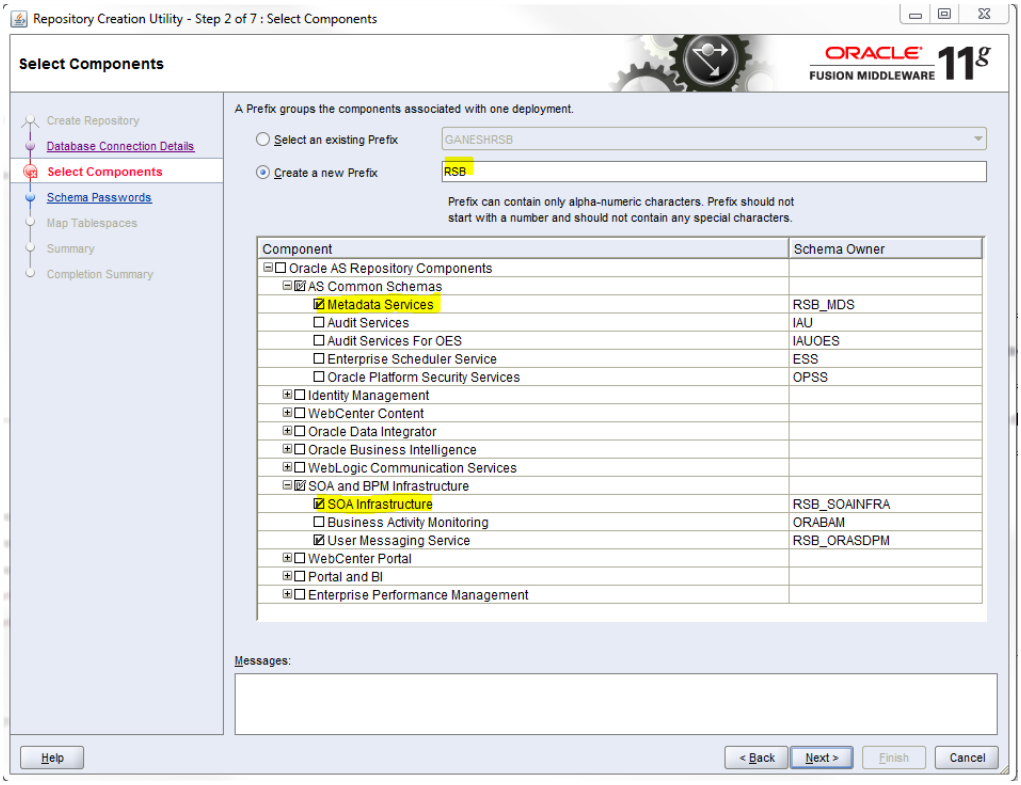
3. In Create Repository window, Select **Create** option and click **Next**.



