SOA Suite Setup for BPEL Process Flow
Oracle FLEXCUBE Universal Banking
Release 14.1.0.0.0
[May] [2018]

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FINANCIAL SERVICES

Table of Contents

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1.   Preface

1.1   Background

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

Refer Oracle documentation for HA (FCUBS Switch Interface Gateway High Availability Configuration.pdf) 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

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

2.1 Introduction

The download of software can be done from the below oracle edelivery portal
https://edelivery.oracle.com

Refer to the Oracle certification matrix for qualified databases.

2.2 List of downloaded files

Search: Oracle JDK Latest JDK 1.8 Update 144 for Linux x86-64Search:
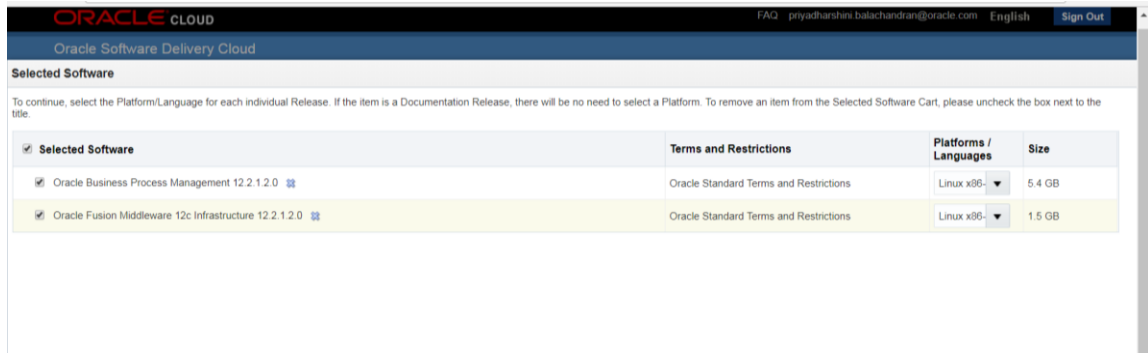**Oracle Fusion Middleware 12c Infrastructure** 12.2.1.2.0

V779122-01.zip - Oracle Fusion Middleware 12c Infrastructure 12.2.1.2.0

Search: **Oracle Business Process Management** 12.2.1.2.0

V789369-01.zip - Oracle Fusion Middleware 12c (12.2.1.2.0) SOA Suite and Business Process Management

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

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

Installation of the software can be done from local machine or from the app server

1.   Installation from the app server location:

a) Login to the app server host and connect through putty

b) Copy the zipped file into the app server in the location /scratch/app/<[app_name]>

eg: /scratch/app/bpm12212

c) Unzip the file with the command "unzip V779122-01.zip"

d) Once it is unzipped, fmw_12.2.1.2.0_soa.jar and fmw_12212_readme.htm will be

extracted   into the same path

e) execute the jar file to launch the installer for 12c SOA installation with the below command

"java –jar fmw_12.2.1.2.0_infrastructure.jar"

```
[oracle@wls12c-node1 ~]$ cd /scratch/app/fmwTemp1221/
[oracle@wls12c-node1 fmwTemp1221]$ unzip V779122-01.zip
Archive:  V779122-01.zip
inflating: fmw_12.2.1.2.0_infrastructure.jar
[oracle@wls12c-node1 fmwTemp1221]$ java -jar fmw_12.2.1.2.0_infrastructure.jar
```

2. Installation from the local path:

a) open the command prompt in "Run as Adminstrator" mode and move to the location where

 the zip file is available using the command "cd" followed by the path

eg: C:\Users\pribalac\Downloads

b) Unzip the file with the command "unzip V779122-01.zip"

c) Once it is unzipped, fmw_12.2.1.2.0_soa.jar and fmw_12212_readme.htm will be extracted into

the same path

d) execute the jar file to launch the installer for 12c SOA installation with the below command

"java –jar fmw_12.2.1.2.0_soa.jar"

```
[C:\Users\pribalac\ ~]$ cd C:\Users\pribalac\Downloads\V779122-01
[C:\Users\pribalac\Downloads\V779122-01]$ unzip V779122-01.zip
Archive:  V779122-01.zip
inflating: fmw 12.2.1.2.0 infrastructure.jar
[C:\Users\pribalac\Downloads\V779122-01]$ "C:\Program Files\Java\jdk1.8.0_144\bin\java" -jar
fmw_12.2.1.2.0_infrastructure.jar
```

Step 1:

Step 2:

Select the option based on the requirement:

If you do not want the auto updates, select the first option.

If you are applying patches, select the second option.
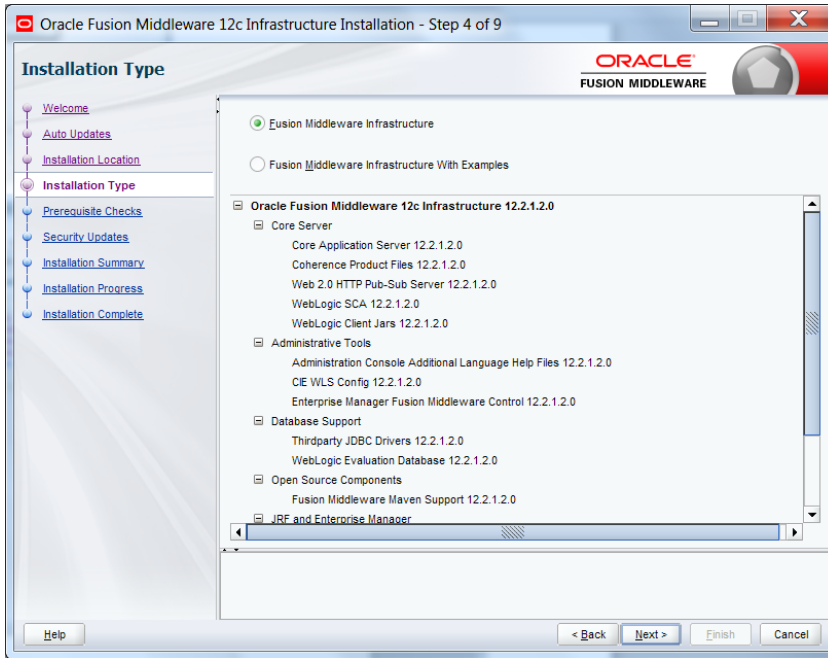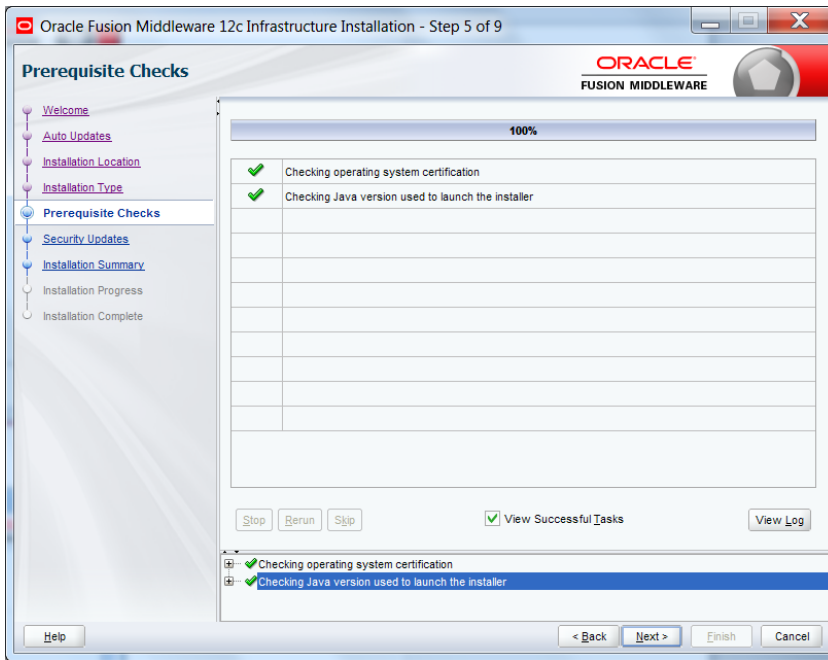
Step 3:

