SOA Suite Setup for BPEL Process Flow
Oracle FLEXCUBE Universal Banking
Release 12.4.0.0.0
[May] [2017]
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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 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

<table>
<thead>
<tr>
<th>Acronym/Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPEL</td>
<td>Business Process Execution Language</td>
</tr>
<tr>
<td>HA</td>
<td>High Availability</td>
</tr>
</tbody>
</table>
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

- HP-UX Itanium
- IBM AIX on POWER Systems (64-bit)
- IBM z/OS on System z
- IBM Linux on System z
- Linux x86-64
- Microsoft Windows (32-bit)
- Microsoft Windows x64 (64-bit)
- Oracle Solaris on SPARC (32-bit)
- Oracle Solaris on SPARC (64-bit)
- Oracle Solaris on x86-64 (64-bit)
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:
Welcome to the Oracle Fusion Middleware 12c (12.2.1.0.6) Infrastructure Installer.

Use this installer to create a new Oracle home that contains the Oracle Fusion Middleware infrastructure software. You can then install additional Fusion Middleware products that require the infrastructure into the Oracle home, or you can use the infrastructure to configure a WebLogic Server domain for the deployment of J2EE and Oracle ADF applications.

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

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

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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:
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:

Oracle Fusion Middleware 12c Infrastructure Installation - Step 9 of 9

Installation Complete

**Installation Location**
- **Oracle Home Location**: /u01/app/oracle/product/12.2.1/OracleHome
- **Log File Location**: /u01/app/oracle/product/12.2.1/OracleHome/install/install2016-03-29_05-08-24PM/MessageLog/install2016-03-29_05-08-24PM.log

**Feature Sets Installed Successfully**
- Fusion Middleware 12c
- Administration Console
- Additional Language Support Files 12.2.1.0.0
- CEE
- WLS 12.2.1.0.0
- Enterprise Manager 12.2.1.0.0
- ThirdParty JDBC Drivers 12.2.1.0.0
- WLS for FMW 12.2.1.0.0
- Core Application Server 12.2.1.0.0
- Coherence Product Files 12.2.1.0.0
- WebLogic 12.2.1.0.0
- WebLogic Client Jars 12.2.1.0.0
- FMW Platform Generic 12.2.1.0.0
- OPatch 13.3.0.0.0
- TopLink Developer 12.2.1.0.0

**Next Steps:**
- See the online help for next steps after installation.

Oracle Fusion Middleware 12c Infrastructure installation completed successfully
2.5 **Installing Oracle Fusion Middleware 12c software.**