4. In Database Connection Details window, provide database details and click **Next**.

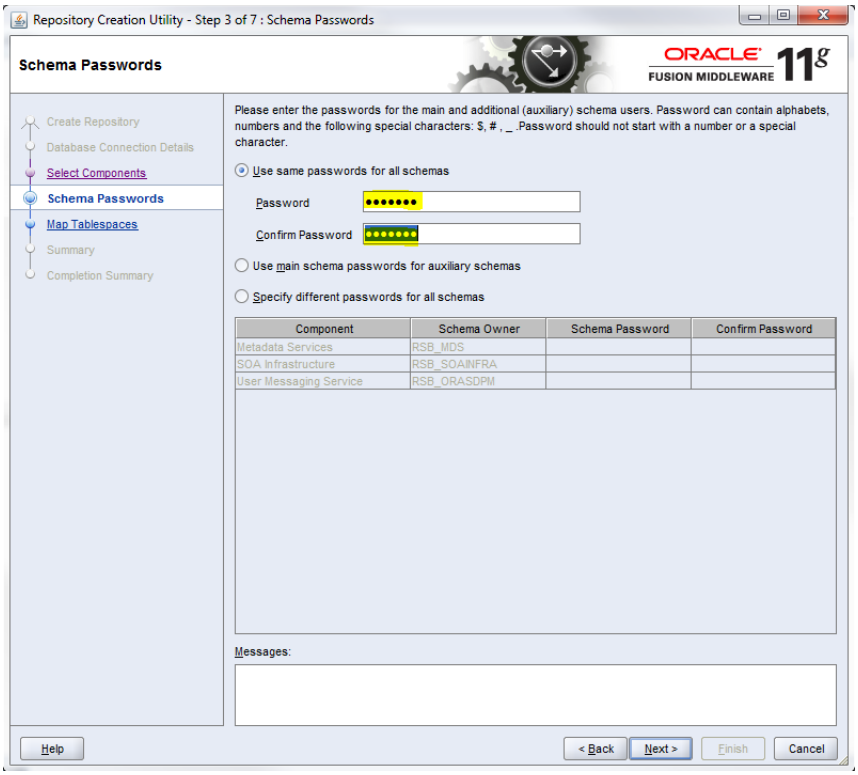
   Database Type: Oracle Database

   Role: SYSDBA

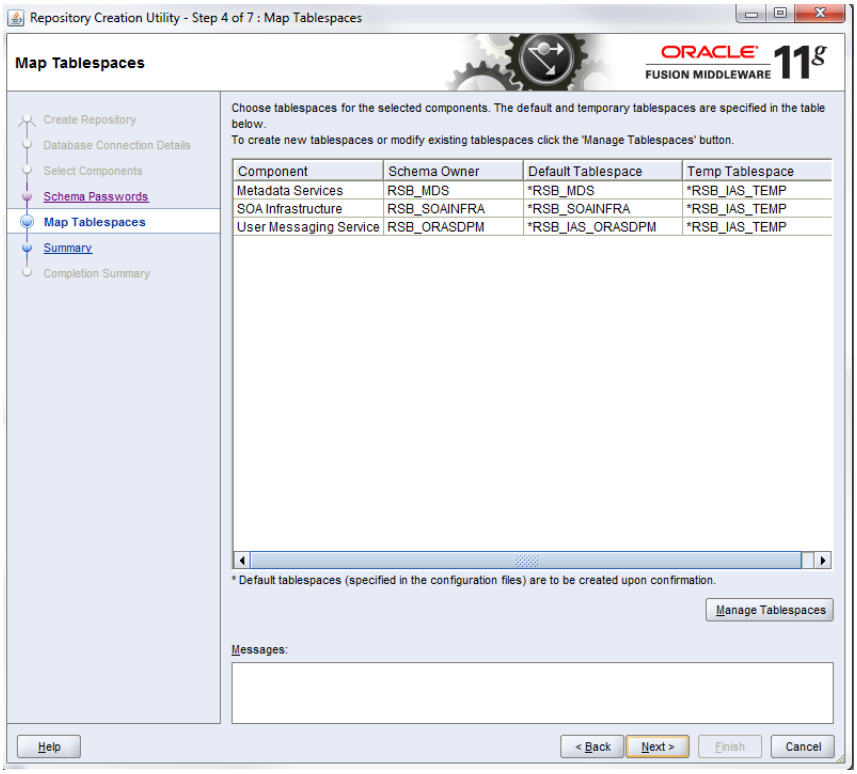


5. In Select Components window, provide a prefix (Select an existing prefix from drop down or give a new one). In Component box, select SOA Infrastructure under SOA and BPM Infrastructure. Also, select Metadata Services as shown.

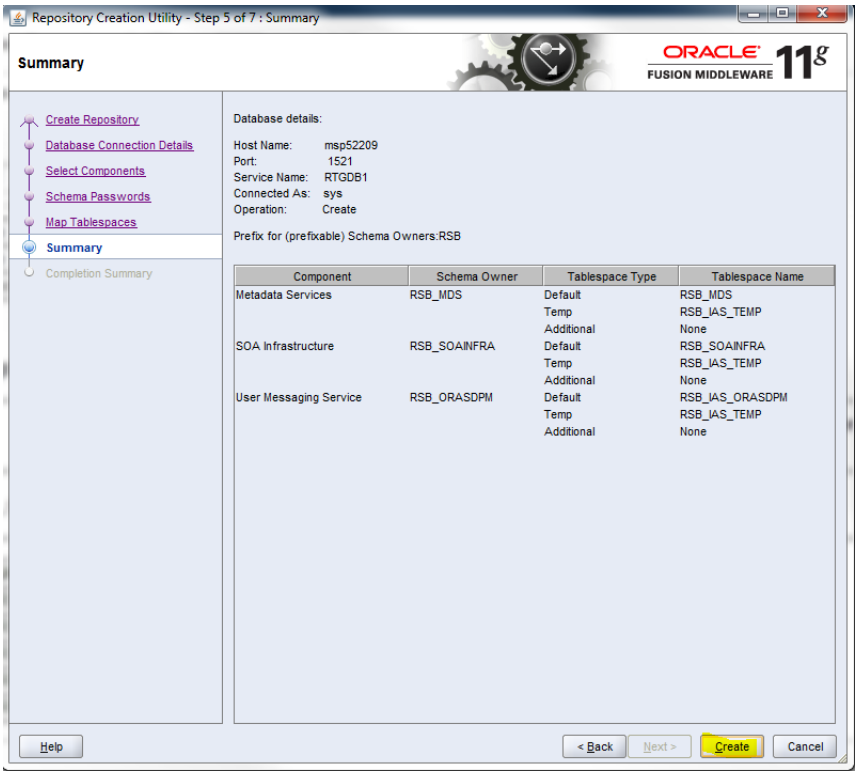
   Once the SOA Infrastructure option is selected, automatically User Messaging Service and Metadata services options get selected.



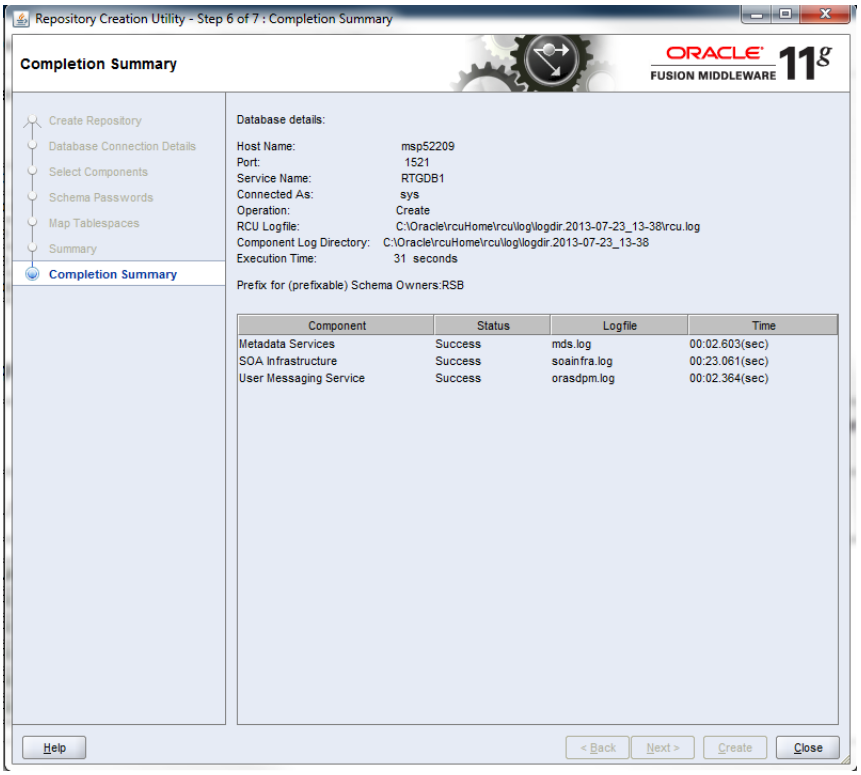
6. In Schema Passwords window, provide password and Click **Next**. Note down the schema name and passwords. These are needed during the domain creation time for configuring the OSB schemas and RSB compilation phase as credentials for sidb-jdbc-user-alias.