Define the oracle home path
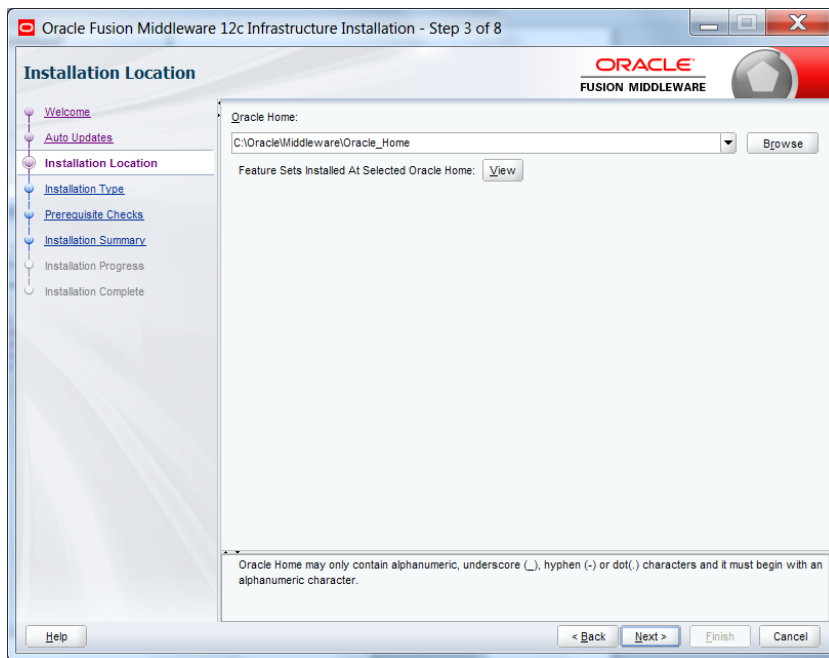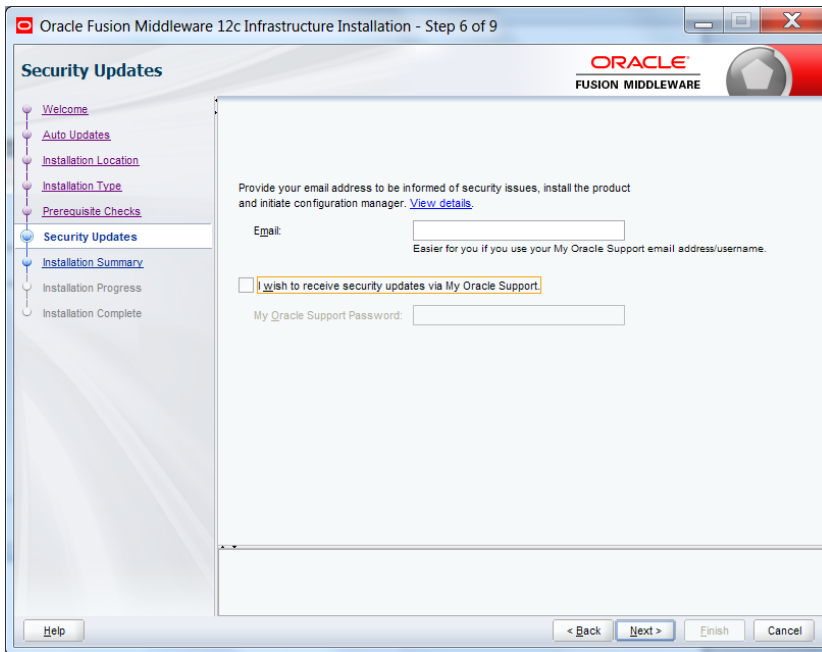

Step 4:

Select fusion middleware infrastructure
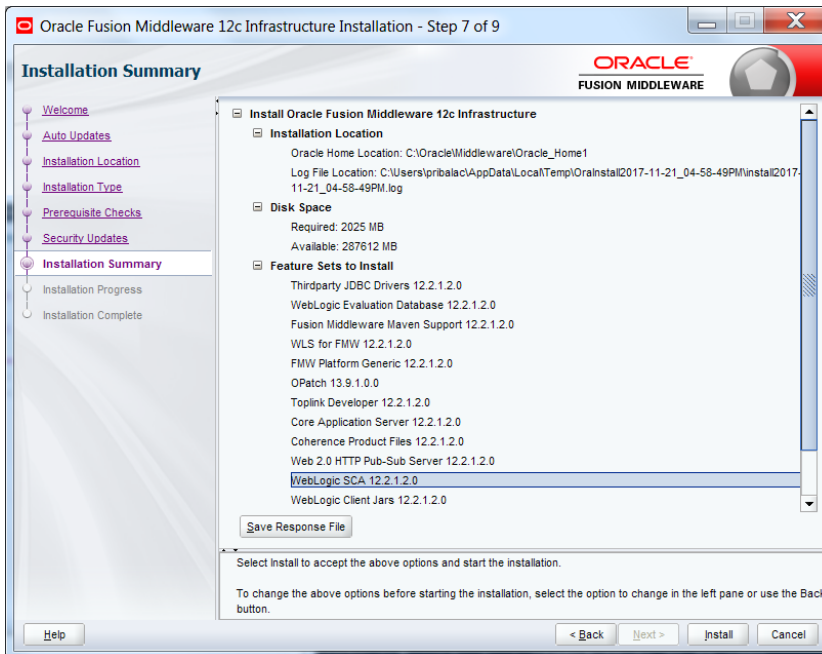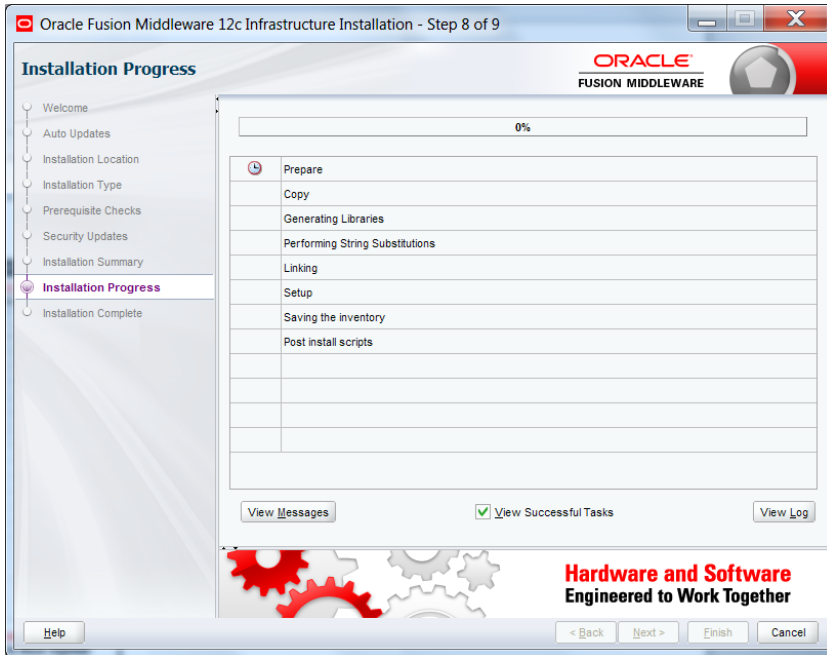
Step 5:

Step 6:

Optional based on installation requirement
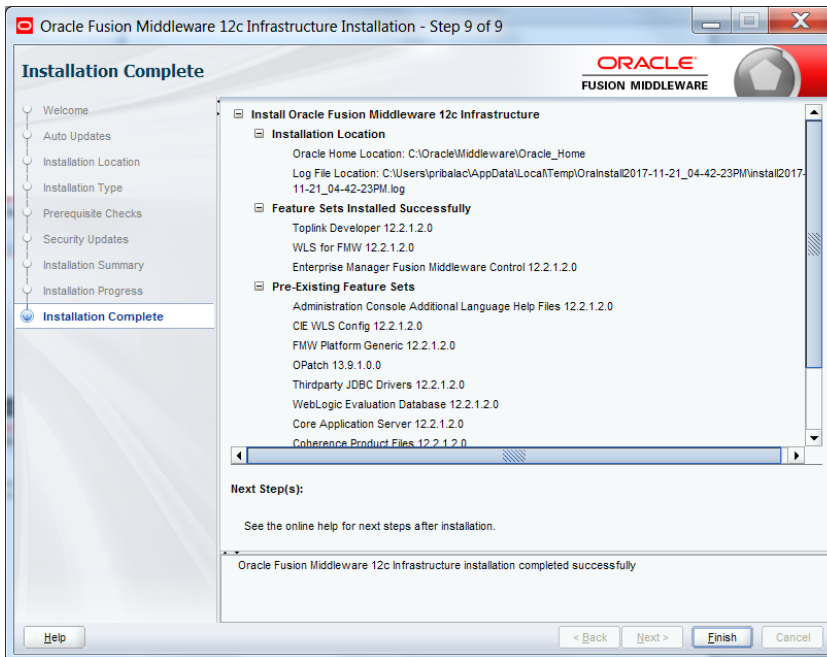
Step 7:

Step 8:

Step 9:

2.5 <u>Installing Oracle Fusion Middleware 12c software.</u>

Installation of the software can be done from local machine or from the app server

1. Installation from the app server location:

a) Login to the app server host and connect through putty

b) Copy the zipped file into the app server in the location /scratch/app/<[app_name]>

eg: /scratch/app/bpm12212

c) Unzip the file with the command "unzip V789369-01.zip"

d) Once it is unzipped, fmw_12.2.1.2.0_soa.jar and fmw_12212_readme.htm will be

extracted   into the same path

e) execute the jar file to launch the installer for 12c SOA installation with the below command

"java –jar fmw_12.2.1.2.0_soa.jar"

```
[bpm12212@whf00anl:~]$ cd /scratch/app/bpm12212/
[bpm12212@whf00anl:/scratch/app/bpm12212]$ unzip V789369-01.zip
Archive:  V789369-01.zip
  inflating: fmw 12.2.1.2.0 soa.jar

[bpm12212@whf00anl:/scratch/app/bpm12212]$ java -jar fmw_12.2.1.2.0_soa.jar
```

