

SOA Suite Setup for BPEL Process Flow
Oracle FLEXCUBE Universal Banking
Release 12.5.0.0.0
[September] [2017]



Table of Contents

- 1. PREFACE 1-1**
 - 1.1 BACKGROUND 1-1
 - 1.2 AUDIENCE 1-1
 - 1.3 ORGANIZATION 1-1
 - 1.4 ACRONYMS AND ABBREVIATIONS 1-1

- 2. INSTALLING THE JDK, WEBLOGIC, RCU, SOA AND DOMAIN CREATION.....2**
 - 2.1 INTRODUCTION2
 - 2.2 LIST OF DOWNLOADED FILES2
 - 2.3 INSTALL JDK.....3
 - 2.4 INSTALLING WEBLOGIC SERVER SOFTWARE.....3
 - 2.5 INSTALLING ORACLE FUSION MIDDLEWARE 12C SOFTWARE.10
 - 2.6 CREATING PRODUCT SCHEMAS IN ORACLE DATABASE16
 - 2.7 WEBLOGIC SERVER DOMAIN CONFIGURATION.....24
 - 2.8 REMOTE SETUP CONFIGURATION:33

1. Preface

1.1 Background

This document provides an overview of configuring SOA suite for Oracle FLEXCUBE Universal Banking BPEL process deployment.

Refer to the Oracle documentation for HA and other configuration patterns.

1.2 Audience

The audience for this document will be the development groups of BPEL/BPM process flows FLEXCUBE Universal Banking.

1.3 Organization

This manual is organized as follows:

- The document helps in download and installation of Oracle SOA 12c.

1.4 Acronyms and Abbreviations

Acronym/Abbreviation	Description
BPEL	Business Process Execution Language
HA	High Availability

2. Installing the JDK, WebLogic, RCU, SOA and domain Creation

2.1 Introduction

The download of software can be done from the oracle edelivery portal

<https://edelivery.oracle.com>

Refer to the Oracle certification matrix for qualified databases.

2.2 List of downloaded files

Latest Oracle JDK 8 Update for Linux x86-64

Search: Oracle Fusion Middleware 12c Infrastructure 12.2.1(**WebLogic Installation**)

V78156-01.zip– Oracle Fusion Middleware 12c (12.2.1) Infrastructure

Search: Oracle Business Process Management 12.2.1.0.0(**BPM/BPEL**)

V78169-01.zip– Oracle Fusion Middleware 12c (12.2.1.0.0) SOA Suite and Business Process Management

List of platform which can be selected based on the installation platform

<input type="checkbox"/>	HP-UX Itanium
<input type="checkbox"/>	IBM AIX on POWER Systems (64-bit)
<input type="checkbox"/>	IBM z/OS on System z
<input type="checkbox"/>	IBM: Linux on System z
<input type="checkbox"/>	Linux x86-64
<input type="checkbox"/>	Microsoft Windows (32-bit)
<input type="checkbox"/>	Microsoft Windows x64 (64-bit)
<input type="checkbox"/>	Oracle Solaris on SPARC (32-bit)
<input type="checkbox"/>	Oracle Solaris on SPARC (64-bit)
<input type="checkbox"/>	Oracle Solaris on x86-64 (64-bit)

Select

Cancel

Search by

Download Queue <input type="button" value="Continue"/>	
Selected Item	Platform
Release: Oracle SOA Suite 12.2.1.0.0	Linux x86-64
Release: Oracle Business Process Management 12.2.1.0.0	Linux x86-64

NOTE (Doc ID 1904280.1): As part of the new Release of SOA 12c, you need to get WebLogic 12c through the Oracle Fusion Middleware Infrastructure installation, which contains all required components for SOA. The standard WebLogic 12.2.1.0.0 Installer i.e. fmw_12.2.1.0.0_wls.jar, does not have the required JRF templates.

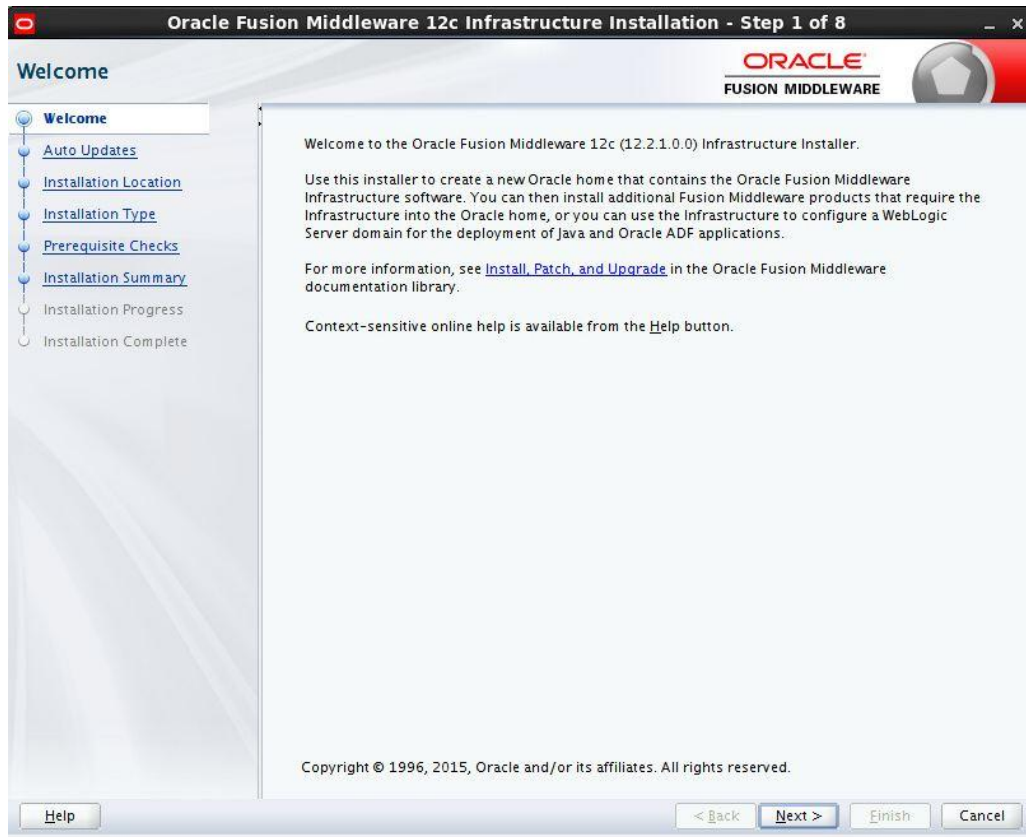
2.3 Install JDK.

Login to WebLogic server host upload and install JDK package. Refer to the release certificate for the version of java JDK.

2.4 Installing WebLogic Server software

```
[oracle@wls12c-node1 ~]$ cd /scratch/app/fmwTemp1221/
[oracle@wls12c-node1 fmwTemp1221]$ unzip V78156-01.zip
Archive:  V78156-01.zip
inflating: fmw_12.2.1_infrastructure.jar
[oracle@wls12c-node1 fmwTemp1221]$ java -jar fmw_12.2.1_infrastructure.jar
```

Step 1:



Step 2 :

Option need to be selected based on the requirement :

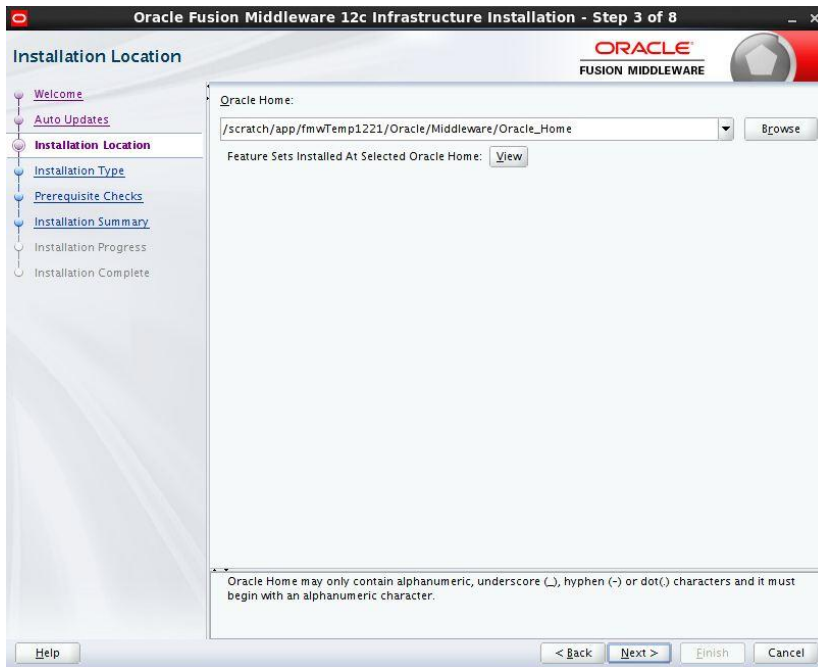
If you don't want the auto updates, select the first option.

If you are applying patches , select the second option.

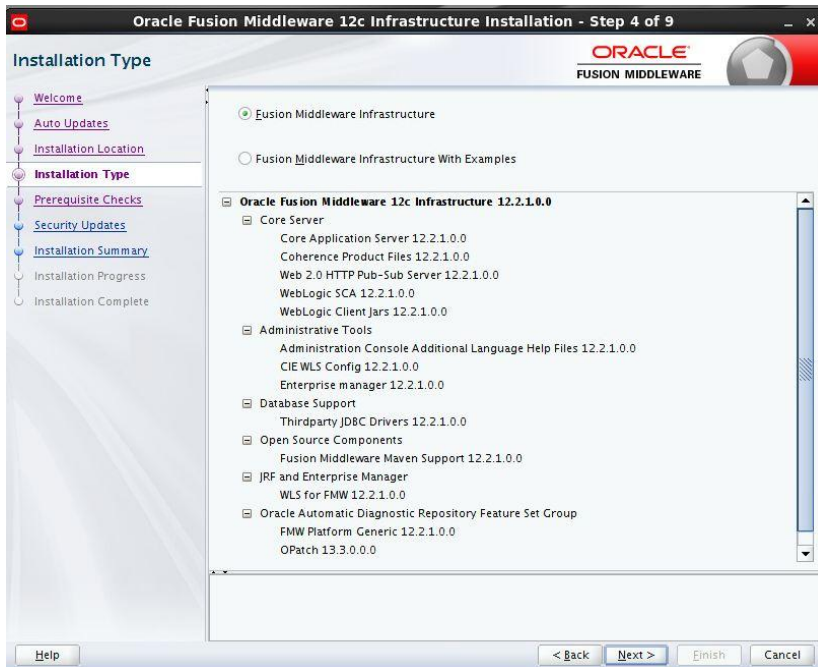
Please select the option based on the requirement :

The screenshot shows the 'Auto Updates' configuration window in the Oracle Fusion Middleware 12c Infrastructure Installation wizard. The window title is 'Oracle Fusion Middleware 12c Infrastructure Installation - Step 2 of 8'. The Oracle logo and 'FUSION MIDDLEWARE' text are visible in the top right corner. On the left, a navigation pane shows the installation steps: Welcome, Auto Updates (selected), Installation Location, Installation Type, Prerequisite Checks, Installation Summary, Installation Progress, and Installation Complete. The main area contains three radio button options: 'Skip Auto Updates' (selected), 'Select patches from directory', and 'Search My Oracle Support for Updates'. The 'Select patches from directory' option includes a 'Location' text box and a 'Browse' button. The 'Search My Oracle Support for Updates' option includes 'Username' and 'Password' text boxes, 'Proxy Settings' and 'Test Connection' buttons, and a 'Search' button. A large empty text area is located below the search button. At the bottom of the window, there are 'Help', '< Back', 'Next >', 'Finish', and 'Cancel' buttons.