7. In Map Tablespaces window, check tablespace mapping details and click **Next**.



8. In Summary window, check database details and click **Create**.



9. In Completion Summary window, click **Close**.

6

RSB Installation

This chapter provides instructions for installing RSB. The complete installation of RSB can be broadly divided into 4 phases:

- Download
- Configuration
- Compilation
- Deployment

> **Note:** If there is an existing WebLogic installation on the server, you must upgrade to WebLogic 12.2.1.4. All middleware components associated with WebLogic server should be upgraded to 12.2.1.4.
>
> Back up the weblogic.policy file ($WLS_HOME/wlserver/server/lib) before upgrading your WebLogic server, because this file could be overwritten. Copy over the weblogic.policy backup file after the WebLogic upgrade is finished and the post patching installation steps are completed.

Steps to Install RSB

The following sections describe the process of installing the RSB product.

Download

In this phase, you have to download all the necessary archive files.

1. Download `RsbKernel14.2.0ForAll14.x.xApps_eng_ga.zip` to a directory in Linux/Unix. The rsb-home will be created inside this directory. Extract the archive file.

   ```
   unzip RsbKernel14.2.0ForAll14.x.xApps_eng_ga.zip
   ```

2. Download all `RsbAppServiceDecoratorPak<rsb_major_version>For<app><app_version>_eng_ga.zip` to `rsb-home/download-home/all-app-service-decorator` directory. Do not extract the files.
3. Download all `RsbServiceIntegrationFlowPak<rsb_major_version>For<service-name>_eng_ga.zip` to `rsb-home/download-home/all-functional-service-int-flow` directory. Do not extract the files.

4. Download `IntegrationGuide<rsb_major_version>ForAll14.x.xApps_eng_ga.zip` to `rsb-home/download-home/integration-guide` directory. Do not extract the files.
5. Download `RsbAdministrationApp<rsb_major_version>ForAll14.x.xApps_eng_ga.zip` to `rsb-home/download-home/admin-app` directory. Do not extract the files.
6. Set JAVA_HOME to a JDK 1.6.0+ 64 bit, 1.7.0+ 64 bit, or Jrockit 1.6 R28 build or later (64 bit for Linux and Solaris OS only).

   For example:

   ```
   export JAVA_HOME=/usr/bin/java/1.7.0
   ```
7. Run rsb-home/download-home/bin/check-version-and-unpack.sh script.

   ```
   check-version-and-unpack.sh
   ```

Configuration

> **Note:** Please run the command ***uname -n*** and make sure that the output matches exactly with hostname of the machine. This is important since hostname is a part of the names of many internal configuration attributes.

1. Edit *rsb-home/deployment-home/conf/rsb-deployment-env-info.properties* to configure the following properties:
   - JAVA_HOME
   - rsb-deployment-env-info.service-provider-app-in-scope-for-integration
   - rsb-deployment-env-info.service-requester-app-in-scope-for-integration
   - rsb-osb-container.domain-name
   - rsb-osb-container.<domain-name>.home
   - rsb-osb-container.<domain-name>.cluster-name
   - rsb-osb-container.<domain-name>.<cluster-name>.http-url (Cluster port is the port of http proxy server)
   - rsb-osb-container.<domain-name>.admin-server-http-url
   - rsb-osb-container.<domain-name>.admin-server-connection-url
   - rsb-osb-container.<domain-name>.<cluster-name>.managed-servers: It is a comma-separated list of managed servers in the cluster, excluding the http proxy managed server.
   - rsb-osb-container.<domain-name>.<cluster-name>.<managed-server>.managed-server-connection-url: Repeat this property for all the managed servers in the cluster.
   - service-infrastructure-db.jdbc-url
   - edge-app-container.<app>.connection-url: The host:port of the edge-application.
   - global.app-service-end-point-url-pattern: The pattern of edge service URLs. (**Note**: This is different if the service is hosted on glassfish Vs WebLogic 12c)

- rib.home.path: It is an optional field, to be given only if a valid rib-home is present.

Following table lists the various properties and their example values:

Property	Value (Illustration)
JAVA_HOME	/usr/java/jdk1.8.0_51
rsb-osb-container.domain-name	rsb_domain
rsb-osb-container.<domain>.home	rsb-osb-container.*rsb-domain*.home =/u00/rsb/Oracle/Middleware/user_projects/domains/rsb_domain
rsb-osb-container.<domain>.cluster-name	rsb-osb-container.*rsb_domain*.cluster-name=rsb_cluster
rsb-osb-container.<domain>.<cluster name>.http-url (Cluster port is the port of http proxy server)	rsb-osb-container.*rsb_domain.rsb_cluster*.http-url=http://*rsbhost*:7004
rsb-osb-container.<domain>.admin-server-http-url	rsb-osb-container.*rsb_domain*.admin-server-http-url=http://*rsbhost*:7001
rsb-osb-container.<domain>.admin-server-connection-url	rsb-osb-container.*rsb_domain*.admin-server-connection-url=t3://*rsbhost*:7001
rsb-osb-container.<domain>.<cluster name>.managed-servers (Comma separated list of managed servers in the cluster, excluding the http proxy managed server)	rsb-osb-container.*rsb_domain.rsb_cluster*.managed-servers=rsb_server1,rsb_server2
rsb-osb-container.<domain>.<cluster name>.<managed server>.managed-server-connection-url (*Repeat this property for all the managed servers in the cluster*)	rsb-osb-container.*rsb_domain.rsb_cluster.rsb_server1*.managed-server-connection-url=t3://*rsbhost*:7002
service-infrastructure-db.jdbc-url	jdbc:oracle:thin:@*rsbhost*:1521:rra1

edge-app-container.<app>.connection-url (the host:port of the edge application)	edge-app-container.*sim*.connection-url=t3://*rsbhost*:8080
global.app-service-end-point-url-pattern (The pattern of edge service URLs. Note: This is different if the service is hosted on glassfish Vs WebLogic)	http://<HTTP_HOSTNAME>:<HTTP_PORT>/<SERVICE_NAME>Service/<SERVICE_NAME>Bean
rib.home.path (optional)	rib1@*ribhost*:/u00/rib1/rib2/Rib1400ForAll14xxApps/rib-home

Additional steps for Policy A configuration

If RSB is configured with Security Policy A, perform the following additional steps:

1. Property configuration in `rsb-deployment-env-info.properties`

   rsb-osb-container.<domain>.<cluster>.https-url: The property provides the HTTPS URL of the http proxy managed server.