2. 1) Installation from the local path:

a) open the command prompt in "Run as Adminstrator" mode and move to the location where

 the zip file is available using the command "cd" followed by the path
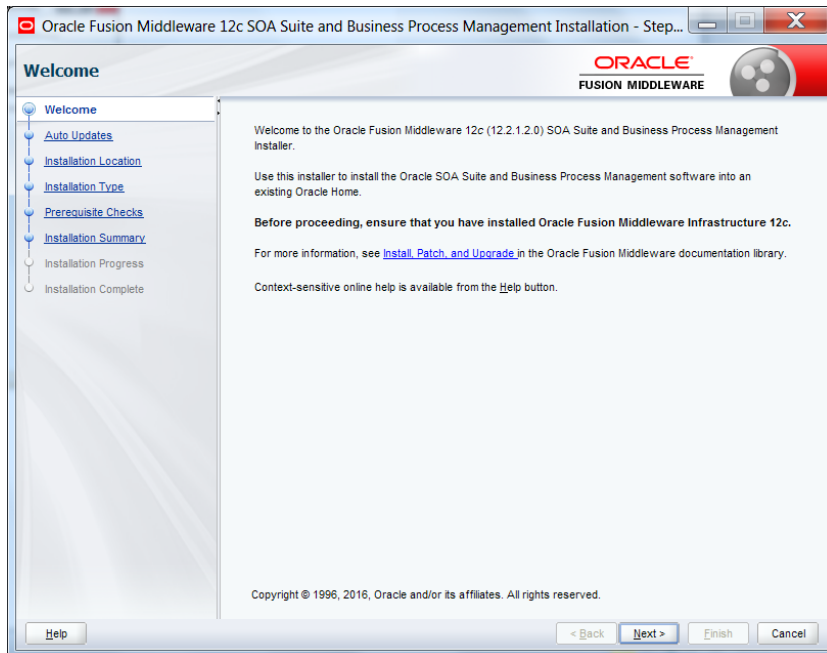
eg: C:\Users\pribalac\Downloads

b) Unzip the file with the command "unzip V789369-01.zip"

c) Once it is unzipped, fmw_12.2.1.2.0_soa.jar and fmw_12212_readme.htm will be extracted into

the same path

d) execute the jar file to launch the installer for 12c SOA installation with the below command
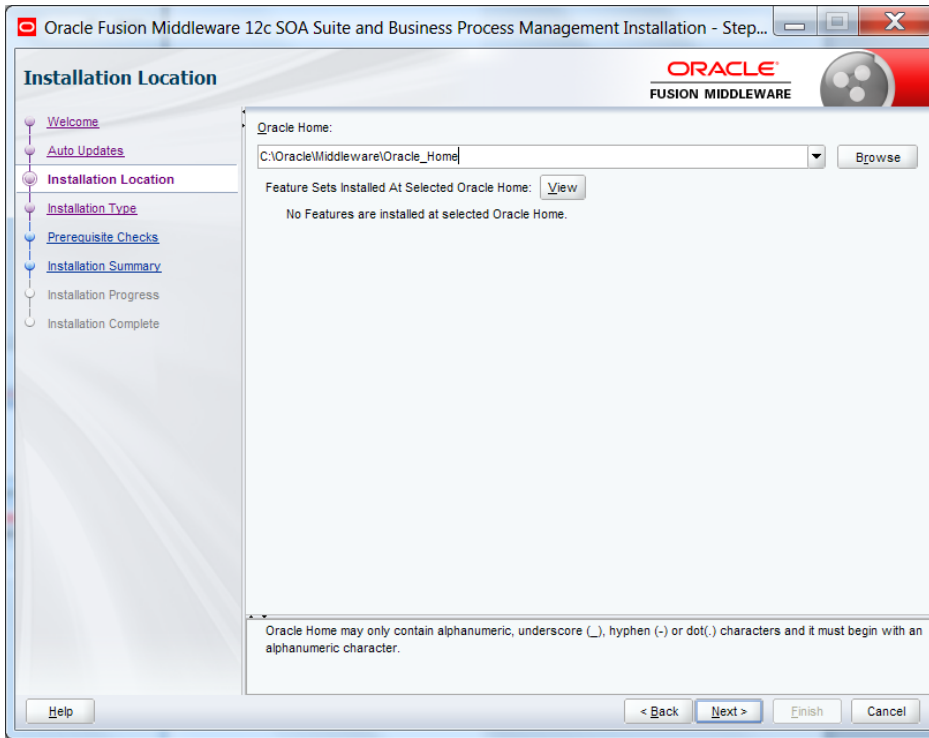
"java –jar fmw_12.2.1.2.0_soa.jar"

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.
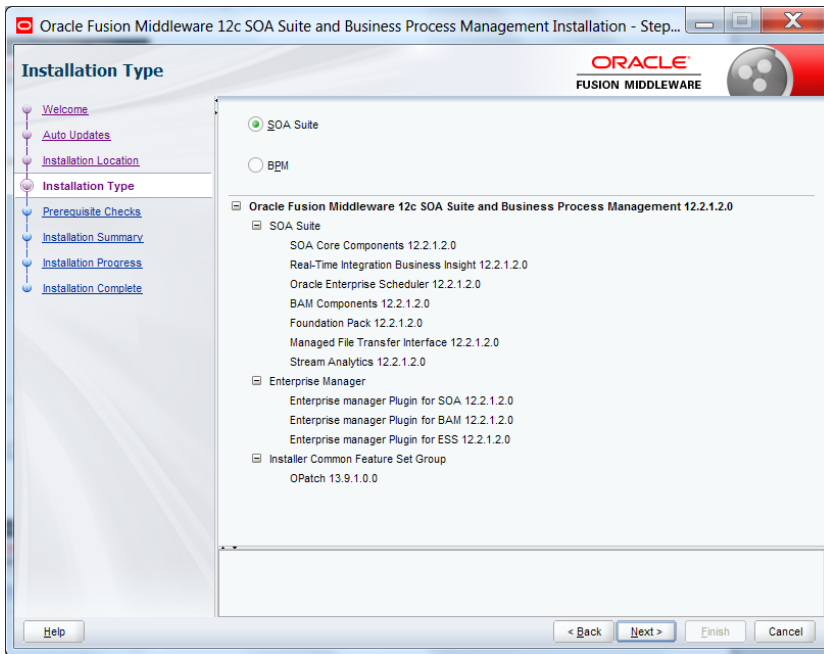- If you are applying patches , select the second option .

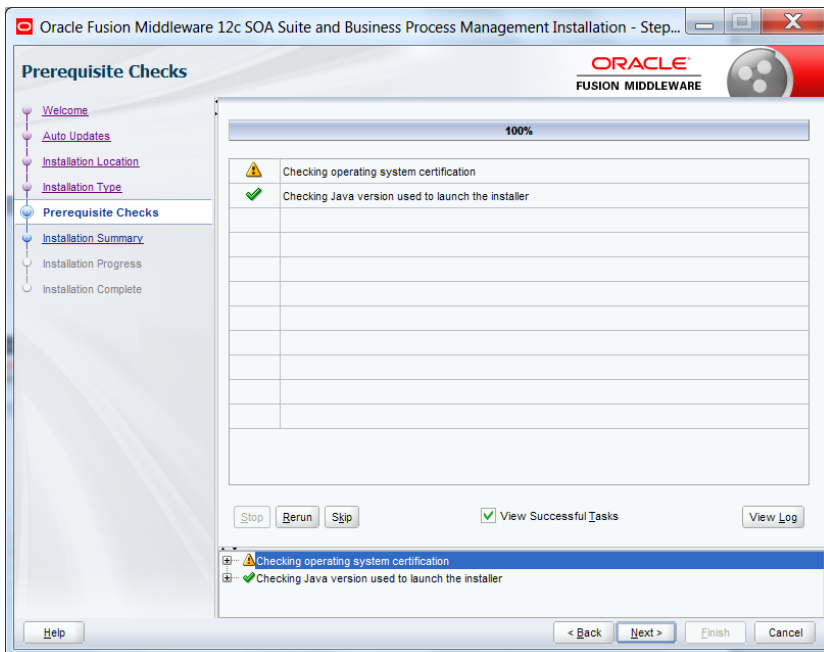Please select the below option based on the requirement:
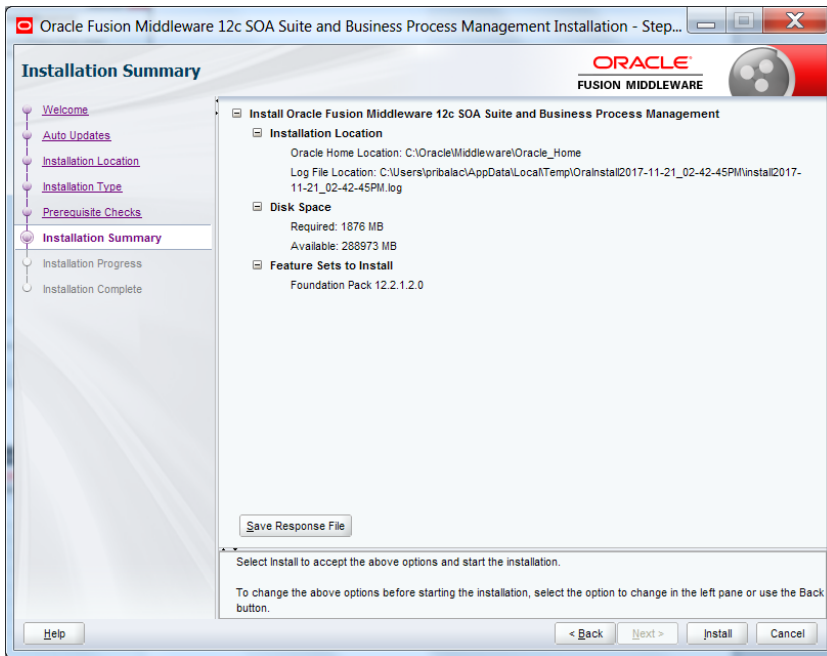
Step 3:

Step 4:

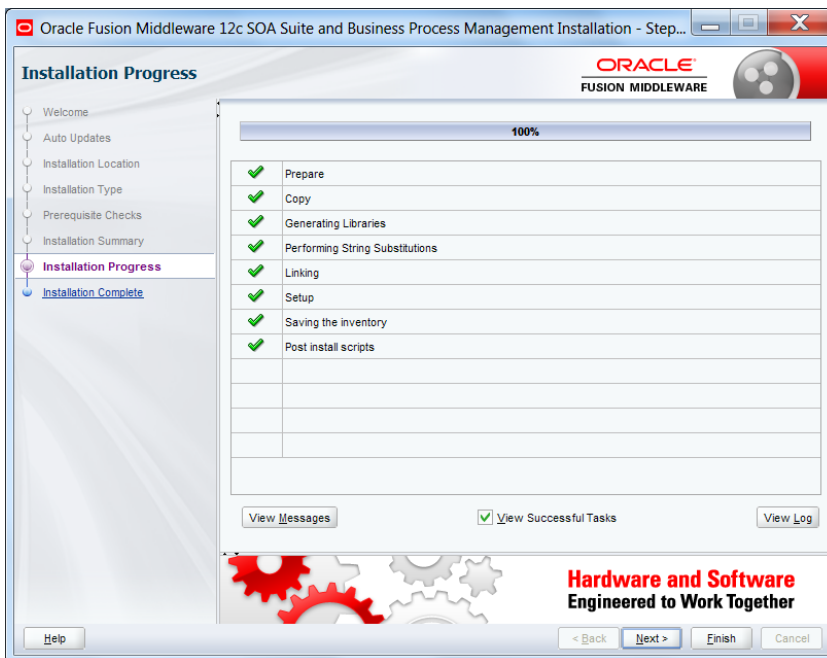Select BPM if the environment requires BPM process flow deployment
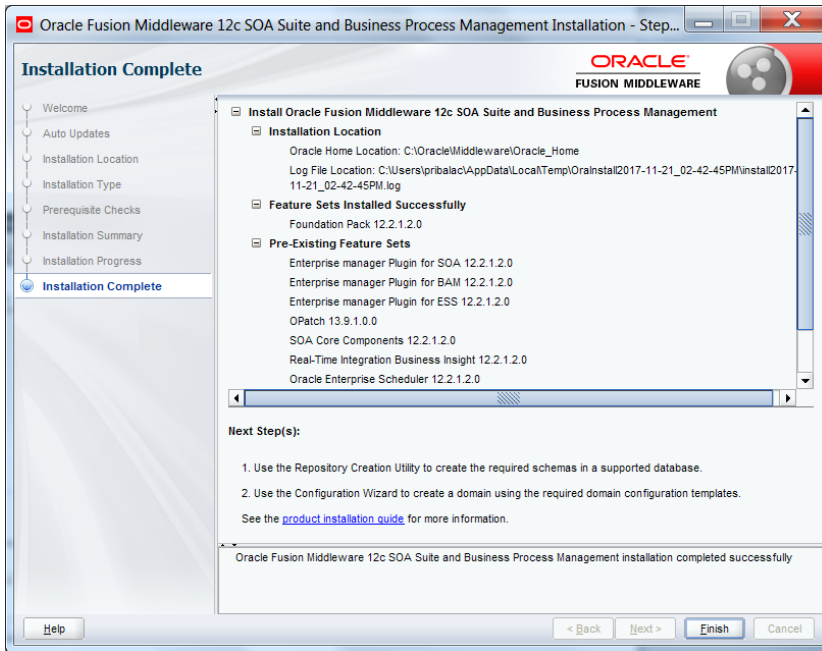

Step 5:

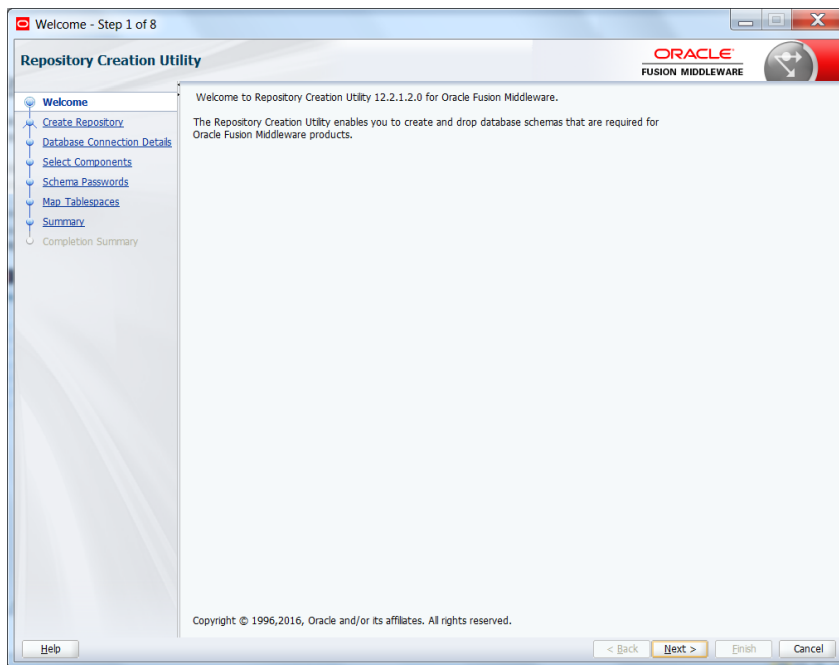**Step 6:**

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.
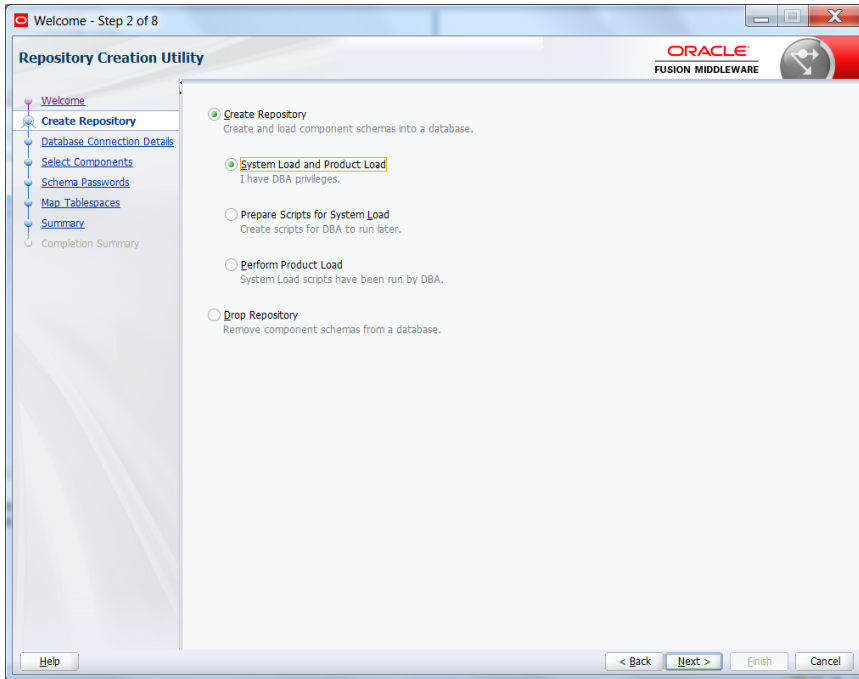
```
[oracle@wls12c-node1 fmwTemp1221]$ cd /scratch/app/fmwTemp1221/Oracle/Middleware/Oracle_Home/bin/
[oracle@wls12c-node1 bin]$ ./rcu
```
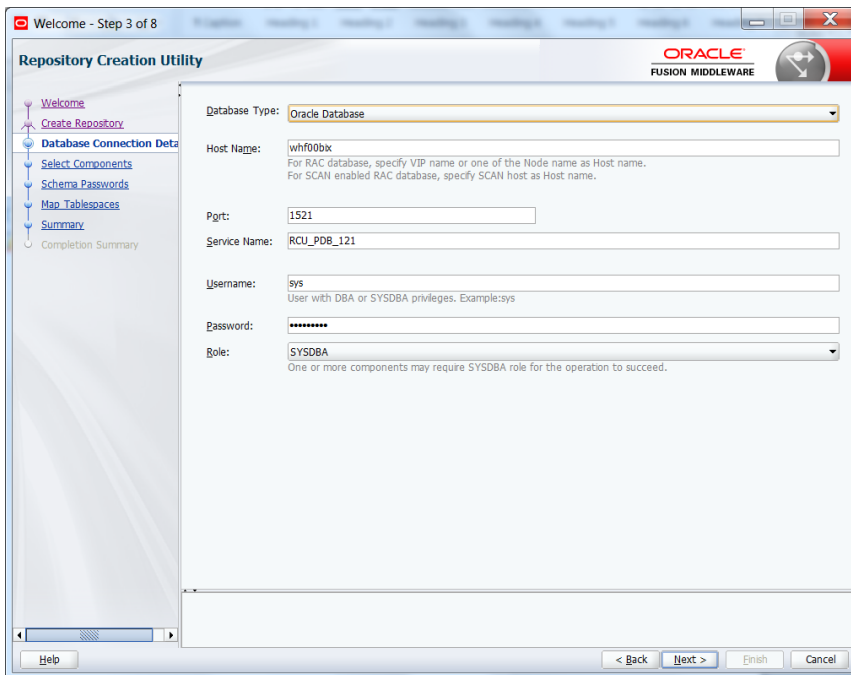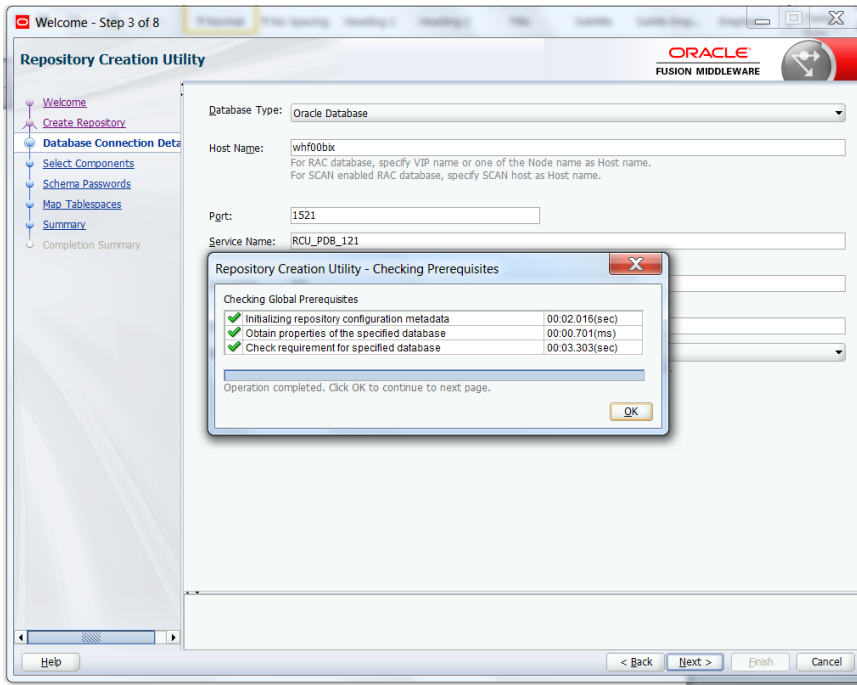
Step 1:

Step 2:

Select the option as System Load and Product Load and click on Next

Repository Creation Utility

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- Welcome
- **Create Repository**
- Database Connection Details
- Select Components
- Schema Passwords
- Map Tablespaces
- Summary
- Completion Summary

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

　◉ System Load and Product Load
　I have DBA privileges.

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

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

○ Drop Repository
Remove component schemas from a database.

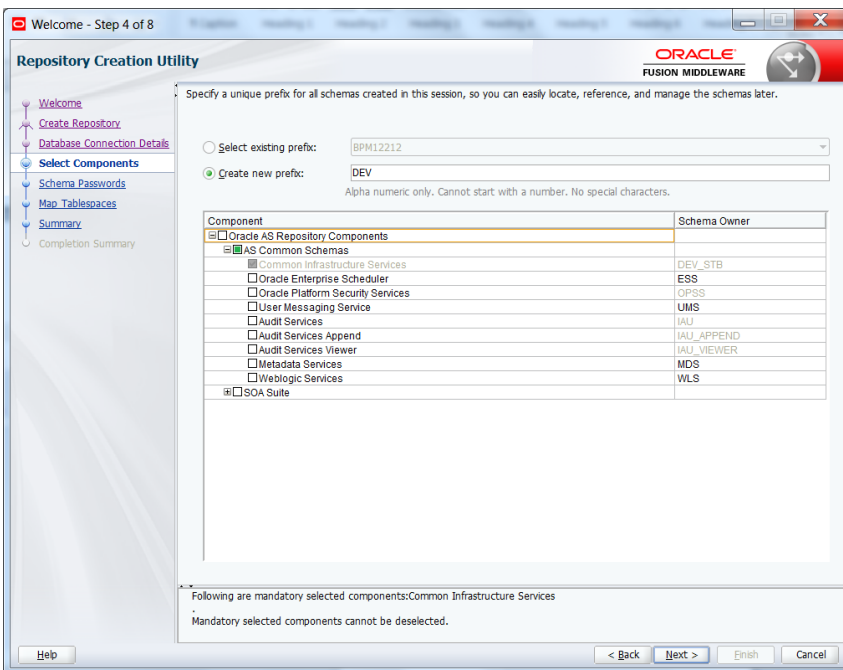Help   < Back   Next >   Finish   Cancel

Step 3:

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.
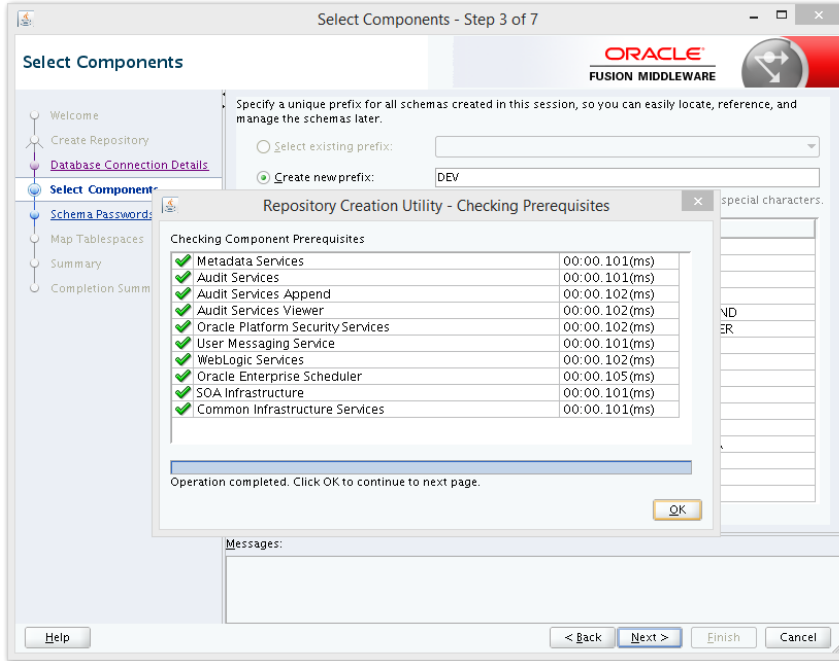
Repository Creation Utility

ORACLE
FUSION MIDDLEWARE

- Welcome
- Create Repository
- **Database Connection Details**
- Select Components
- Schema Passwords
- Map Tablespaces
- Summary
- Completion Summary

Database Type:　Oracle Database

Host Name:　whf00bix
For RAC database, specify VIP name or one of the Node name as Host name.
For SCAN enabled RAC database, specify SCAN host as Host name.

Port:　1521

Service Name:　RCU_PDB_121

Username:　sys
User with DBA or SYSDBA privileges. Example:sys

Password:　••••••••

Role:　SYSDBA
One or more components may require SYSDBA role for the operation to succeed.

Help   < Back   Next >   Finish   Cancel

Step 4:

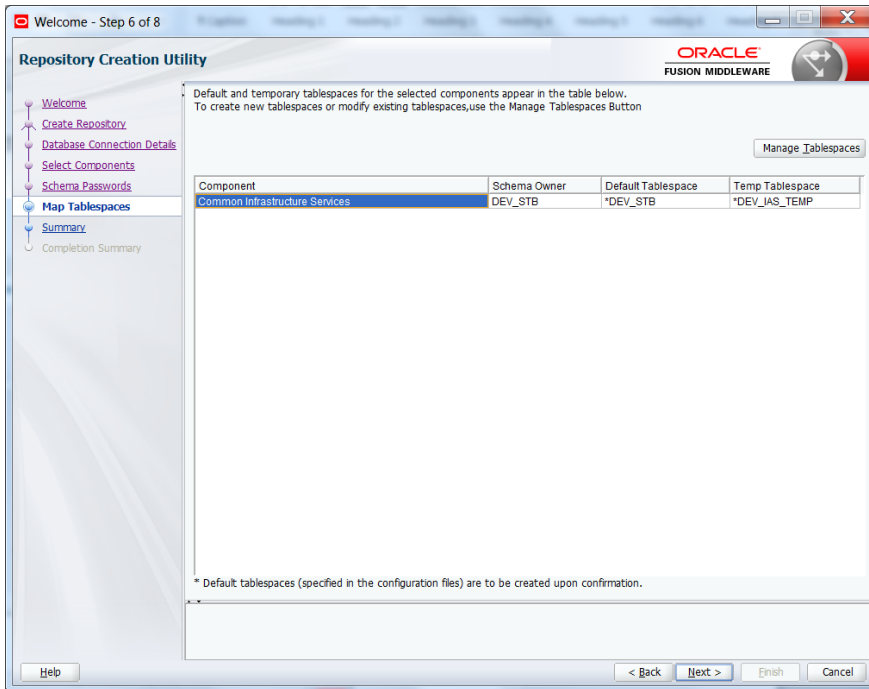Define the prefix to be used for the schemas

Step 5:

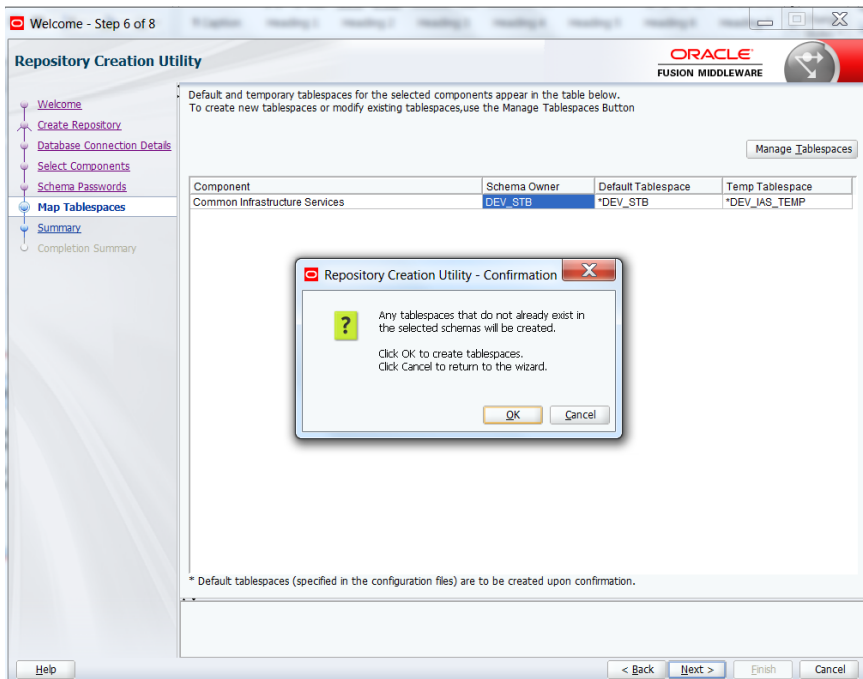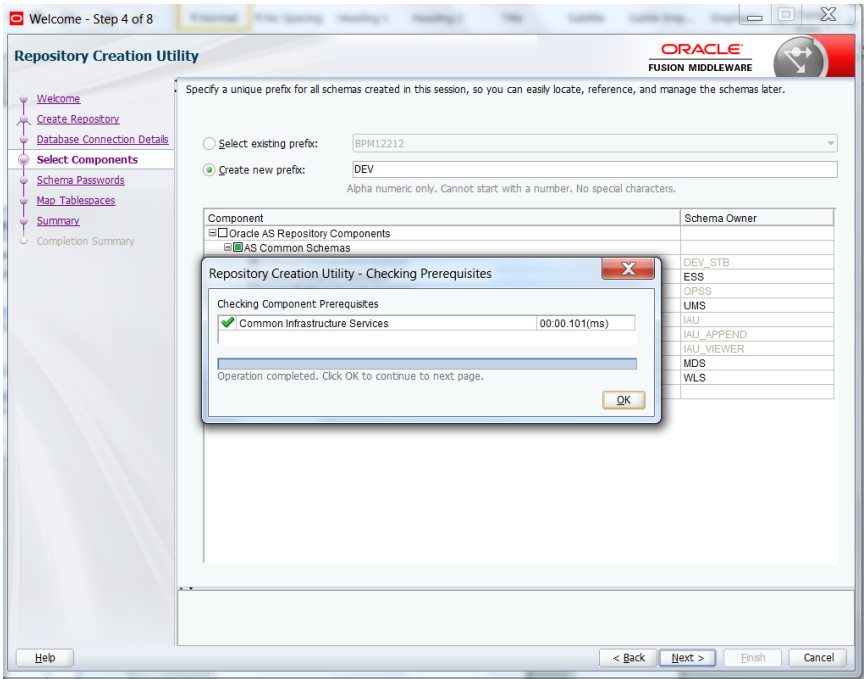Define the password for the schemas.
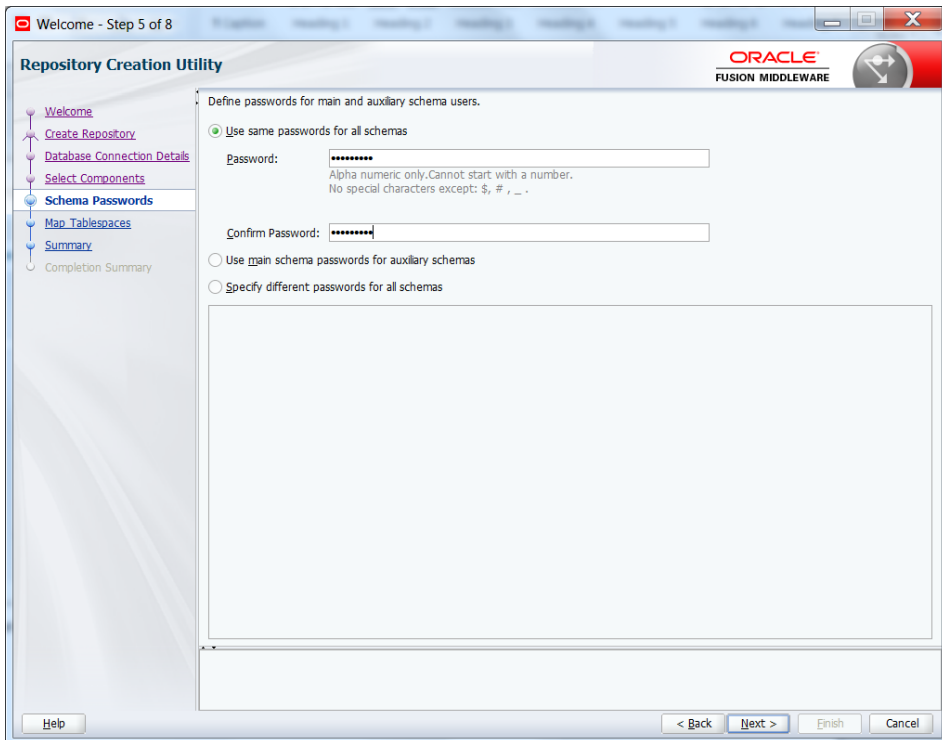
Note: It is important to remember the password or passwords that you enter during the process.
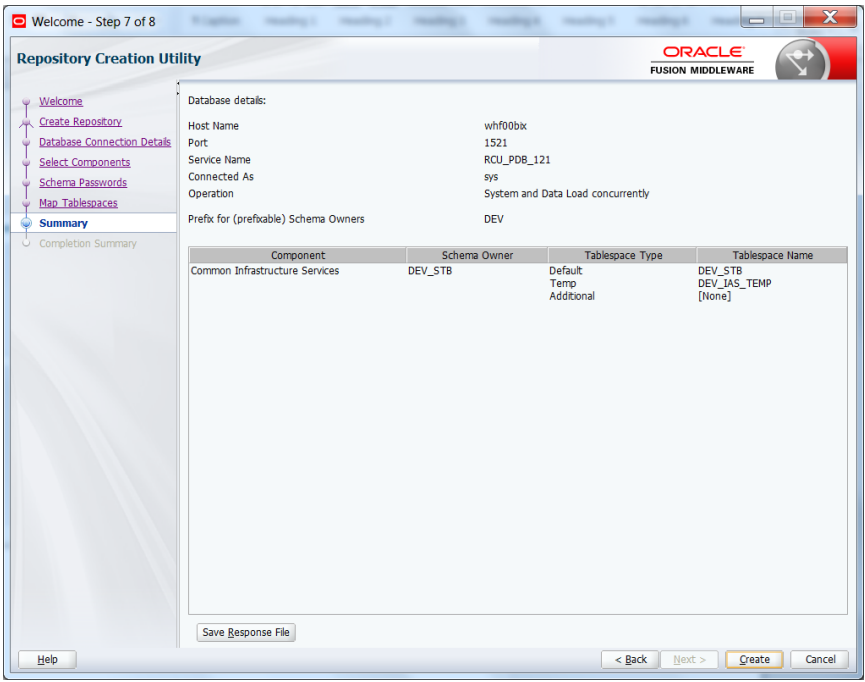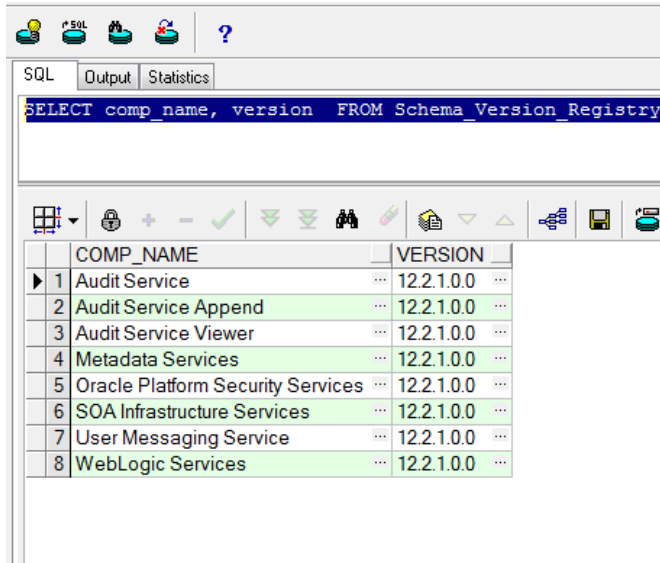
Step 6:

Step 7:

Step 7:

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

```
SQL> select comp_name, version from schema_version_registry;
```
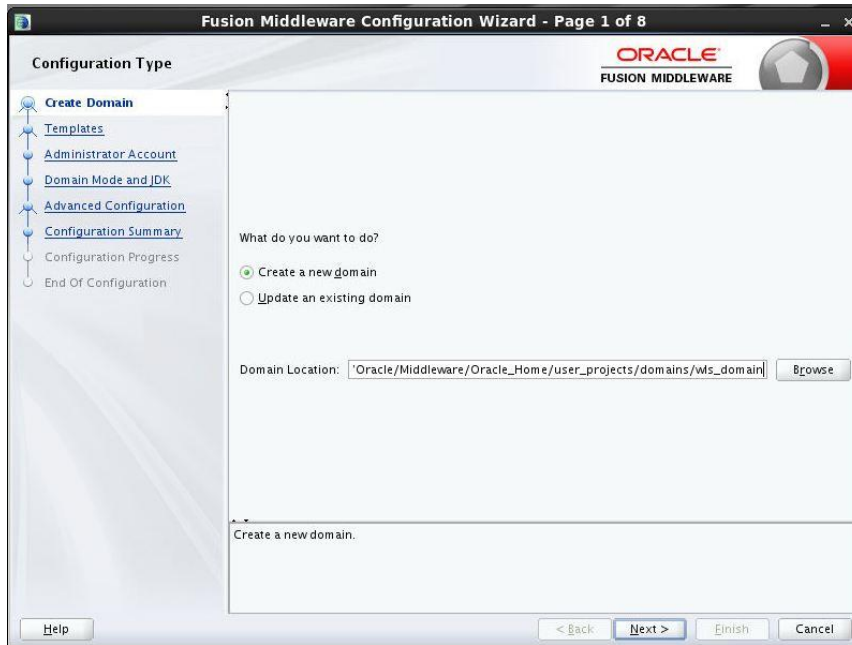
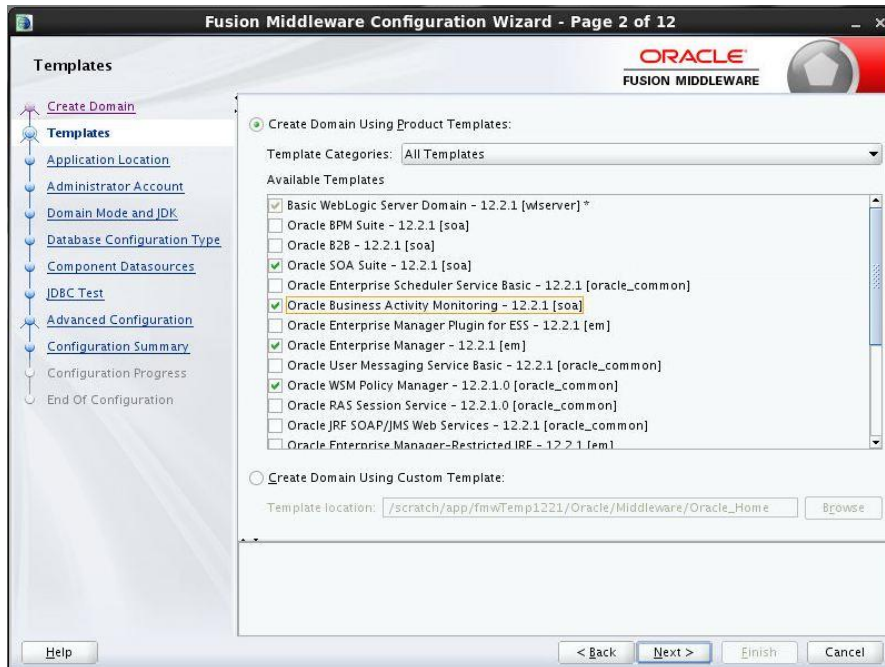## 2.7 WebLogic Server Domain Configuration

Step 1:

Step 2:
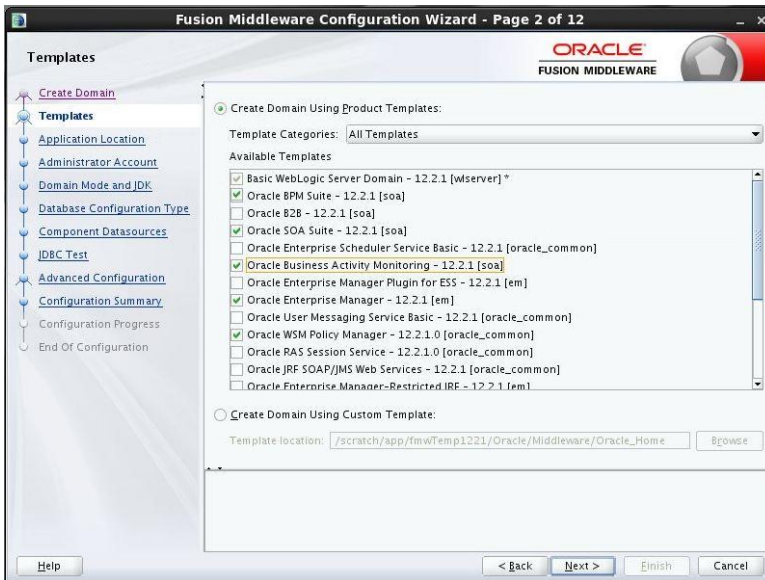
Domain creation template

For BPEL only domain

🛑 Based on the requirement select the Oracle Business Activity Monitoring (BAM) check box.

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

Templates

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- Create Domain
- **Templates**
- Application Location
- Administrator Account
- Domain Mode and JDK
- Database Configuration Type
- Component Datasources
- JDBC Test
- Advanced Configuration
- Configuration Summary
- Configuration Progress
- End Of Configuration

⦿ Create Domain Using Product Templates:

Template Categories: All Templates

Available Templates

☑ Basic WebLogic Server Domain - 12.2.1 [wlserver] *
☑ Oracle BPM Suite - 12.2.1 [soa]
☐ Oracle B2B - 12.2.1 [soa]
☑ Oracle SOA Suite - 12.2.1 [soa]
☐ Oracle Enterprise Scheduler Service Basic - 12.2.1 [oracle_common]
☑ Oracle Business Activity Monitoring - 12.2.1 [soa]
☐ Oracle Enterprise Manager Plugin for ESS - 12.2.1 [em]
☑ Oracle Enterprise Manager - 12.2.1 [em]
☐ Oracle User Messaging Service Basic - 12.2.1 [oracle_common]
☑ Oracle WSM Policy Manager - 12.2.1.0 [oracle_common]
☐ Oracle RAS Session Service - 12.2.1.0 [oracle_common]
☐ Oracle JRF SOAP/JMS Web Services - 12.2.1 [oracle_common]
☐ Oracle Enterprise Manager-Restricted JRF - 12.2.1 [em]

○ Create Domain Using Custom Template:

Template location: /scratch/app/fmwTemp1221/Oracle/Middleware/Oracle_Home   Browse

Help   < Back   Next >   Finish   Cancel

Step 3:

Step 4:

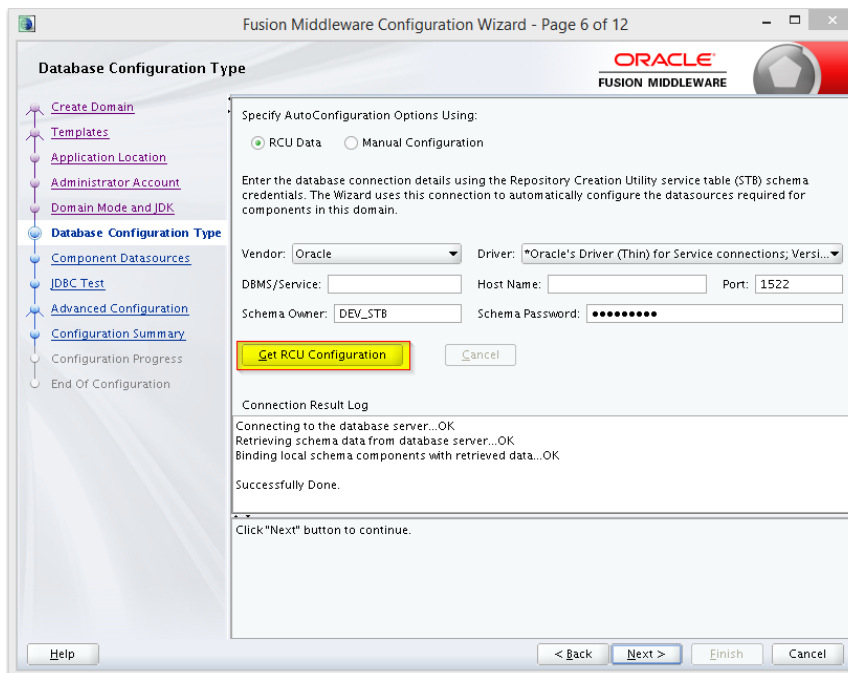Defining the domain user name and password

Step 5:

Domain mode needs to be production for all installations.
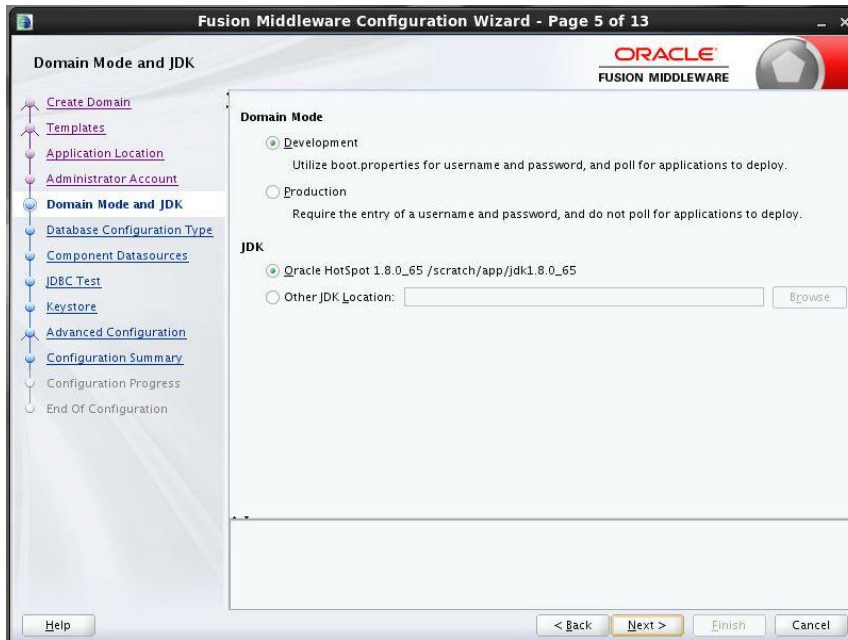
Step 6:

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.
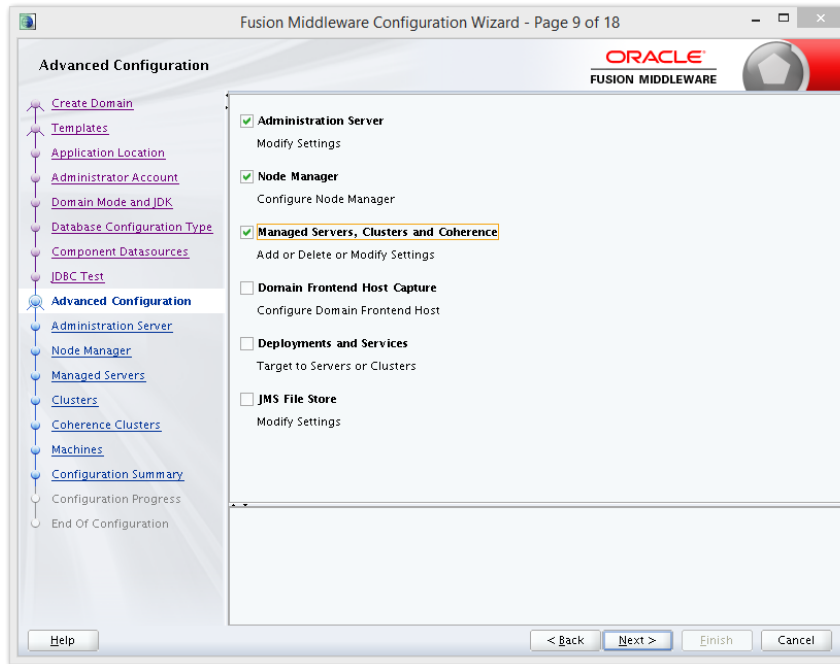
Step 10:

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

Administration Server

ORACLE
FUSION MIDDLEWARE

- Create Domain
- Templates
- Application Location
- Administrator Account
- Domain Mode and JDK
- Database Configuration Type
- Component Datasources
- JDBC Test
- Advanced Configuration
- **Administration Server**
- Node Manager
- Managed Servers
- Clusters
- Coherence Clusters
- Machines
- Configuration Summary
- Configuration Progress
- End Of Configuration

Server Name	WLS0_ADMIN
Listen Address	wls12c
Listen Port	7001
Enable SSL	☐
SSL Listen Port	
Server Groups	Unspecified

The name must not be null or empty and may not contain any : , = *?%_cloned.

Help   < Back   Next >   Finish   Cancel

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:

Configuration Progress

ORACLE
FUSION MIDDLEWARE

- Create Domain
- Templates
- Application Location
- Administrator Account
- Domain Mode and JDK
- Database Configuration Type
- Component Datasources
- JDBC Test
- Advanced Configuration
- Administration Server
- Node Manager
- Managed Servers
- Clusters
- Assign Servers to Clusters
- Coherence Clusters
- Machines
- Assign Servers to Machines
- Configuration Summary
- **Configuration Progress**
- End Of Configuration

100%

Preparing...
Extracting Domain Contents...
Creating Domain Security Information...
Starting OPSS Security Configuration Data Processing...
The OPSS Security Configuration Data Processing Completed...
Saving the Domain Information...
Storing Domain Information...
String Substituting Domain Files...
Performing OS Specific Tasks...
Performing Post Domain Creation Tasks...
Starting OPSS Security Configuration Commit Task...
The OPSS Security Configuration Completed...
Domain Created Successfully!

Help   < Back   Next >   Finish   Cancel

Configuration Success

ORACLE
FUSION MIDDLEWARE

- Create Domain
- Templates
- Application Location
- Administrator Account
- Domain Mode and JDK
- Database Configuration Type
- Component Datasources
- JDBC Test
- Advanced Configuration
- Administration Server
- Node Manager
- Managed Servers
- Clusters
- Assign Servers to Clusters
- Coherence Clusters
- Machines
- Assign Servers to Machines
- Configuration Summary
- Configuration Progress
- **Configuration Success**

✔ **Oracle Weblogic Server Configuration Succeeded**

New Domain soa12c_domain1 Creation Successful

Domain Location
/u01/app/oracle/config/domains/soa12c_domain1

Admin Server URL
http://wls12c-node1.zion.local:7001/console

Help   < Back   Next >   Finish   Cancel
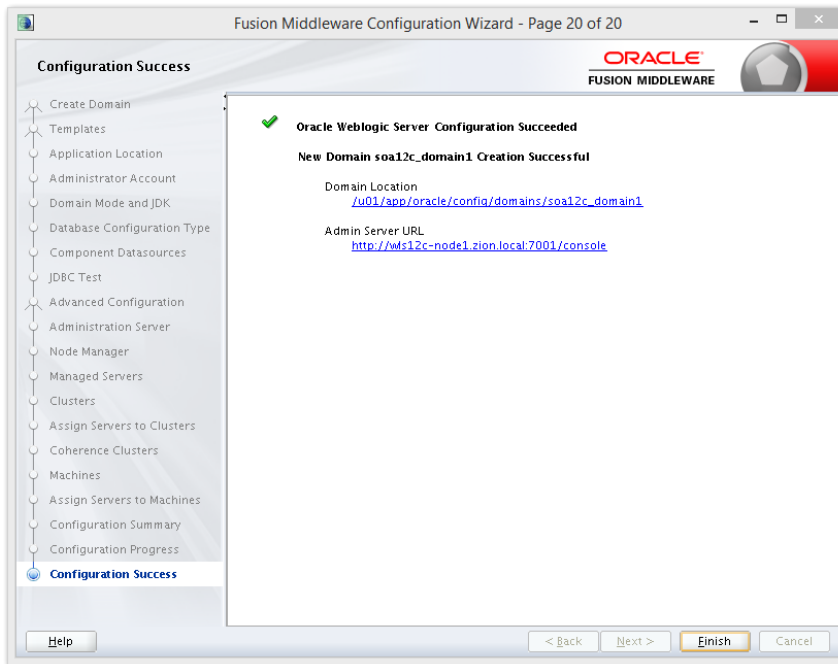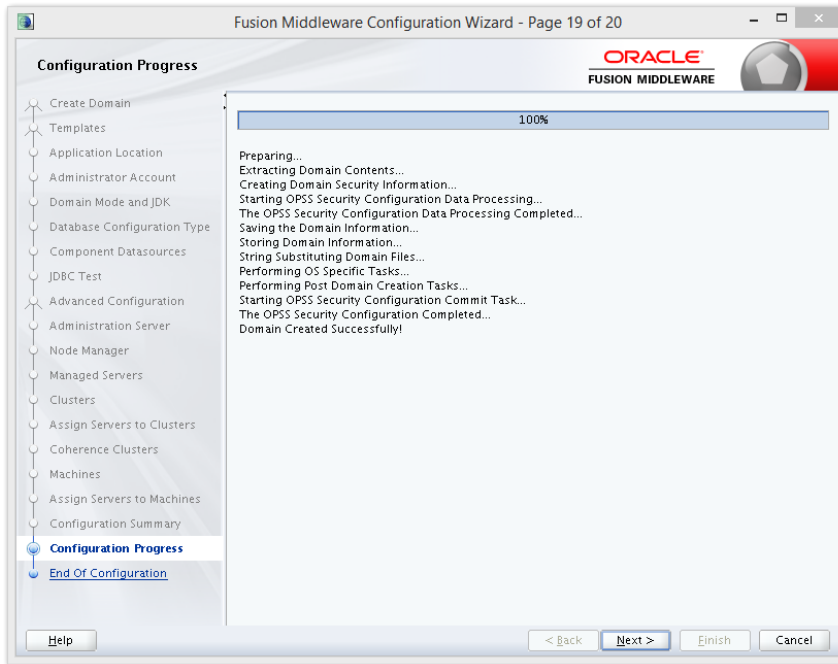
2.8   Remote Setup Configuration:

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

File   Edit   View   History   Bookmarks   Tools   Help

adding trust between two weblogic dom... | Configuring Security for a WebLogic Do... | Enable global trust between domains | Security - base_kernel1132 - WLS Console × | /Farm_base_kernel1132/base_kernel11... | +

http://10.184.74.143:7389/console/console.portal?_nfpb=true&_pageLabel=DomainSecuritygeneralTabPage&SecurityDomainDomainConfigGeneralPortlethandl

object: principals=[weblogic, Administrators]

Mapping

- Reset the EnforceStrictURLPattern flag

System Status

Health of Running Servers

	Failed (0)
	Critical (0)
	Overloaded (0)
	Warning (0)
	OK (2)

Advanced

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 os, true, or false.   More Info...

☑ **Enforce Strict URL Pattern**   — Specifies whether the system should enforce strict URL pattern., " / " to represent the entire contents of a Web Application.   More Info...

☑ **Downgrade Untrusted Principals**   — Specifies whether to downgrade to anonymous principals that cannot be verified.   More Info...

☐ **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...

☐ **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...

☐ **Compatibility Connection Filters Enabled**   — Specifies whether this WebLogic Server domain enables compatibility with previous connection filters.   More Info...

☐ **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...

☐ **Clear Text Credential Access Enabled**   — Returns true if allow access to credential in clear text. This can be overridden by the system property -Dweblogic.management.clearTextCredentialAccessEnabled   More Info...

Find: ..lang.SecurityException   ⬇ Next   ⬆ Previous   ✓ Highlight all   ☑ Match case

SOA Suite Setup for BPEL Process Flow
[May] [2018]
Version 14.1.0.0.0

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