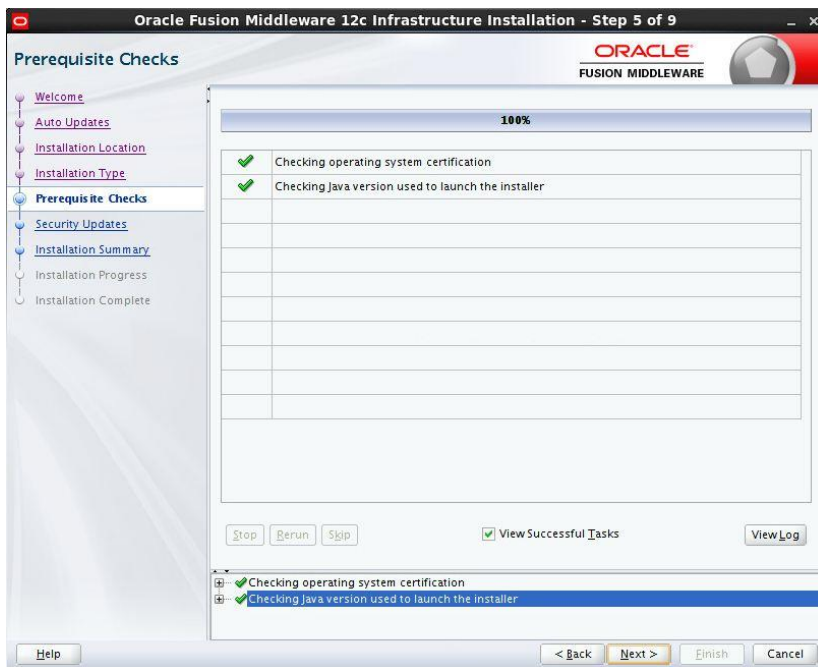
Step 3: Define the oracle home path



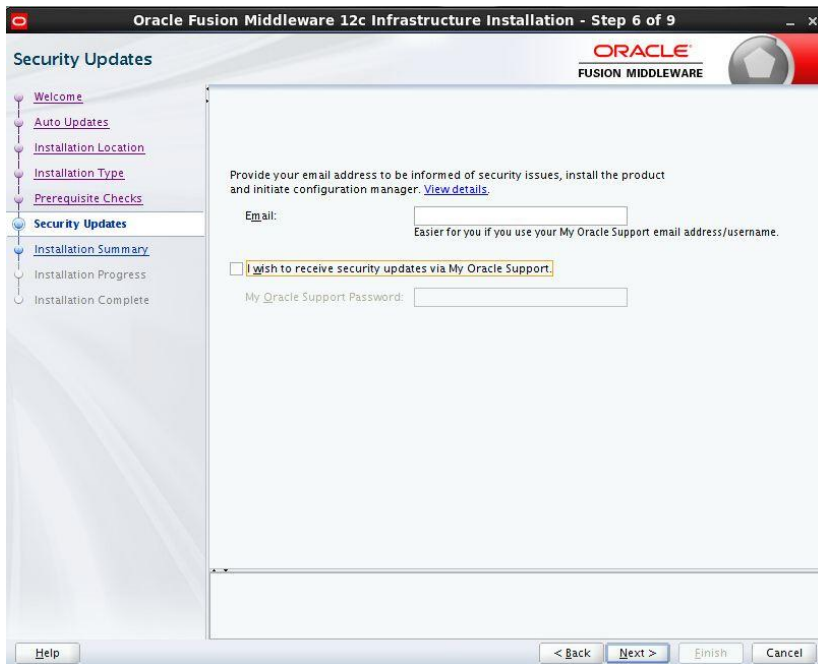
Step 4: select fusion middleware infrastructure



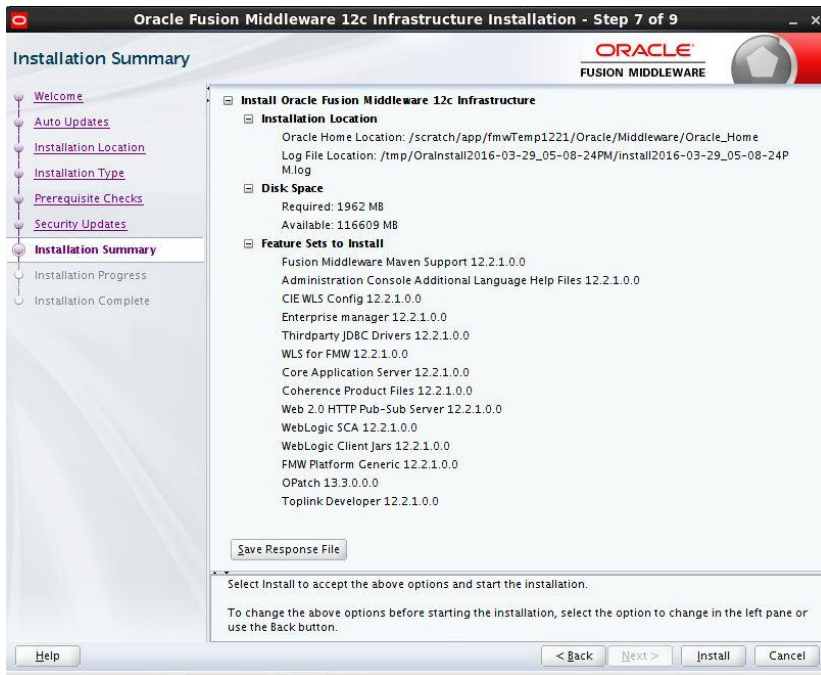
Step 5:



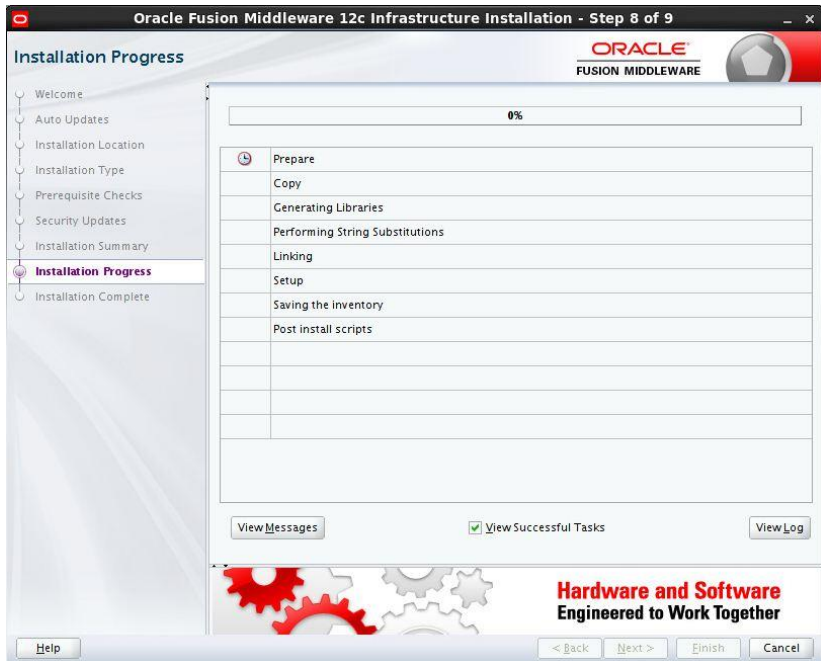
Step 6: optional based on installation requirement



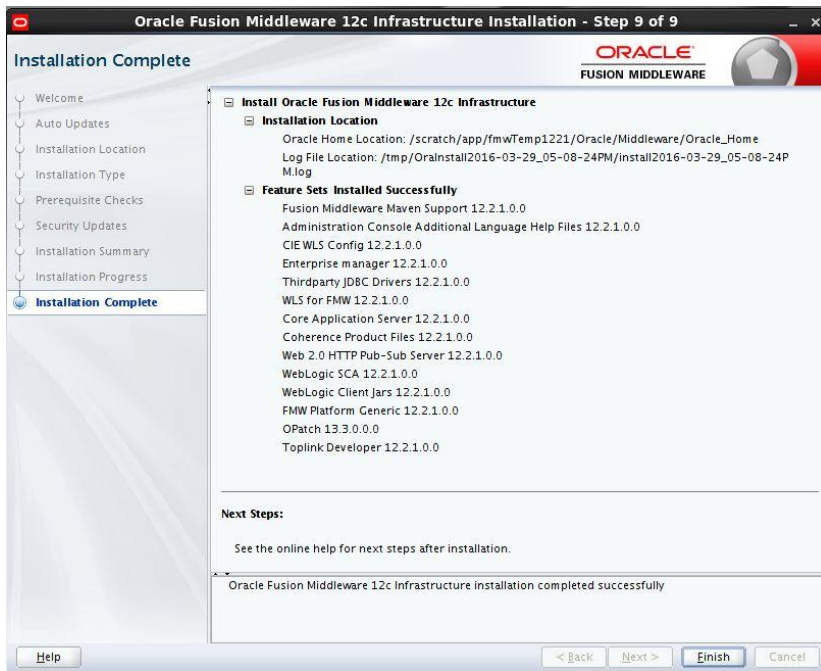
Step 7:



Step 8:



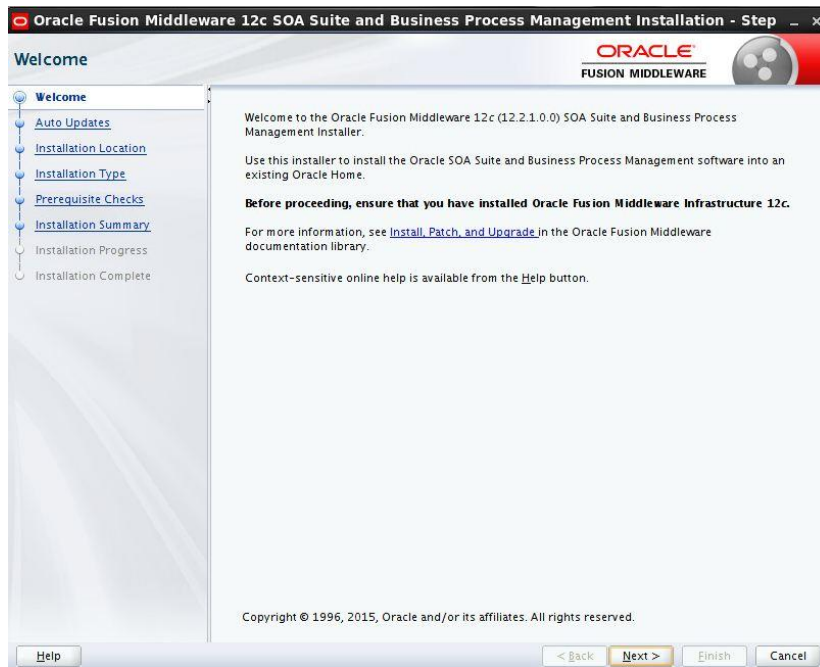
Step 9:



2.5 Installing Oracle Fusion Middleware 12c software.

```
[oracle@wls12c-node1 ~]$ cd /scratch/app/fmwTemp1221/  
[oracle@wls12c-node1 fmwTemp1221]$ unzip V78169-01.zip  
Archive:  V78169-01.zip  
  inflating: fmw 12.2.1.0.0  soa.jar  
  
[oracle@wls12c-node1 fmwTemp1221]$ java -jar fmw_12.2.1_soa.jar
```

Step 1:

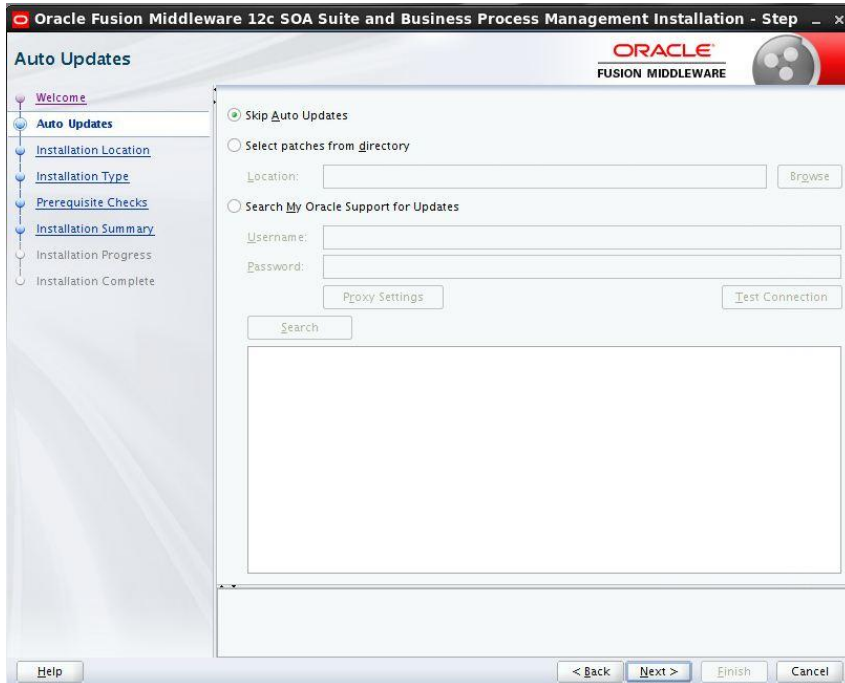


Step 2:

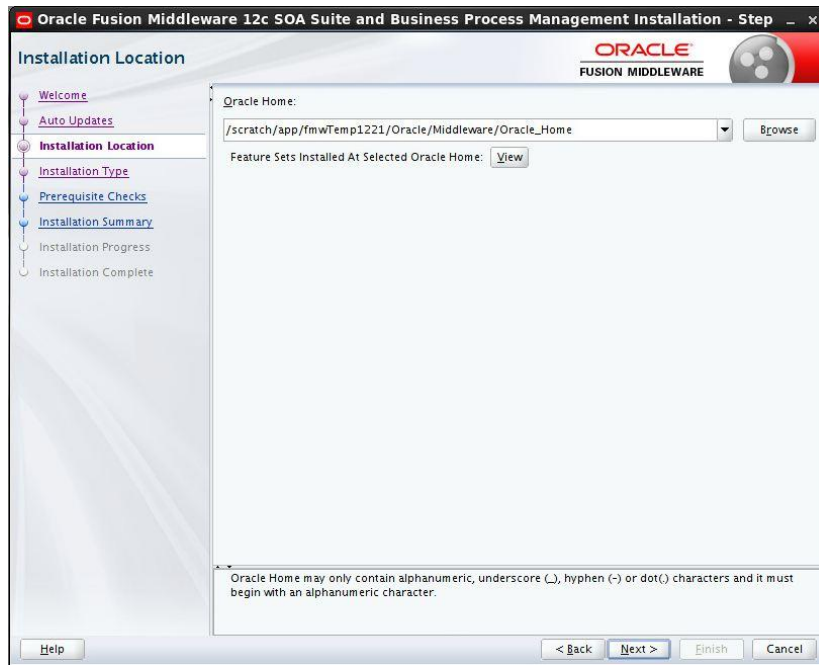
Option need to be selected based on the requirement :


- a) If you don't want the auto updates, select the first option.
- b) If you are applying patches , select the second option .

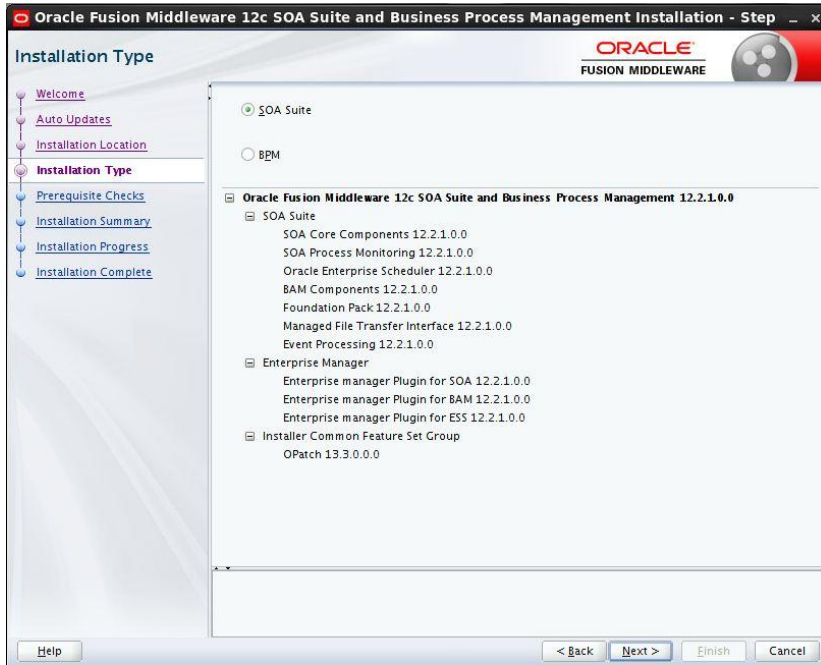
Please select the below option based on the requirement:



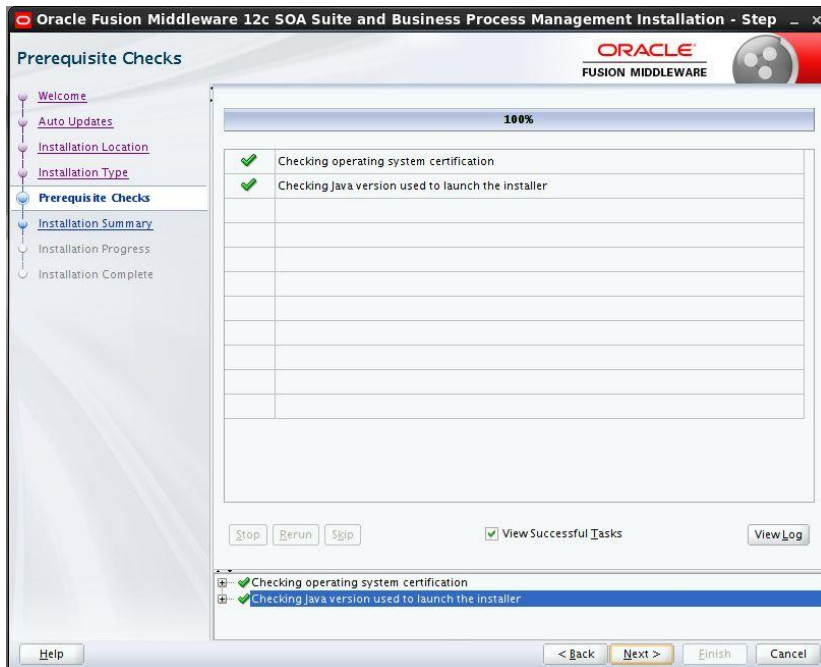
Step 3:



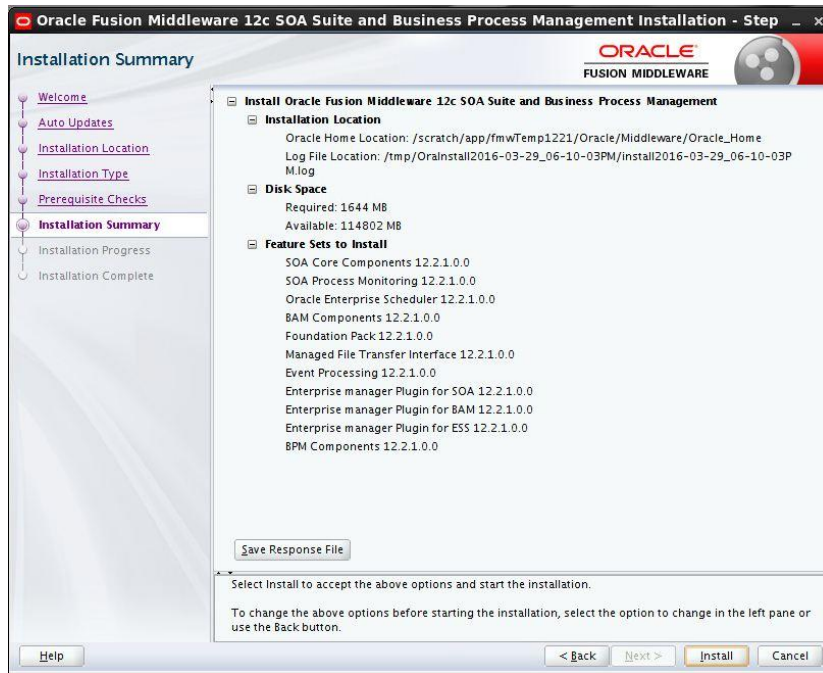
Step 4:  Please select BPM if the environment requires BPM process flow deployment



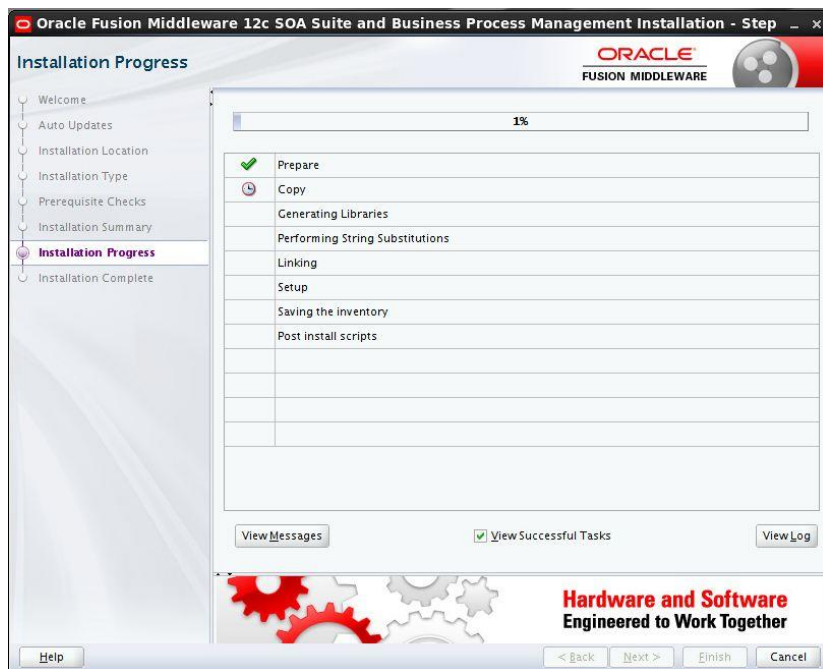
Step 5:



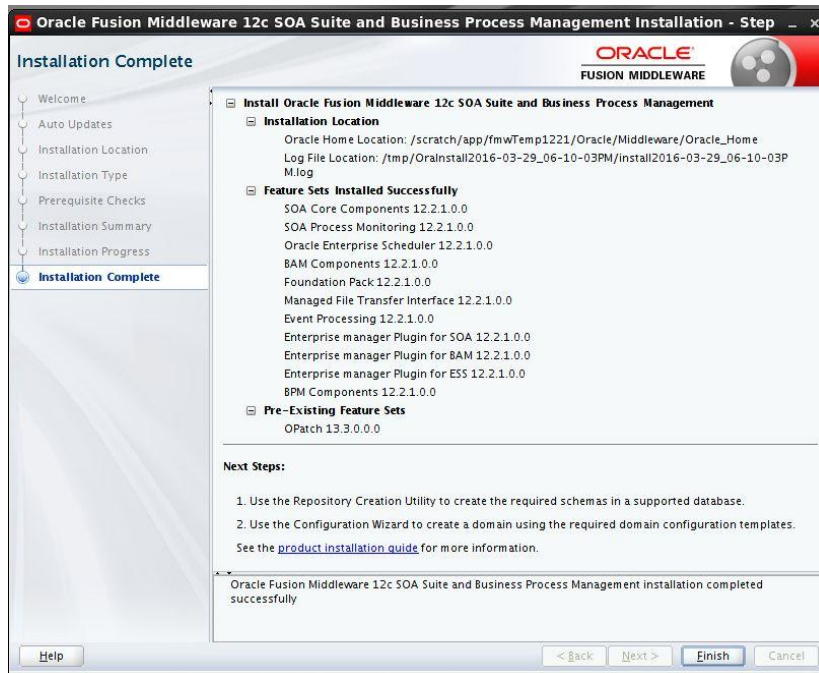
Step 6:



Step 7:



Step 8:



2.6 Creating product schemas in Oracle database

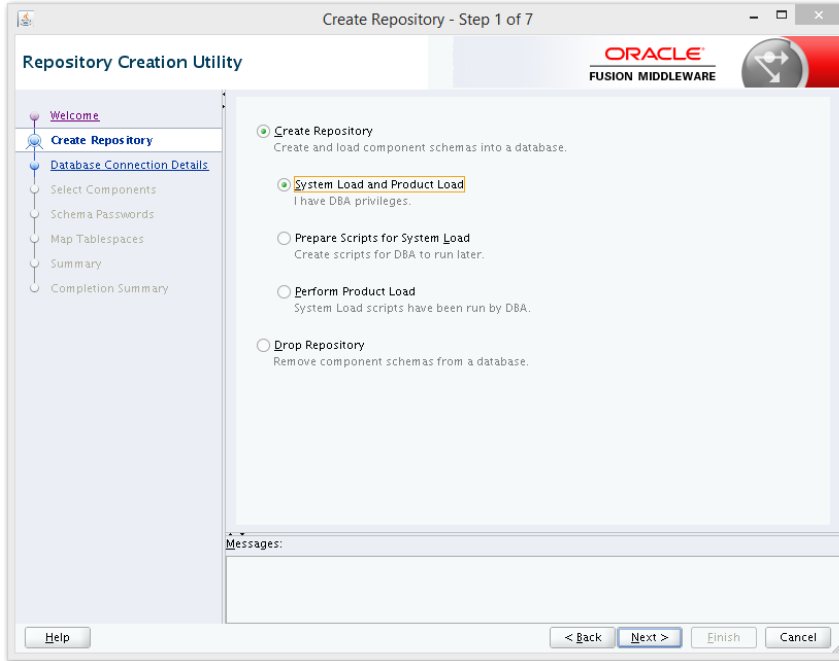
The Repository Creation Utility (RCU) is the tool used to create schemas in a database. This tool is available once we've installed the Oracle Fusion Middleware Infrastructure software (Point 2).

Refer to [Oracle Fusion Middleware Creating Schemas with the Repository Creation Utility](#) for more information about the Repository Creation Utility.

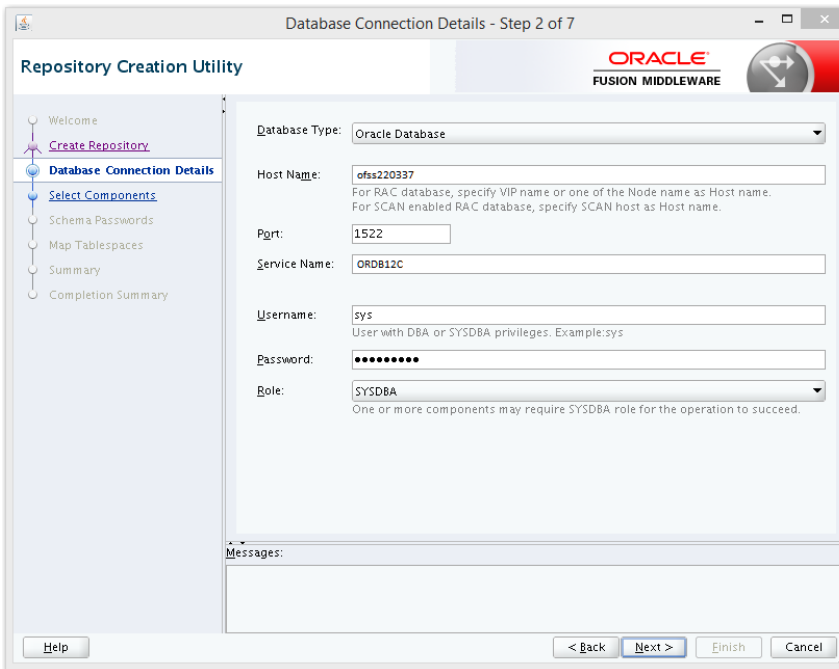
- [oracle@wls12c-node1 fmwTemp1221]\$ cd /scratch/app/fmwTemp1221/Oracle/Middleware/Oracle_Home/bin/
- [oracle@wls12c-node1 bin]\$./rcu

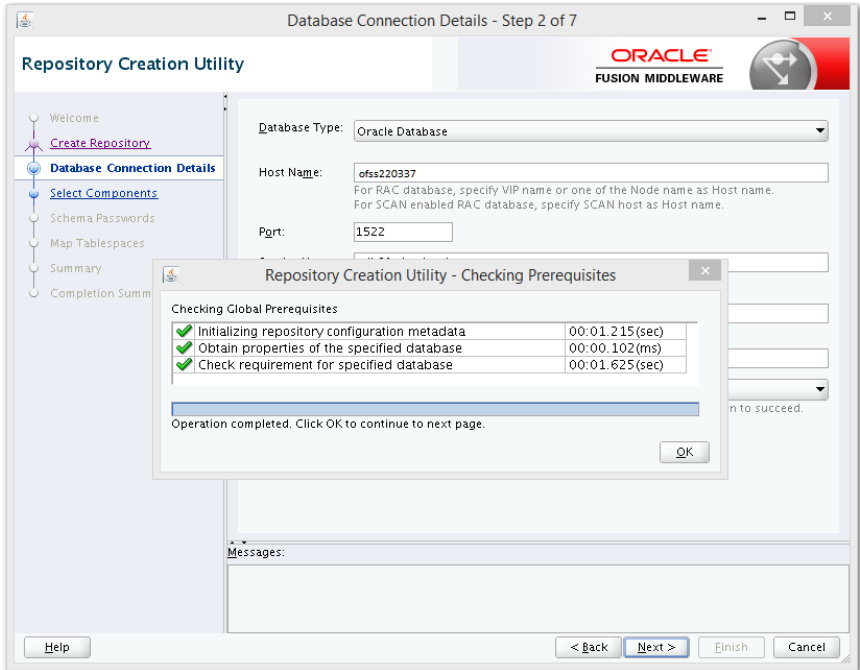
Step 1:



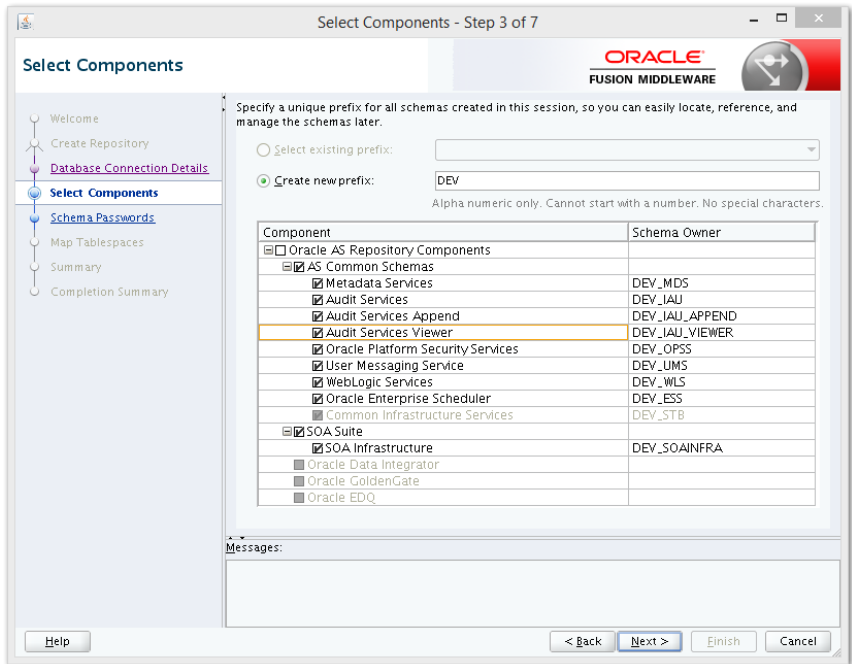


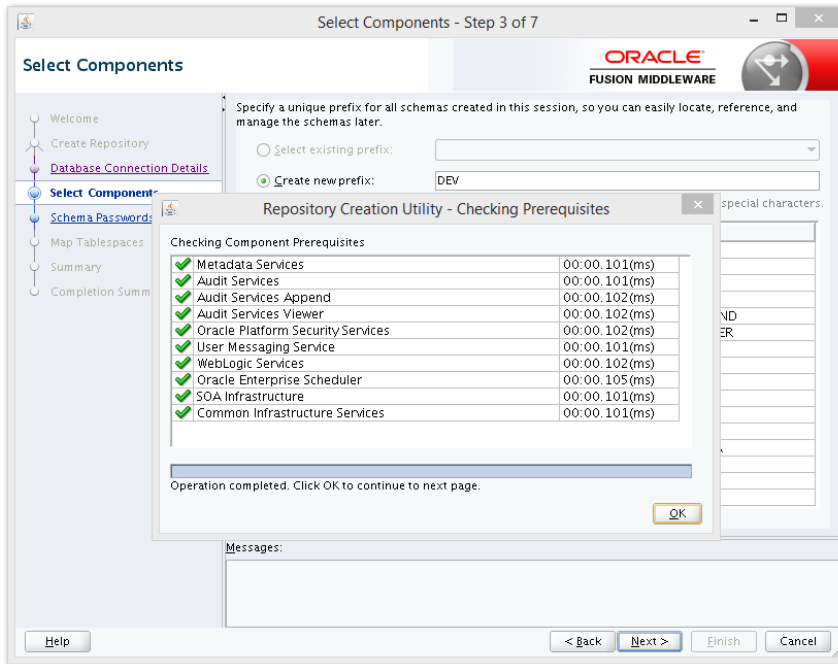
Step 2: Define the host name port username and password for creating the RCU schemas in the database. The sys user required to create the rcu schemas.



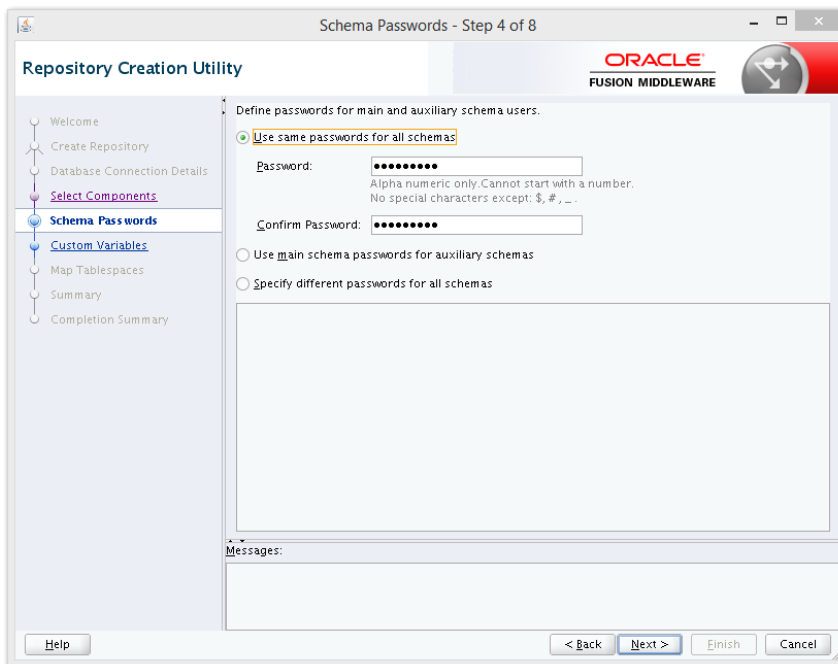


Step 3: Define the prefix to be used for the schemas




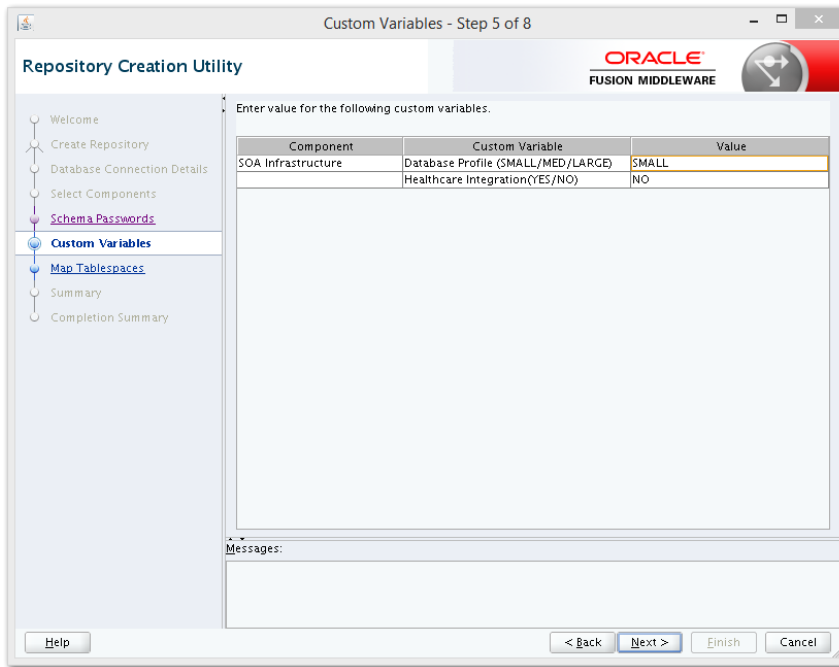


Step 4: Define the password for the schemas.