2. Override the <decorator>.app-service-end-point-url to use **https** protocol and **SSL port.** This can be done at global level OR app level too, but it is recommended to test single service end to end with SSL first during initial stabilization

   Following table lists the various properties and their example values:

Property	**Value (Illustration)**
rsb-osb-container.rsb_domain.rsb_cluster.https-url	rsb-osb-container.*rsb_domain*.*rsb_cluster*.http-url=https://*rsbhost*:7104
<*decorator*>.*app-service-end-point-url* oms-AdvancedShipmentNotification-AppServiceDecorator.app-service-end-point-url	**https**://*rsbhost*:**7102**/AdvancedShipmentNotificationBean/AdvancedShipmentNotificationService

3. Security Configuration: Download edge app service WSDL files.

```
cd rsb-home/service-assembly-home/bin
download-app-service-wsdl.sh
```

4. Create Policy Mapping File: Create security policy mapping file.

```
generate-rsb-decorator-security-config.sh
```

Additional steps for Policy B configuration

If RSB is configured with Policy B, perform the following additional steps:

1. Security Configuration: Download edge app web service WSDL files.

```
cd rsb-home/service-assembly-home/bin
download-app-service-wsdl.sh
```

2. Create Policy Mapping File: Create security policy mapping file

```
generate-rsb-decorator-security-config.sh
```

3. Setup Security Credentials: Setup security credentials for Message Protection.

```
setup-message-protection-security-credentials.sh
```

Compilation

Setup security credentials and compile:

```
cd rsb-home/service-assembly-home/bin
rsb-compiler.sh-setup-security-credential
```

During the compilation step, credentials need to be provided for the following aliases.

- sidb-jdbc-user-alias
- admin-server-user-alias
- rsb-admin-user-alias

Example:

Alias Name	Value (Illustration)
sidb-jdbc-user-alias	<*soainfra schema*>
admin-server-user-alias	<*weblogic user*>
rsb-admin-user-alias	<*rsb user*>

The -setup-security-credential option creates or updates the wallet file in *deployment-home/conf/security* folder. The wallet file contains userids and passwords in encrypted form. However it is possible to decrypt the information programmatically by anyone who has access to this file. Hence it is a good idea to lock down this folder from unauthorized users. You may use the following command to remove read access to this folder:

```
chmod 700 rsb-home/deployment-home/conf/security
```

> **Note:** If the security credentials are already setup for the above aliases (in a previous compilation attempt), compilation can be directly carried out as follows:

cd rsb-home/service-assembly-home/bin

```
rsb-compiler.sh
```

Deployment

1. Start Admin Server, Proxy Server and Managed servers:

```
cd <domainHome>/bin
startManagedWebLogic.sh
<managed server>
<AdminServer URL>
```

For example:

```
startManagedWebLogic.sh "qa_test_managedServer_1" "http://rsbhost:17001"
```

2. Prepare instrumentation configurations for WebLogic server.

```
cd rsb-home/deployment-home/bin
rsb-deployer.sh -prepare-wls
```

If RSB is configured with Policy B, perform the following steps before proceeding further. For unsecured configuration or RSB configuration with Policy A, move directly to Step b.

a. Copy Script: Copy security scripts to RSB server

```
cd rsb-home/integration-lib/rsb-tools/scripts
scp generate-pki-certificate-keystore-for-osb.sh
<user>@<host>:/<domainHome>/config/
scp import-remote-server-public-key-certificate-into-keystore.sh
<user>@<host>:/<domainHome>/config/
scp export-server-public-key-certificate-from-keystore.sh
<user>@<host>:/<domainHome>/config/
```

b. Generate Certs and Key store: Generate private key, public key and key store for the RSB server (To be done in the RSB server).

`<domainHome>/bin/setDomainEnv.sh` (This command must be run in the current shell. Prefix the command with a period and a space character)

```
cd <domainHome>/config
generate-pki-certificate-keystore-for-osb.sh
```

You will be asked for a keystore password and private key password. Please note the passwords. You will have to provide the same passwords in subsequent steps.

Note: If you are getting the certificate from a CA, do not run the above command. Instead, create a keystore with the name `<hostname>-keystore.jks` where hostname is the short hostname of the server (output of *hostname -s* command) and then import the certificate and key (public key and private key) to the key store. You may use the following command to import to the keystore.

```
java utils.ImportPrivateKey -certfile <certificate file> -keyfile <private
key file> -keyfilepass <private key password> -keystore
<hostname>-keystore.jks -storepass <keystore password> -alias
<hostname>-public-private-key-alias -keypass <private key password>
```

c. Copy app server certificate(s)

Copy edge app certificate file(s) to *<wlsHome>/config* of the RSB server. The file name must be *<remote-host>-certificate.der*

Note: See RSB Security Guide for instructions to export certificate from edge app server.

d. Import app server certificate(s):

Import all the edge app server public key certificates to RSB server's keystore. If the edge apps are deployed in different servers, import all the certificates to the keystore (To be done in the RSB server):

```
cd <domainHome>/config
import-remote-server-public-key-certificate-into-keystore.sh <app>
<remote-host>
```

For example:

```
import-remote-server-public-key-certificate-into-keystore.sh cm <hostname>
```

For the keystore password, provide the password you specified in the step b.

e. Configure RSB Server: Configure the RSB server to use the key store generate in the previous steps.

```
cd rsb-home/deployment-home/bin
configure-rsb-app-server-for-security-policy-b.sh
```

For the keystore password and private key password, provide the passwords you specified in the step ii.

f. Restart Servers: Restart Admin and Managed Servers

3. Deploy all the decorators.

- Deploy one decorator at a time.

```
cd rsb-home/deployment-home/bin
rsb-deployer.sh -deploy-rsb-service <OSB Project jar>
```

For example, rsb-deployer.sh -deploy-rsb-service igs-ASNInPublishing-AppServiceDecorator.jar

- Deploy all the decorators of an app at a time.

```
cd rsb-home/deployment-home/bin
rsb-deployer.sh -deploy-all-rsb-service-for-app <appName>
```

For example, rsb-deployer.sh -deploy-all-rsb-service-for-app igs

- Deploy all the decorators of all apps in scope at a time.

```
cd rsb-home/deployment-home/bin
rsb-deployer.sh -deploy-all-rsb-service
```

4. Deploy rib4oms injector service

```
cd rsb-home/deployment-home/bin
rsb-deployer.sh -deploy-rsb-service
RibOmsToRsbOmsRouting-ServicesIntegrationFlow.jar
```

5. Deploy RSB Admin app i.e. Retail Integration Console (RIC):

```
cd rsb-home/deployment-home/bin
rsb-deployer.sh -deploy-admin-app
```

6. If RSB policy B is configured, perform the following step else jump to Step 7:

Export Certificate: Copy the script from integration-lib. Export the certificate, so that it can be used by the service consumers. (To be done in the RSB server).

```
cd <wlsHome>/config

export-server-public-key-certificate-from-keystore.sh
```

7. Restart all the servers i.e. Admin Server, managed servers and proxy server.

Note: By default the maximum number of in-memory sessions for WebLogic web applications is unlimited. This setting can be misused by external attackers to create unlimited number of sessions by accessing the web application. In such cases it is possible that the WebLogic server run out of memory and eventually crash. So it is required to limit the number of sessions to a reasonable number (e.g., 100). The settings can be changed through the admin console of the WebLogic server. Follow the steps below to change this configuration setting:

1. Login to Admin Console.
2. Click **Deployments**.
3. Click the war application (or war module if it is inside an ear application).
4. Click **Configuration**.
5. Set Maximum in-memory Sessions to 100.
6. Save the changes. Activate the session, if needed.

7

Install JSIT

JSIT is a tool that can help to mock the behavior of retail applications. JSIT can be used to validate the installation of RSB, in the absence of edge applications. This is an optional step, only needed when one or more real oracle retail edge application is not ready at the time of RSB installation. Later, when the applications are ready, modify the service endpoints in the RSB configuration file (*rsb-deployment-env-info.properties*), recompile RSB and redeploy RSB decorators and admin app.

Download and Prepare SIT

1. Download and save javaee-service-interface-tester-<version>.ear in an install stage folder, which will be referred to here as SIT_JAVAEE_APP_HOME.
2. Download and save RSE generated JavaEE ejb-jar (<app>-service-ejb.jar) in SIT_JAVAEE_APP_HOME. <app> is the application name that hosts the application service. e.g., rms-service-ejb.jar.

   Merge the two components:

   ```
   jar -uvf javaee-service-interface-tester-<version>.ear <app>-service-ejb.jar
   ```

   Note: Multiple applications can be hosted on JSIT.

   For example:

   ```
   jar uvf javaee-service-interface-tester-14.2.0.ear
   rms-service-ejb.jar ooc-service-ejb.jar oms-service-ejb.jar
   ```

Deploy javaee-service-interface-tester-<version>.ear to Glassfish

1. Open Glassfish (JavaEE 6) Application Service console.

   For example:

   ```
   http://localhost:4848/"http://localhost:4848
   ```
2. Deploy javaee-service-interface-tester-<version>.ear.

   Your web browser --> Glassfish AdminConsole --> Application --> Deploy --> Browse to **javaee-service-interface-tester-<version>.ear**
3. Click **Deploy**.

Deploy SIT to WebLogic 12c

1. Verify if DERBY_FLAG is set to "true" Ex: DERBY_FLAG="true" in the setDomainEnv.sh script.

2. Add derby.jar to your WebLogic startup classpath.

   To do this edit the commEnv.sh script in WLS and add the derby.jar to DERBY_CLIENT_CLASSPATH variable.

   For example, DERBY_CLIENT_CLASSPATH="${DERBY_HOME}/lib/derby.jar:${DERBY_HOME}/lib/derbyclient.jar"

3. Open WebLogic 12c Console.

   a. Deploy javaee-service-interface-tester-<version>.ear.

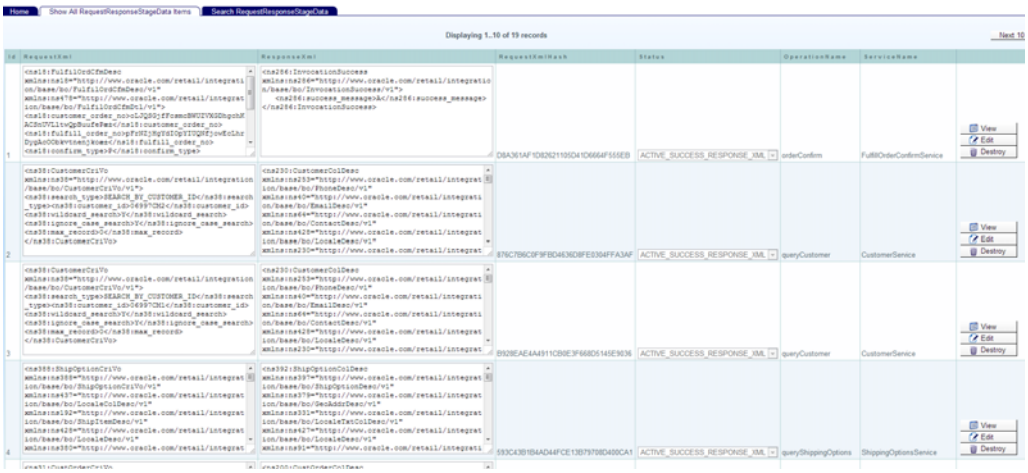
      Your Web Browser --> WebLogic AdminConsole --> Deployments --> Deploy --> Browse to **javaee-service-interface-tester-<version>.ear**

   b. Click **Deploy**.

Note: Please do not change the default application name. It should be kept as *javaee-service-interface-tester-<version>.ear*.