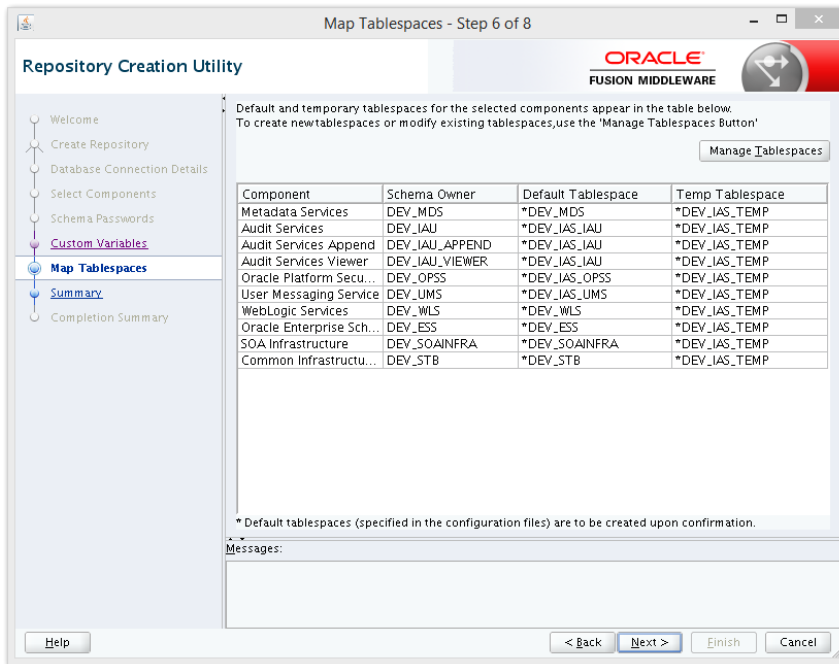


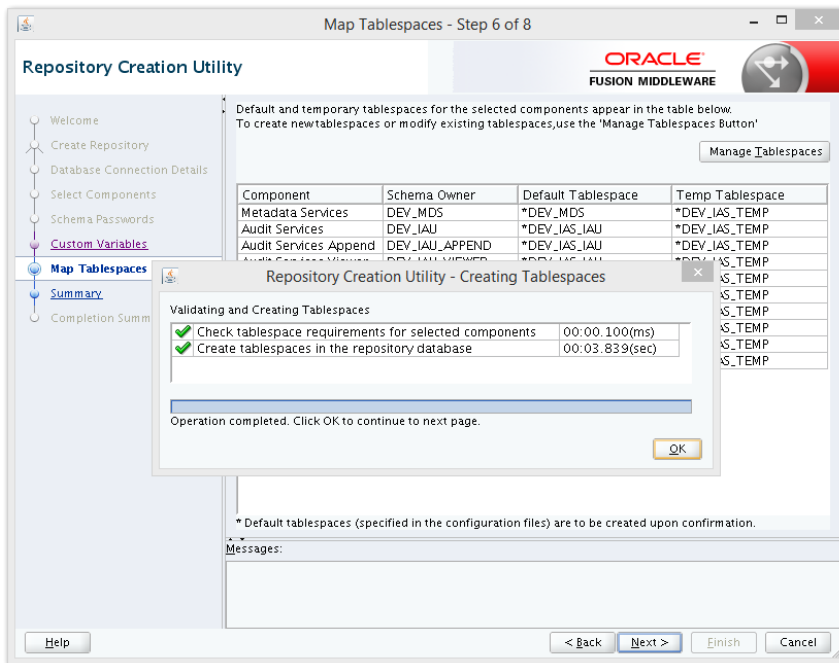
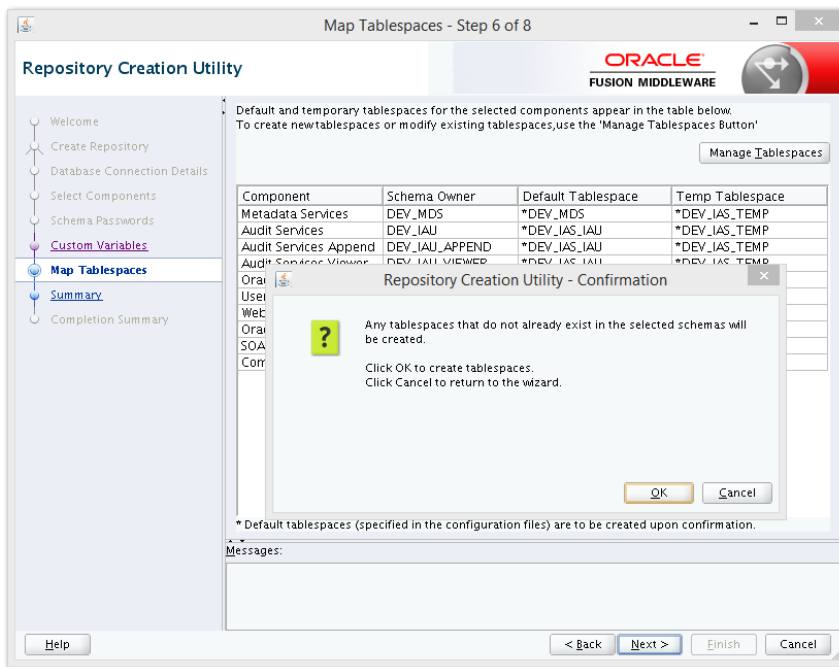
Note: It is important to remember the password or passwords that you enter during the process.

Step 5:  Please select the database profile based on requirement (SMALL/MED/LARGE)



Step 6:





Step 7:

Repository Creation Utility

ORACLE
FUSION MIDDLEWARE

Database details:

Host Name: zeus.zion.local
Port: 1522
Service Name: PDB01.ZION.LOCAL
Connected As: sys
Operation: System and Data Load concurrently
RCU Logfile: /u01/app/oracle/logdir.2014-07-17_22-48/rcu.log
Component Log Directory: /u01/app/oracle/logdir.2014-07-17_22-48
Execution Time: 2 minutes 55 seconds
View Log: [rcu.log](#)

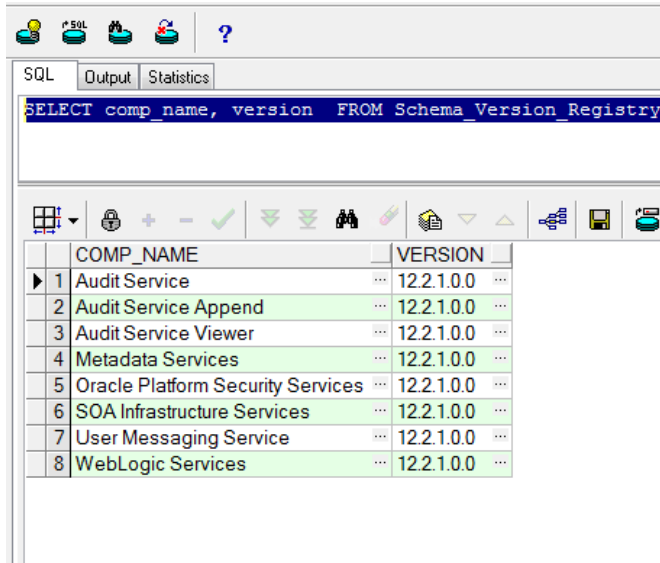
Prefix for (prefixable) Schema Owners:DEV

Component	Status	Time	Logfile(Click to view)
Metadata Services	Success	00:11.435(sec)	mds.log
Audit Services	Success	00:11.217(sec)	iau.log
Audit Services Append	Success	00:09.193(sec)	iau_append.log
Audit Services Viewer	Success	00:09.148(sec)	iau_viewer.log
Oracle Platform Security Services	Success	00:15.581(sec)	opss.log
User Messaging Service	Success	00:13.453(sec)	ucsums.log
WebLogic Services	Success	00:10.039(sec)	wls.log
Oracle Enterprise Scheduler	Success	00:13.767(sec)	ess.log
SOA Infrastructure	Success	00:59.186(sec)	soainfra.log
Common Infrastructure Services	Success	00:09.259(sec)	stb.log

Help < Back Next > Create Close

Note: Verifying Schema Version Numbers in the database where RCU is executed

```
SQL> select comp_name, version from schema_version_registry;
```

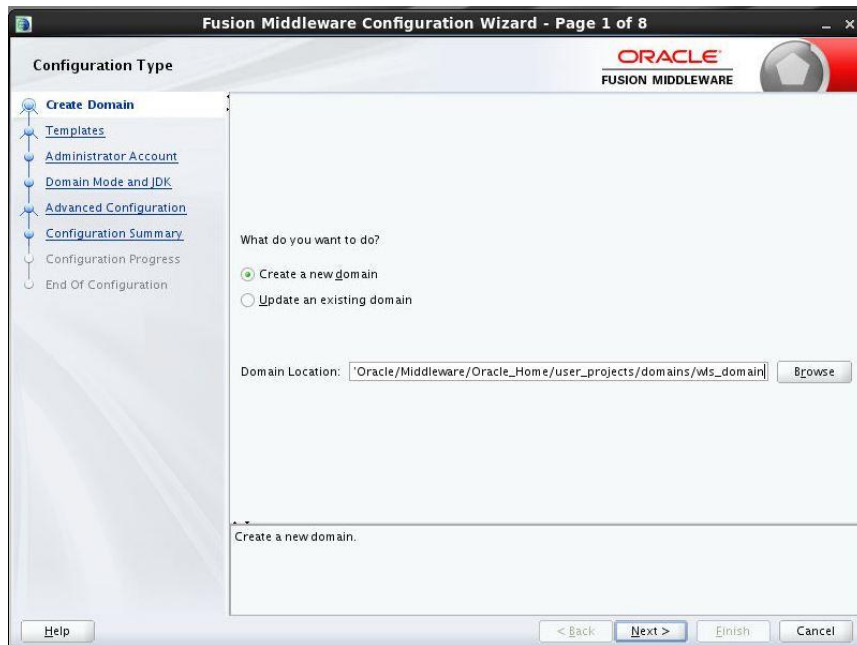


The screenshot shows the SQL Developer interface. The SQL editor contains the query: `SELECT comp_name, version FROM Schema_Version_Registry`. Below the editor, a toolbar with various icons is visible. The results pane displays a table with two columns: `COMP_NAME` and `VERSION`. The table contains eight rows of data, all with a version of `12.2.1.0.0`.