Verify JSIT

JSIT Installation can be verified by browsing the URL `http://<hostname>:<port>/javaee-service-interface-tester-web`. You should be able to see the following screens if the installation is successful.



8

Post Installation Tasks

Verification using RSB Admin

Once the deployment process is completed and all the servers are restarted, verify the success by accessing the rsb-admin app i.e. Retail Integration Console (RIC)

Open the link: *http://hostname:port/rsb-admin*, where hostname and port are of the Admin Server.

Check if all the tabs are opening without error.

Common Issues

- -bash: sqlplus command not found

  Solution: sqlplus command should be run on machine where Oracle database is installed.

  Set Oracle Database Home directory path in a variable say ORACLE_HOME and export ORACLE_HOME/bin in the classpath. To add entries into path perform the following steps:

  ```
  ORACLE_HOME= /u00/oracle/app/oracle/product/12.1/dbhome_1

  export ORACLE_HOME

  PATH=$PATH:$ORACLE_HOME/bin

  export PATH
  ```

- Decorators not getting deployed in non-secure deployment.

  Solution: OWSM is required even in non-secure deployment. Make sure that OWSM is configured for WebLogic domain where decorators are being deployed. User must make sure that Oracle Service Bus OWSM Extension is selected while WebLogic domain is created/extended.

- Admin app was showing the error *"Could not initialize class au.awt.GraphicsEnvironment*" or web browser stuck in refresh loop after logging in.

  Solution: Issue can be resolved by setting the variable *java.awt.headless* to true.

  (-Djava.awt.headless=true)

A

Appendix: RSB Installation Checklist

Notations

- wlsHome - The home directory of WebLogic. e.g., /u00/rsb/Oracle/Middleware
- domainHome - The home directory of the domain. e.g., /u00/rsb/Oracle/Middleware/user_projects/domains/rsb_domain
- rcuHome - The home directory of Repository Creation Utility. e.g., /u00/rsb/Oracle/rcuHome
- app - the application acronym. e.g., sim, rms
- HIGHLIGHTED STEPS ARE ADDITIONAL STEPS REQUIRED FOR SECURITY. INSTALLATION WILL WORK WITHOUT ENABLING THE SECURITY
- [PolicyA] - These instructions are specific to security policy A configuration
- [PolicyB] - These instructions are specific to security policy B configuration

Prerequisites

Task	Notes	Command	Example
1. [PolicyA][PolicyB] Security Prerequisite: Secure Edge App Services	RSB supports security. However, primary lifecycle steps work with/without enabling security	Refer to the document *RSB Security Guide* for securing app services	
2. Download and stage all third-party software			
3. Install JDK	Version 1.8		
4. Install WebLogic	Version 12.2.1.4		
5. Install Oracle DB server	12c, 19c		
6. Install OSB on WebLogic	Version 12.2.1.4		
7. Install RCU	Version 12.2.1.4 The repository for OSB must be created with this tool		

8. Create DB schema for OSB	Use Repository Creation Utility (RCU)	<rcuHome>/bin/rcu	Create schema name: RSB_SOAINFRA -Under SOA Infrastructure in RCU [PolicyA][PolicyB]Create schema name: RSB_MDS - Under Metadata Services in RCU (OWSM domain requires MDS schema) Note: The schema RSB_ORSDPM will be automatically selected by RCU.
9. Configure OSB domain [PolicyA][Policy B] Create OWSM domain Create a cluster	Choose OSB (Oracle Service Bus - 12.2.1.4) ADF (Oracle JRF - 12.2.1.4) Choose OSB OWSM Extension-12.2.1.4 Create AdminServer Create 1 managed server for Http Proxy Create 2 managed servers	`cd <wlsHome>/wlserver/common/bin config.sh`	rsb_domain (See *RSB Deployment Architecture.doc* in References for detailed instructions) rsb_cluster AdminServer rsb_server1 rsb_server2 [PolicyA] Note: Enable SSL for all the managed servers during creation. This can be done post creation too using WebLogic Console. **Environment** --> **Servers** --> Click on <M.Server> --> Check "**SSL Listen Port Enabled**" --> Specify the port number --> **Save** --> Activate Session
10. Install RIB (optional)	A valid RIB home is required for the deployment of RSB, if RIB is enabled.		

Recommended Port Numbers for WebLogic Servers

Each WLS Domain has a unique number in the thousands place value. It starts from 7, increments of 1	SSL or non SSL is designated by the hundredth place value	Admin Server - Tenth and Unit place value is always 01	Managed Server - covers unit and tenth place value, starting from 2 increment of 1	Example

7XXX - first domain in a machine, 8XXX - second domain in a machine, 9XXX, 10XXX, 11XXX	X0XX for non-SSL X1XX for SSL	X001 - for non SSL	X0X2, X0X3, X0X4,...X0X9,X010, X011 - for non SSL	7001 7101
X101 - for SSL	X1X2, X1X3, X1X4,...X1X9,X110, X111 - for SSL			

Prepare WebLogic Server for RSB deployment

Task	Notes	Command	Example

1. Grant WebLogic permission to access credential wallet	Edit *weblogic.policy* and add the permission to access credential wallet.	`cd <wlsHome>/wlserver/server/lib`
		`vi weblogic.policy`
			grant codeBase "file:/u00/rsb/Oracle/Middleware/user_projects/domains/rsb_domain/-" {
			permission java.security.AllPermission;
			permission oracle.security.jps.service.credstore.CredentialAccessPermission "credstoressp.credstore", "read,write,update,delete";
			permission oracle.security.jps.service.credstore.CredentialAccessPermission "credstoressp.credstore.*", "read,write,update,delete";
			};

2. JVM heap size (Optional)	Set maximum and minimum heap size	`cd <domainHome>/bin` `vi setDomainEnv.sh`	USER_MEM_ARGS="-Xms1024m -Xmx2048m -XX:MaxPermSize=1024m"

Download

Task	Notes	Command/Example
1. Download RSB Kernel	Download *RsbKernel14.2.0ForAll 14.x.xApps_eng_ga.zip* to a directory in Linux/Unix. The rsb-home will be created inside this directory. Extract the archive file.	

2. Download Decorators	Download all *RsbAppServiceDecoratorPak<rsb_major_version>For<app><app_version>_eng_ga.zip* to rsb-home/download-home/all-app-service-decorator/ directory. Do not extract the files.	
3. Download Service Flows	Download all *RsbServiceIntegrationFlowPak< rsb_major_version >For<service-name>_eng_ga.zip* to *rsb-home/download-home/all-functional-service-int-flow* directory. Do not extract the files.	
4. Download Integration Guide	Download IntegrationGuide< *rsb_major_version >ForAll14.2.0Apps_eng_ga* to *rsb-home/download-home/integration-guide* directory. Do not extract the files.	
5. Download Admin App	Download *RsbAdministrationApp< rsb_major_version >ForAll14.x.xApps_eng_ga.zip* to *rsb-home/download-home/admin-app* directory. Do not extract the files.	
6. Set JAVA_HOME	Set JAVA_HOME to a JDK 1.7.0+ 64 bit, or Jrockit 1.6 R28 build or later (64 bit for Linux and Solaris OS only).	`export JAVA_HOME=/usr/bin/java/1.7.0`
7. Check version and unpack	Run the check version and unpack script	`cd rsb-home/download-home/bin check-version-and-unpack.sh`
8. Create tablespaces with names 'RETAIL_DATA' and 'RETAIL_INDEX'	The rsb-deployer.sh script expects permanent Tablespace with correct names created as a prerequisite and will use these Tablespaces to create RSB_SOAINFRA database objects.	

Configure

Edit *rsb-home/deployment-home/conf/rsb-deployment-env-info.properties* to configure following properties:

Property	Example Value
JAVA_HOME	/usr/java/jdk1.7.0_11
rsb-osb-container.domain-name	rsb_domain
rsb-osb-container.<domain>.home	rsb-osb-container.*rsb-domain*.home =/u00/rib1/Oracle/Middleware/user_projects/domains/rsb_domain
rsb-osb-container.<domain>.cluster-name	rsb-osb-container.*rsb_domain*.cluster-name=rsb_cluster
rsb-osb-container.<domain>.<cluster name>.http-url (Cluster port is the port of http proxy server)	rsb-osb-container.*rsb_domain.rsb_cluster*.http-url=http://*rsbhost*:7004
[PolicyA] rsb-osb-container.rsb_domain.rsb_cluster.https-url (Provide the HTTPS URL of the http proxy managed server)	rsb-osb-container.*rsb_domain.rsb_cluster*.http-url=https://*rsbhost*:7104
rsb-osb-container.<domain>.admin-server-http-url	rsb-osb-container.*rsb_domain*.admin-server-http-url=http://*rsbhost*:7001
rsb-osb-container.<domain>.admin-server-connection-url	rsb-osb-container.*rsb_domain*.admin-server-connection-url=t3://*rsbhost*:7001
rsb-osb-container.<domain>.<cluster name>.managed-servers (Comma separated list of managed servers in the cluster, excluding the http proxy managed server)	rsb-osb-container.*rsb_domain.rsb_cluster*.managed-servers=rsb_server1,rsb_server2

rsb-osb-container.<domain>.<cluster name>.<managed server>.managed-server-connection-url (Repeat this property for all the managed servers in the cluster)	rsb-osb-container.*rsb_domain*.*rsb_cluster*.*rsb_server1*.managed-server-connection-url=t3://*rsbhost*:7002
service-infrastructure-db.jdbc-url	jdbc:oracle:thin:@*dbhost*:1521:rra1
edge-app-container.<app>.connection-url (the host:port of the edge application)	edge-app-container.*sim*.connection-url=t3://*edgeapphost*:8080
global.app-service-end-point-url-pattern (The pattern of edge service URLs. Note: This is different if the service is hosted on glassfish Vs WebLogic)	http://<HTTP_HOSTNAME>:<HTTP_PORT>/<SERVICE_NAME>Service/<SERVICE_NAME>Bean
rib.home.path (optional)	rib1@*ribhost*:/u00/rib1/rib2/Rib1400ForAll14xxApps/rib-home

Compile

Task	Notes	Command
1. [Policy A] [PolicyB] Security Configuration	Download edge app service WSDLs	`cd rsb-home/service-assembly-home/bin/` `download-app-service-wsdl.sh`
2. [PolicyA] [PolicyB] Create Policy Mapping file	Create security policy mapping file	`generate-rsb-decorator-security-config.sh`
3. [PolicyB] Setup Credentials	Setup security credentials for Message Protection	`setup-message-protection-security-credentials.sh`
4. Setup credentials and compile	Setup the user IDs and passwords in the wallet file ■ admin-server-user-alias ■ sidb-jdbc-user-alias ■ rsb-admin-user-alias	`cd rsb-home/service-assembly-home/bin/` `rsb-compiler.sh -setup-security-credential`
5. Compile Note: If step 4 is executed, skip this step.	Compile the configurations	`cd rsb-home/service-assembly-home/bin/` `rsb-compiler.sh`

Deploy

Task	Notes	Command

1. Start the servers	Start Admin Server, Proxy Server, Managed Servers	`cd <domainHome>/bin`
		`startWeblogic.sh`
		`startManagedWebLogic.sh <managed server>`

2. Prepare WLS	Prepare instrumentation configurations for WebLogic server	`cd rsb-home/deployment-home/bin` `rsb-deployer.sh -prepare-wls`
3. Restart Servers	Restart all the servers (Admin + Managed servers)	

4. [PolicyB]
Copy script
	Copy security scripts to RSB server	`cd rsb-home/integration-lib/rsb-tools/scripts`
		`scp generate-pki-certificate-keystore-for-osb.sh <user>@<host>:/<domainHome>/config/`
		`scp import-remote-server-public-key-certificate-into-keystore.sh <user>@<host>:/<domainHome>/config/`
		`scp export-server-public-key-certificate-from-keystore.sh <user>@<host>:/<domainHome>/config/`