	COMP_NAME	VERSION
1	Audit Service	12.2.1.0.0
2	Audit Service Append	12.2.1.0.0
3	Audit Service Viewer	12.2.1.0.0
4	Metadata Services	12.2.1.0.0
5	Oracle Platform Security Services	12.2.1.0.0
6	SOA Infrastructure Services	12.2.1.0.0
7	User Messaging Service	12.2.1.0.0
8	WebLogic Services	12.2.1.0.0

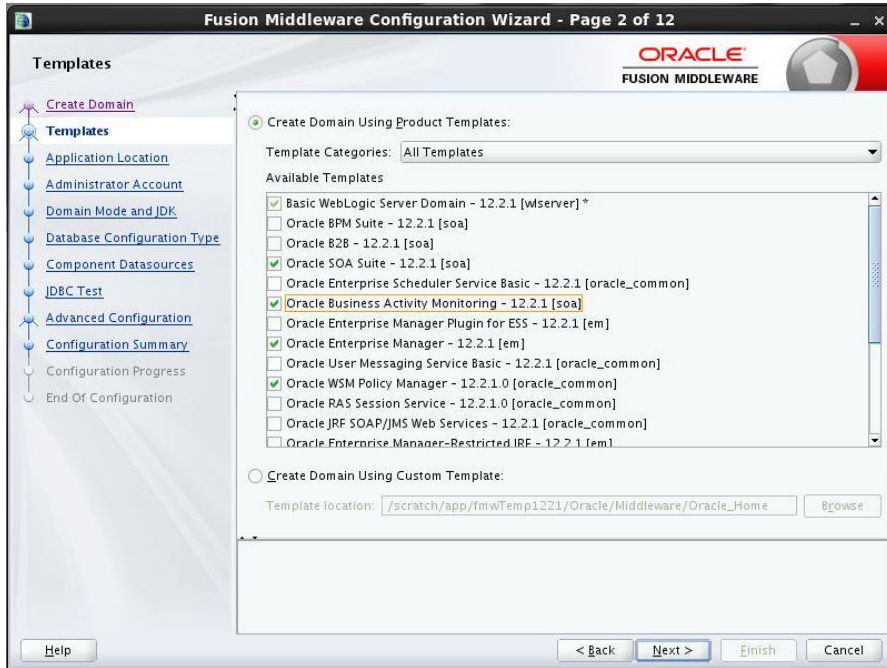
2.7 WebLogic Server Domain Configuration

Step 1:

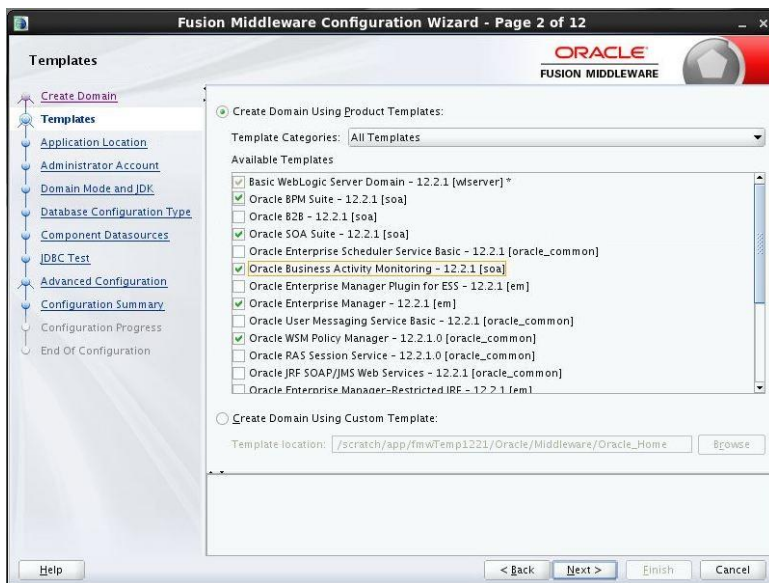


Step 2: Domain creation template

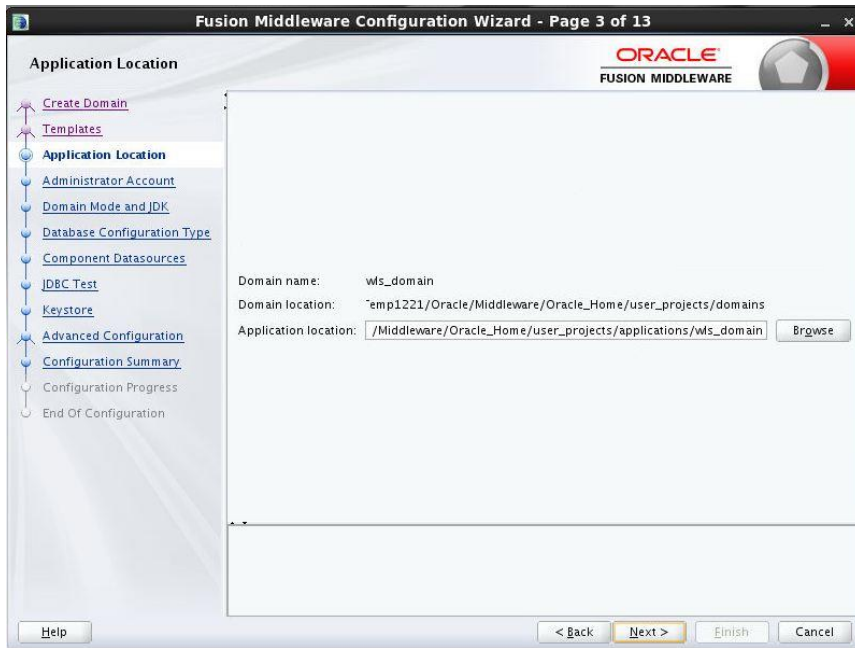
- a. For BPEL only domain
- b.  Based on the requirement select the Oracle Business Activity Monitoring (BAM) check box.



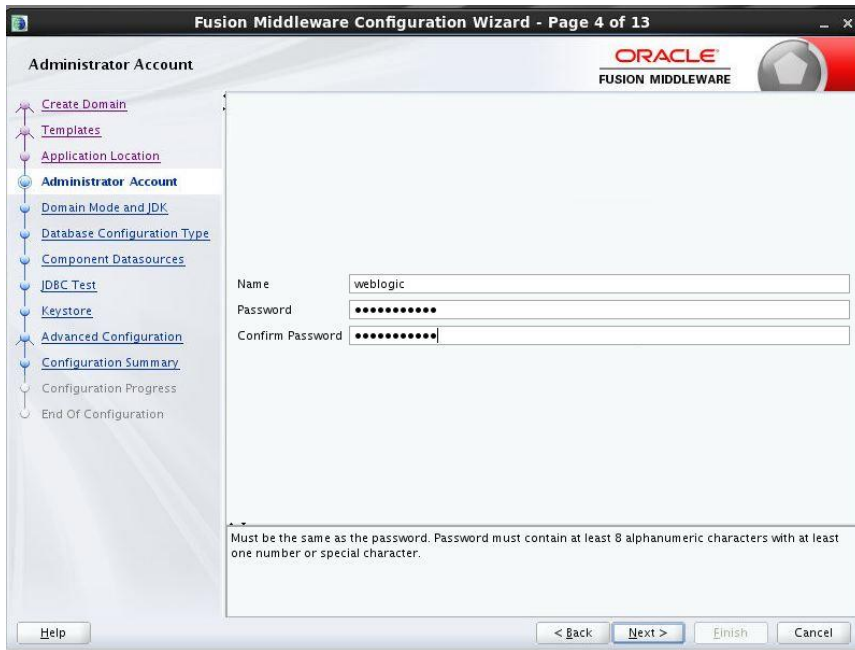
- c. For BPM enabled domain (If BPM process flows deployment is required then we have to select the Oracle BPM Suite – 12.2.1)




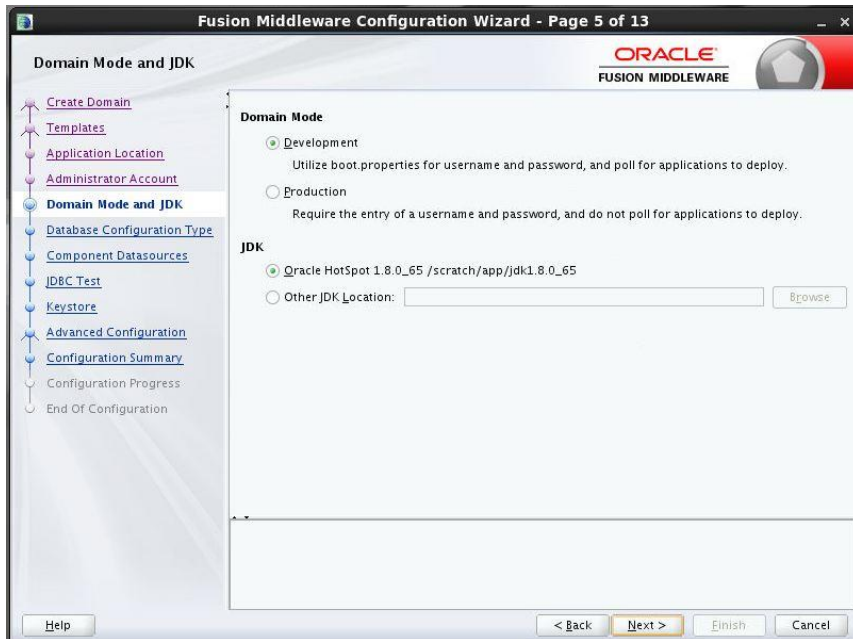
Step 3:



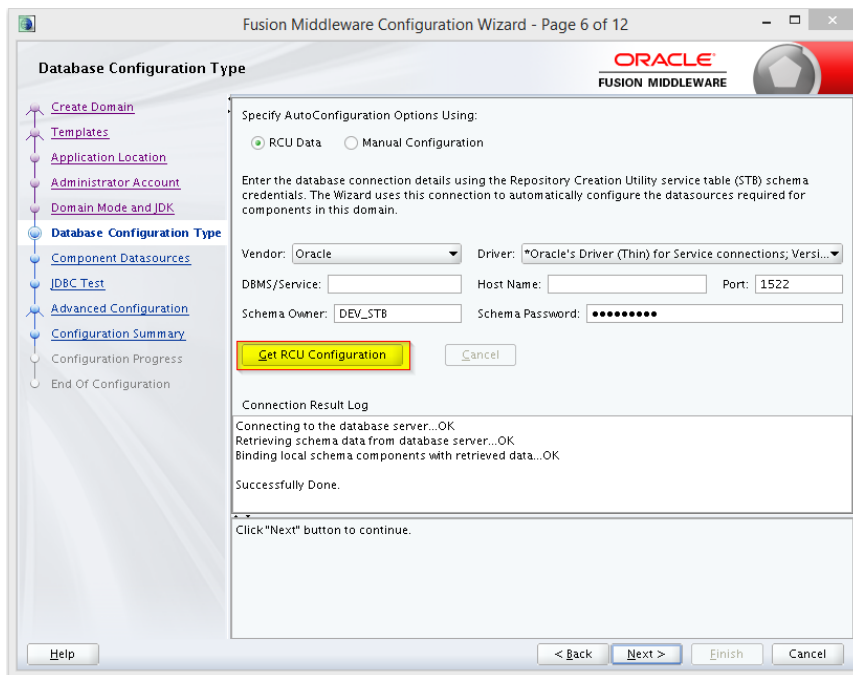
Step 4: Defining the domain user name and password



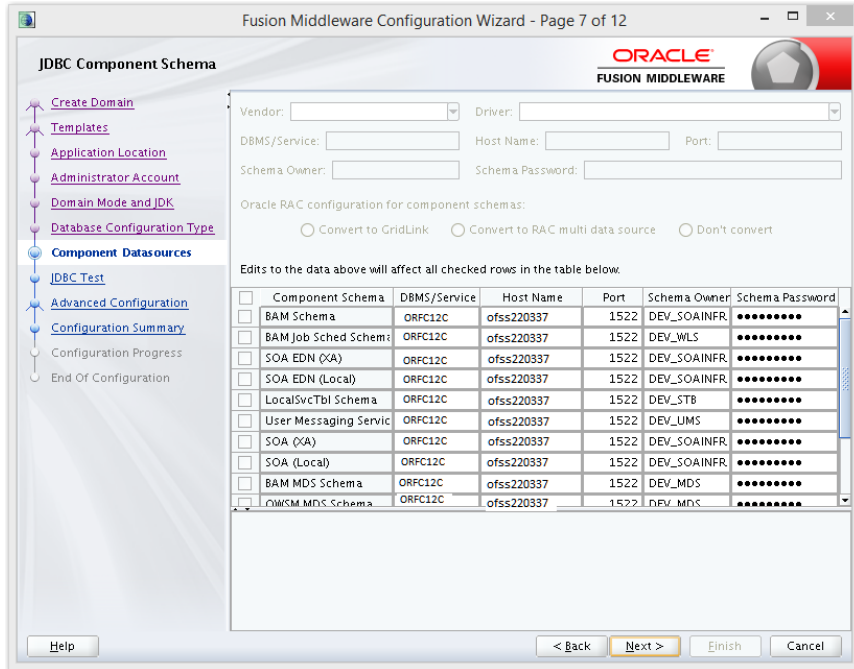
Step 5:  Domain mode needs to be production for all installations.