5. [PolicyB]
Generate Certs and Key store
	Generate private key, public key and key store for the RSB server (To be done in the RSB server)
	Note: If you are using CA certificates, do not generate certificates. Instead import the certificates to the keystore.
		`. <domainHome>/bin/setDomainEnv.sh`
		`cd <domainHome>/config`
		`generate-pki-certificate-keystore-for-osb.sh`

6. [PolicyB] Copy app server certificate(s)	Go to <wlsHome>/config of the **remote** edge app server and export the public key certificate. Copy the certificate file to < wlsHome >/config of the RSB server. The file name must be <remote-host>-certificate.der	Follow RSB Security Guide for instructions to export certificate

7. [PolicyB]
Import app server certificate(s)
	Import all the edge app server public key certificates to RSB server's key store. If the edge apps are deployed in different servers, import all the certificates to the keystore (To be done in the RSB server)	`cd <domainHome>/config`
		`import-remote-server-public-key-certificate-into-keystore.sh <app> <remote-host>`
		
		e.g.,
		`import-remote-server-public-key-certificate-into-keystore.sh cm <hostname>`

8. [PolicyB] Configure RSB Serve	Configure the RSB server to use the key store generate in the previous steps	`cd rsb-home/deployment-home/bin` `configure-rsb-app-server-for-security-policy-b.sh`
9. [PolicyB] Restart	Restart Admin and Managed Servers	
10. Deploy Decorator	Deploy all the decorators	`cd rsb-home/deployment-home/bin` `rsb-deployer.sh -deploy-all-rsb-service`
11. Deploy Injector	Deploy rib4oms injector service	`cd rsb-home/deployment-home/bin` `rsb-deployer.sh -deploy-rsb-service RibOmsToRsbOmsRouting-ServicesIntegrationFlow.jar`
12. Deploy admin app	Deploy RIC	`cd rsb-home/deployment-home/bin` `rsb-deployer.sh -deploy-admin-app`

13. [PolicyB] Export OSB certificate	Copy the script from integration-lib Export the certificate, so that it can be used by the service consumers. (To be done in the RSB server)	`cd <wlsHome>/config export-server-public-key-certificate-from-keystore.sh`
14. Restart	Restart all the servers (Admin + Managed servers)	

B

Appendix: How to Secure Application Service (including JSIT)

Depending on the security configuration chosen for each application (i.e., Policy A or Policy B) various security related configuration changes need to be made in the application side. This must be done prior to the installation of RSB. If the security on the application side is done after RSB installation, some of the steps of RSB deployment will have to redone after the security configuration change in the edge app server. The details steps on how to secure edge app services is given in the RSB Security guide.

Note: For more information, see *RSB Security Guide*.

C

Appendix: Installation Order

This section provides a guideline for the order in which the Oracle Retail applications should be installed. If a retailer has chosen to use only some of the applications, the order is still valid, less the applications not being installed.

Note: The installation order is not meant to imply integration between products.

Enterprise Installation Order

1. Oracle Retail Merchandising System (RMS), Oracle Retail Trade Management (RTM)
2. Oracle Retail Sales Audit (ReSA)
3. Oracle Retail Extract, Transform, Load (RETL)
4. Oracle Retail Active Retail Intelligence (ARI)
5. Oracle Retail Warehouse Management System (RWMS)
6. Oracle Retail Invoice Matching (ReIM)
7. Oracle Retail Price Management (RPM)

Note: During installation of RPM, you are asked for the RIBforRPM provider URL. Since RIB is installed after RPM, make a note of the URL you enter. If you need to change the RIBforRPM provider URL after you install RIB, you can do so by editing the remote_service_locator_info_ribserver.xml file.

8. Oracle Retail Allocation
9. Oracle Retail Central Office (ORCO)
10. Oracle Retail Returns Management (ORRM)
11. Oracle Retail Back Office (ORBO)
12. Oracle Retail Store Inventory Management (SIM)

Note: During installation of SIM, you are asked for the RIB provider URL. Since RIB is installed after SIM, make a note of the URL you enter. If you need to change the RIB provider URL after you install RIB, you can do so by editing the remote_service_locator_info_ribserver.xml file.

13. Oracle Retail Predictive Application Server (RPAS)
14. Oracle Retail Demand Forecasting (RDF)
15. Oracle Retail Category Management (RCM)
16. Oracle Retail Replenishment Optimization (RO)
17. Oracle Retail Analytic Parameter Calculator Replenishment Optimization (APC-RO)
18. Oracle Retail Regular Price Optimization (RPO)
19. Oracle Retail Merchandise Financial Planning (MFP)
20. Oracle Retail Size Profile Optimization (SPO)
21. Oracle Retail Assortment Planning (AP)
22. Oracle Retail Item Planning (IP)
23. Oracle Retail Item Planning Configured for COE (IP COE)
24. Oracle Retail Advanced Inventory Planning (AIP)
25. Oracle Retail Analytics
26. Oracle Retail Advanced Science Engine (ORASE)
27. Oracle Retail Integration Bus (RIB)
28. Oracle Retail Service Backbone (RSB)
29. Oracle Retail Financial Integration (ORFI)
30. Oracle Retail Point-of-Service (ORPOS)
    - Oracle Retail Mobile Point-of-Service (ORMPOS) (requires ORPOS)
31. Oracle Retail Markdown Optimization (MDO)
32. Oracle Retail Clearance Optimization Engine (COE)
33. Oracle Retail Analytic Parameter Calculator for Markdown Optimization (APC-MDO)
34. Oracle Retail Analytic Parameter Calculator for Regular Price Optimization (APC-RPO)
35. Oracle Retail Macro Space Planning (MSP)

    The Oracle Retail Enterprise suite includes Macro Space Planning. This can be installed independently of and does not affect the installation order of the other applications in the suite. If Macro Space Planning is installed, the installation order for its component parts is:

    - Oracle Retail Macro Space Management (MSM)
    - Oracle Retail In-Store Space Collaboration (ISSC) (requires MSM)
    - Oracle Retail Mobile In-Store Space Collaboration (requires MSM and ISSC)