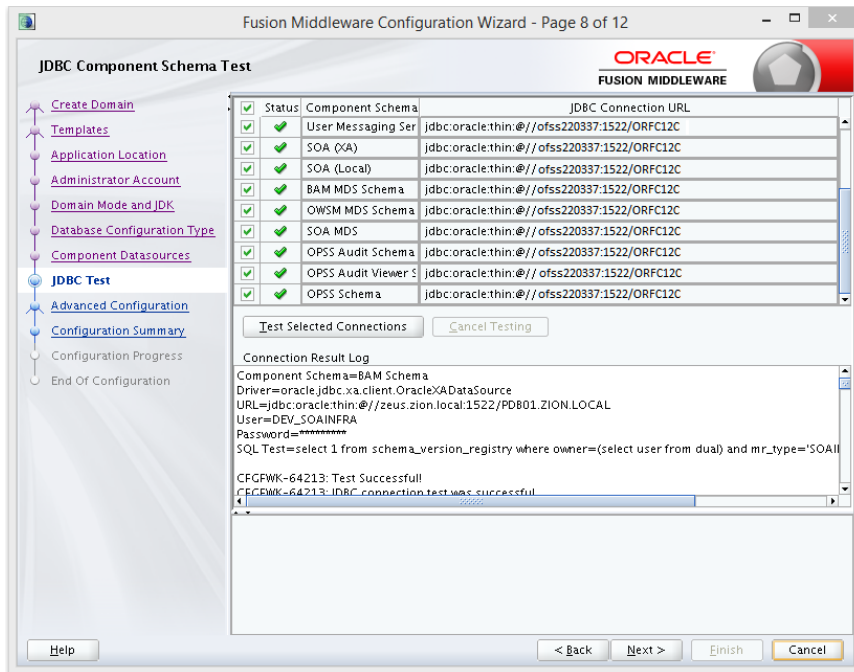
Step 6: Define the RCU schema details and the TNS connection details



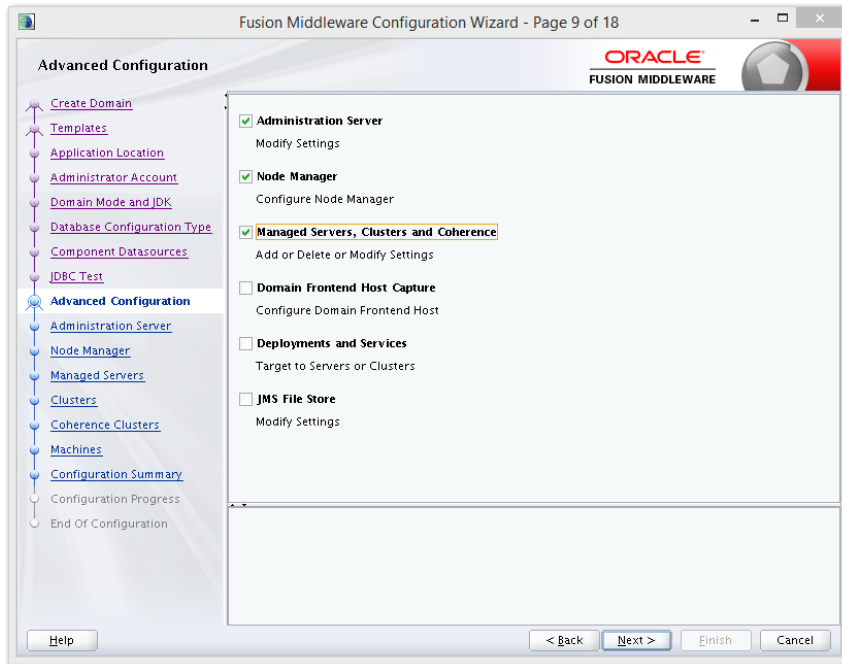
Step 7:



Step 8:

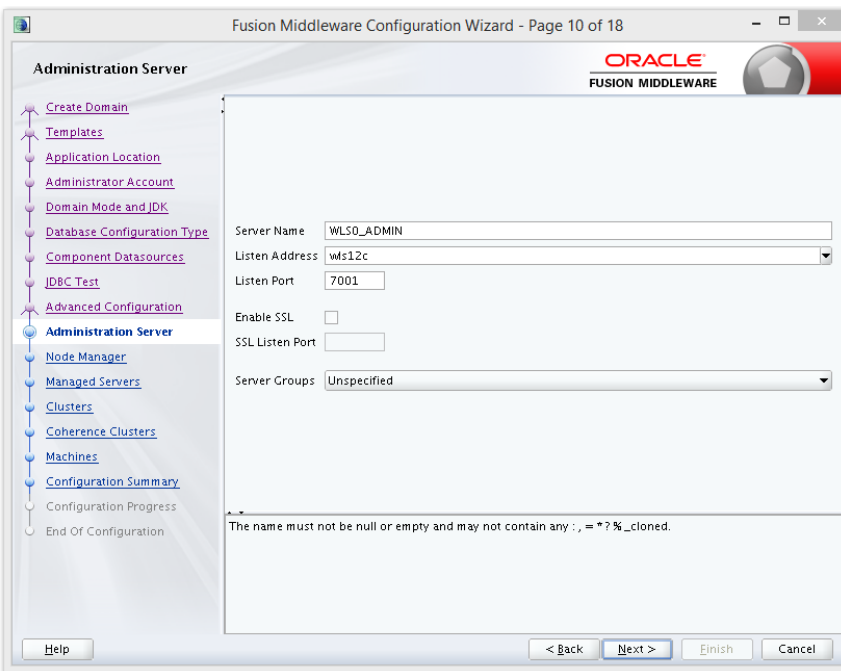


Step 9: Select the admin server, node manager and managed servers.



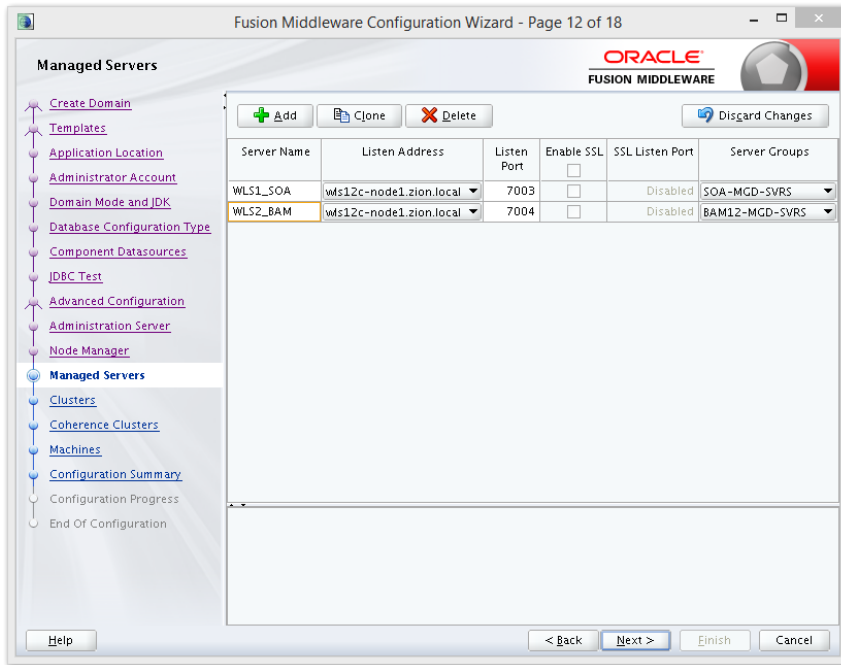
Step 10: Specify the server name as AdminServer and listener address as hostname. Based on the installation requirement SSL need to be enabled.

Based on the

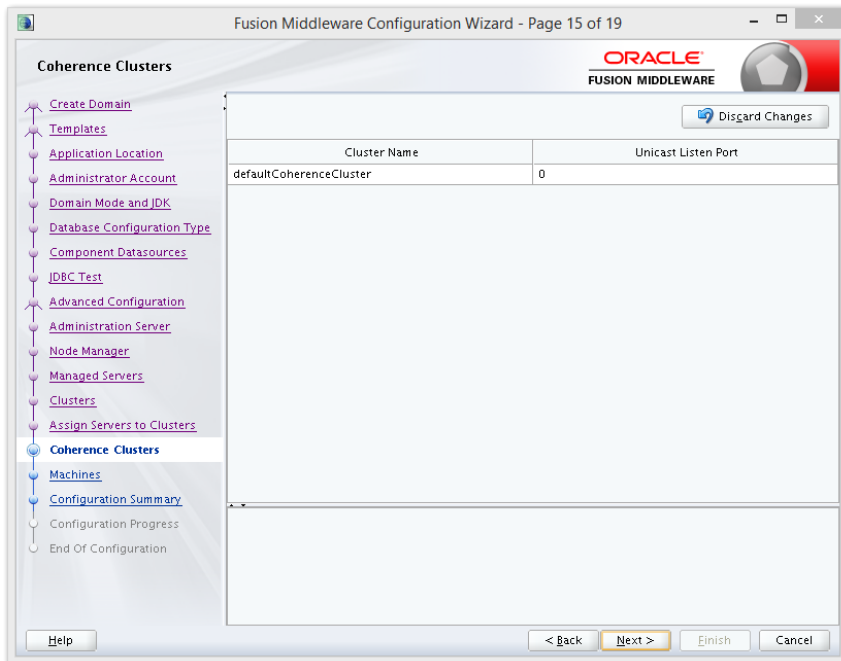


Step 11: specify the server name as soa_server1 and bam_server1 for the managed servers.

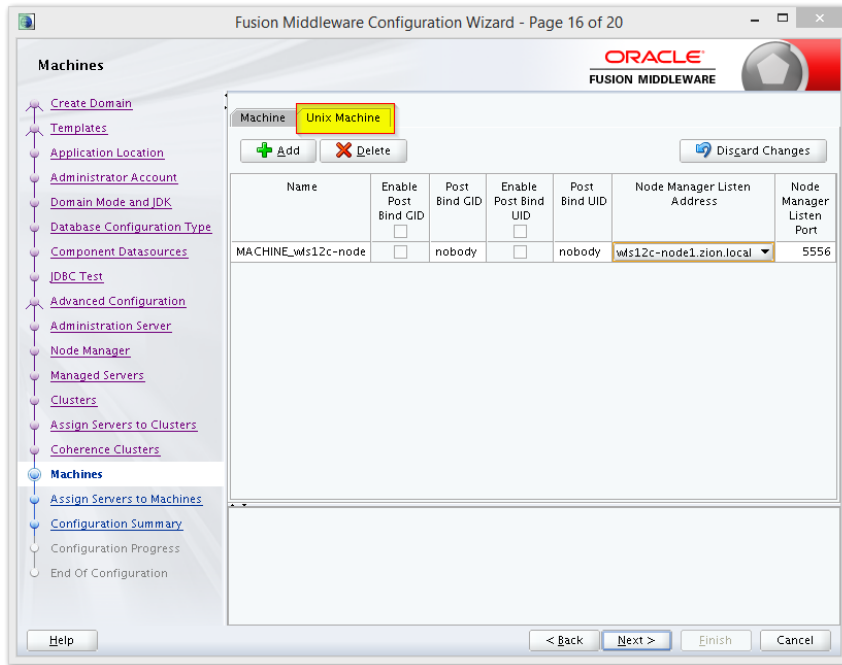
Based on the installation requirement SSL need to be enabled for managed servers



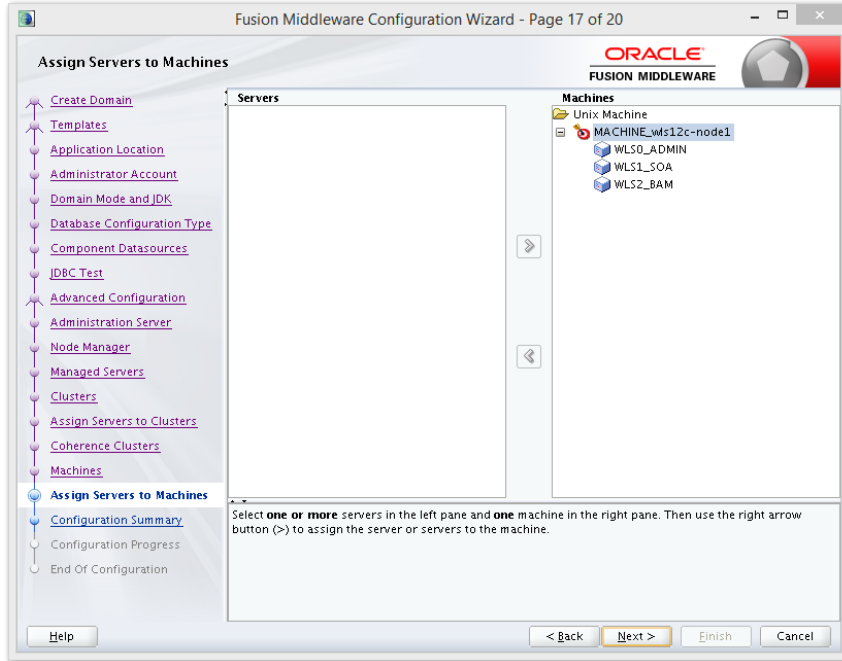
Step 12:



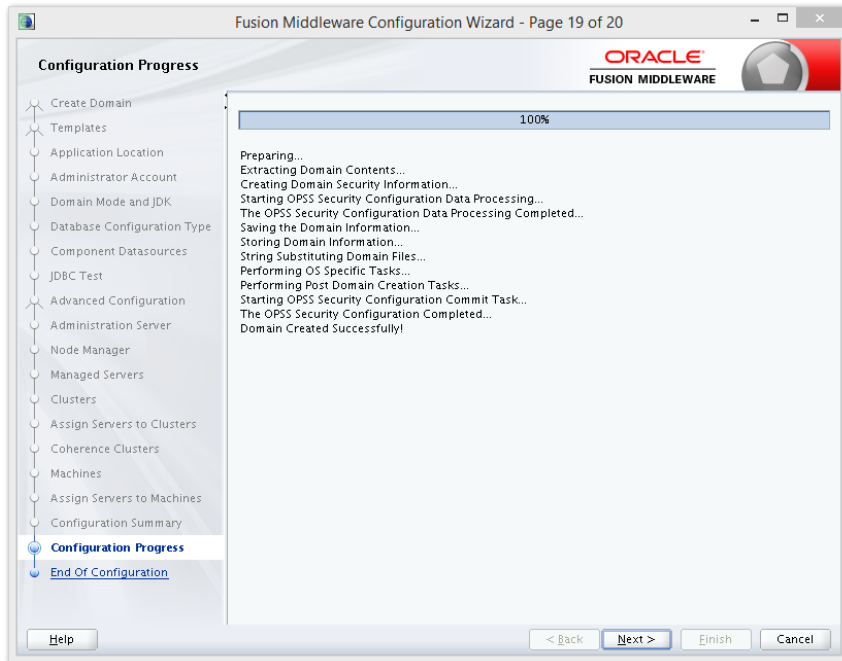
Step 13:

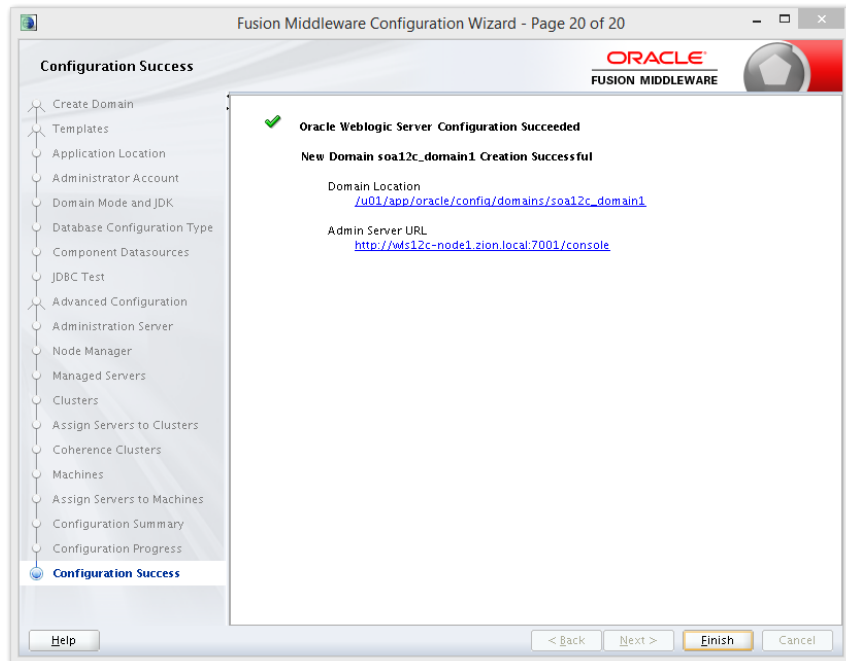


Step 14:



Step 15:





2.8 Remote Setup Configuration:

Remote setup means SOA is installed in different machine and EAR is running in different machine.

Configuring Flexcube Application to point to remote BPEL instances.

1. Following Jars has to be copied to <Weblogic_home>\<domain>\lib

Jar to be copied	Path where the jar is available in SOA Middleware
bpm-services.jar	%Middleware Home%/soa/soa/modules/oracle.soa.workflow_11.1.1
fabric-runtime.jar	%Middleware Home%/soa/soa/modules/oracle.soa.fabric_11.1.1
tracking-fabric.jar	
tracking-api.jar	

jrf-api.jar	%Middleware Home%/oracle_common/modules/oracle.jrf
orabpel-common.jar	%Middleware Home%/soa/soa/modules/oracle.soa.bpel_11.1.1
orabpel-thirdparty.jar	
orabpel.jar	
soa-infra-mgmt.jar	%Middleware Home%/soa/soa/modules/oracle.soa.mgmt_11.1.1
xml.jar	%Middleware Home%/oracle_common/modules/oracle.xdk
xmlparserv2.jar	
mdsrt.jar	%Middleware Home%/oracle_common/modules/oracle.mds
com.oracle.webservices.fmw.wsclient-rt-impl.jar	%Middleware Home%/oracle_common/modules

2. Additionally if BPMN enabled

Jar to be copied	Path where the jar is available in SOA Middleware
oracle.bpm.bpm-services.client.jar	%Middleware Home%/soa/soa/modules/oracle.bpm.client_11.1.1
oracle.bpm.bpm-services.interface.jar	
oracle.bpm.project.draw.jar	%Middleware Home%/soa/soa/modules/oracle.bpm.project_11.1.1
oracle.bpm.project.model.jar	
oracle.bpm.core.jar	%Middleware Home%/soa/soa/modules/oracle.bpm.runtime_11.1.1
oracle.bpm.ui.jar	%Middleware Home%/soa/soa/modules/oracle.bpm.workspace_11.1.1
oracle.bpm.casemgmt.interface.jar	%Middleware Home%/soa/soa/modules/oracle.bpm.runtime_11.1.1

3. The jars copied have to be from same soa-suite version where BPEL processflows deployed. Ie, We cannot have jars from soa12.1.3.0.0 and BPEL deployed in soa12.2.1.0.0 It should be consistent.

4. The properties file **fcubs.properties** should read as below

```

WORKFLOW_CLIENT_TYPE =REMOTE
java.naming.provider.url      =t3://10.184.74.143:8001/?partitionName=DOMAIN (Remote soa server provider url)
java.naming.security.principal =weblogic (Remote bpel server userid)
java.naming.security.credentials=RF2MRTP/MG8TB1T5QG6lnQ== (Remote soa server password)
dedicated.connection          =true
domain.name                   =default (Remote soa server partition)
domain.pwd                    =RF2MRTP/MG8TB1T5QG6lnQ==
(Remote soa server password)

```

5. Configure domain password same as for both fcj ear domain and remote BPEL domain and DowngradeUntrusted Principals has to be checked

The screenshot displays the WLS Console Security configuration page for the domain 'base_kernel1132'. The page is titled 'Security - base_kernel1132 - WLS Console - Mozilla Firefox'. The browser address bar shows the URL: `http://110.184.74.143:7389/console/console.portal?_nfpb=true&_pageLabel=DomainSecuritygeneralTabPage@SecurityDomainDomainConfigGeneralPortlet&handl...`. The page content is organized into a table of configuration items under the 'Advanced' tab.

Property Name	Value	Description
Security Interoperability Mode	default	Specifies the security mode of the communication channel used for XA calls between servers that participate in a global transaction. All server instances in a domain must have the same security mode setting. More Info...
Credential	The credential for this WebLogic Server domain. When a domain is created, a unique credential is generated for the domain. If you want to establish trust between two or more domains, decide on a credential that will be shared by the domains, then specify it here and in the other domains. More Info...
Confirm Credential	
NodeManager Username	weblogic	The user name that the Administration Server uses to communicate with Node Manager when starting, stopping, or restarting Managed Servers. More Info...
NodeManager Password	The password that the Administration Server uses to communicate with Node Manager when starting, stopping, or restarting Managed Servers. More Info...
Confirm NodeManager Password	
Web App Files Case Insensitive	false	Specifies the case sensitive URL-pattern matching behavior for security-constraints, servlets, filters, virtual-hosts, etc. in the webapp container and external security policies. The valid values are <code>os</code> , <code>true</code> , or <code>false</code> . More Info...
<input checked="" type="checkbox"/> Enforce Strict URL Pattern		Specifies whether the system should enforce strict URL pattern, "/" to represent the entire contents of a Web Application. More Info...
<input checked="" type="checkbox"/> Downgrade Untrusted Principals		Specifies whether to downgrade to anonymous principals that cannot be verified. More Info...
<input type="checkbox"/> Principal Equals Case Insensitive		Specifies whether the WebLogic Server principal name is compared using a case insensitive match when the equals method for the principal object is performed. More Info...
<input type="checkbox"/> Principal Equals Compare DN and GUID		Specifies whether the GUID and DN data in a WebLogic Server principal object are used when the equals method of that object is invoked. More Info...
<input type="checkbox"/> Compatibility Connection Filters Enabled		Specifies whether this WebLogic Server domain enables compatibility with previous connection filters. More Info...
<input type="checkbox"/> Allow Security Management Operations if Non-dynamic Changes have been Made		Specifies whether security management operations are allowed if non-dynamic changes have been made and the Admin Server requires restart. More Info...
<input type="checkbox"/> Clear Text Credential Access Enabled		Returns true if allow access to credential in clear text. This can be overridden by the system property <code>-Dweblogic.management.clearTextCredentialAccessEnabled</code> . More Info...

At the bottom of the page, there is a search bar with the text: `Find: s.lang.SecurityException`. Navigation buttons include 'Next', 'Previous', 'Highlight all', and 'Match case'.



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