[Code snippet]
```
[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:**

[Image of Oracle Fusion Middleware 12c SOA Suite and Business Process Management Installation - Step 1 dialog box]

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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:

![Installation Summary]

Step 7:

![Installation Progress]
Step 8:

Oracle Fusion Middleware 12c SOA Suite and Business Process Management Installation - Step 8

Installation Complete

- Install Oracle Fusion Middleware 12c SOA Suite and Business Process Management

Installation Location
- Oracle Home Location: /u01/app/oracle/product/12.2.1.0.0/oracle_home
- Log File Location: /u01/app/oracle/product/12.2.1.0.0/log

Features Installed Successfully
- SOA Core Components: 12.2.1.0.0
- SOA Process Monitoring: 12.2.1.0.0
- Oracle Enterprise Scheduler: 12.2.1.0.0
- BAM Components: 12.2.1.0.0
- Foundation Pack: 12.2.1.0.0
- Managed File Transfer Interface: 12.2.1.0.0
- Event Processing: 12.2.1.0.0
- Enterprise Manager Plugins for SOA: 12.2.1.0.0
- Enterprise Manager Plugins for BAM: 12.2.1.0.0
- Enterprise Manager Plugins for EBS: 12.2.1.0.0
- BPM Components: 12.2.1.0.0

Pre-Existing Feature Sets
- OPM: 13.3.0.0.0

Next Steps:
1. Use the Repository Creation utility to create the required schemas in a supported database.
2. Use the Configuration Wizard to create a domain using the required domain configuration templates.
3. See the product installation guide for more information.

Oracle Fusion Middleware 12c SOA Suite and Business Process Management installation completed successfully.
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: **STOP** Please select the database profile based on requirement (SMALL/MED/LARGE)

Step 6:
**Step 7:**

Repository Creation Utility

<table>
<thead>
<tr>
<th>Component</th>
<th>Status</th>
<th>Time</th>
<th>Logfile/Csv to store</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metadata Services</td>
<td>Success</td>
<td>D0:11:435 (sec)</td>
<td>mtdr.log</td>
</tr>
<tr>
<td>Audit Services</td>
<td>Success</td>
<td>D0:11:435 (sec)</td>
<td>las.log</td>
</tr>
<tr>
<td>Audit Services Update</td>
<td>Success</td>
<td>D0:09:390 (sec)</td>
<td>lu_update.log</td>
</tr>
<tr>
<td>Audit Services Viewer</td>
<td>Success</td>
<td>D0:09:348 (sec)</td>
<td>lu_rename.log</td>
</tr>
<tr>
<td>Oracle Platform Security Services</td>
<td>Success</td>
<td>D0:15:583 (sec)</td>
<td>opdfr.log</td>
</tr>
<tr>
<td>User Messaging Service</td>
<td>Success</td>
<td>D0:13:443 (sec)</td>
<td>usmsg.log</td>
</tr>
<tr>
<td>Weblogic Services</td>
<td>Success</td>
<td>D0:10:039 (sec)</td>
<td>wbl.log</td>
</tr>
<tr>
<td>Oracle Enterprise Scheduler</td>
<td>Success</td>
<td>D0:13:767 (sec)</td>
<td>oes.log</td>
</tr>
<tr>
<td>SOA Infrastructure</td>
<td>Success</td>
<td>D0:59:166 (sec)</td>
<td>ssoafrt.log</td>
</tr>
<tr>
<td>Common Infrastructure Services</td>
<td>Success</td>
<td>D0:09:295 (sec)</td>
<td>rbfr.log</td>
</tr>
</tbody>
</table>

Prefix for preifiable Schema Owner: DEF
Note: Verifying Schema Version Numbers in the database where RCU is executed

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

<table>
<thead>
<tr>
<th>COMP_NAME</th>
<th>VERSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit Service</td>
<td>12.2.1.0.0</td>
</tr>
<tr>
<td>Audit Service Append</td>
<td>12.2.1.0.0</td>
</tr>
<tr>
<td>Audit Service Viewer</td>
<td>12.2.1.0.0</td>
</tr>
<tr>
<td>Metadata Services</td>
<td>12.2.1.0.0</td>
</tr>
<tr>
<td>Oracle Platform Security Services</td>
<td>12.2.1.0.0</td>
</tr>
<tr>
<td>SOA Infrastructure Services</td>
<td>12.2.1.0.0</td>
</tr>
<tr>
<td>User Messaging Service</td>
<td>12.2.1.0.0</td>
</tr>
<tr>
<td>WebLogic Services</td>
<td>12.2.1.0.0</td>
</tr>
</tbody>
</table>
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.
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 13:

![Fusion Middleware Configuration Wizard](image)

<table>
<thead>
<tr>
<th>Name</th>
<th>Enable Port Bind CID</th>
<th>Port Bind CID</th>
<th>Enable Port Bind UID</th>
<th>Port Bind UID</th>
<th>Node Manager Listen Address</th>
<th>Node Manager Listen Port</th>
</tr>
</thead>
<tbody>
<tr>
<td>MACHINE,web12c-node</td>
<td>false</td>
<td>nobody</td>
<td>false</td>
<td>nobody</td>
<td><code>web12c-node1.example.local</code></td>
<td>5556</td>
</tr>
</tbody>
</table>

### 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`

<table>
<thead>
<tr>
<th>Jar to be copied</th>
<th>Path where the jar is available in SOA Middleware</th>
</tr>
</thead>
<tbody>
<tr>
<td>bpm-services.jar</td>
<td>%Middleware\Home%\soa\soa\modules\oracle.soa.workflow_11.1.1</td>
</tr>
<tr>
<td>fabric-runtime.jar</td>
<td>%Middleware\Home%\soa\soa\modules\oracle.soa.fabric_11.1.1</td>
</tr>
<tr>
<td>tracking-fabric.jar</td>
<td></td>
</tr>
<tr>
<td>tracking-api.jar</td>
<td></td>
</tr>
</tbody>
</table>
### 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 | %Middleware Home%/soa/soa/modules/oracle.bpm.client_11.1.1
oracle.bpm.project.draw.jar | %Middleware Home%/soa/soa/modules/oracle.bpm.project_11.1.1
oracle.bpm.project.model.jar | %Middleware Home%/soa/soa/modules/oracle.bpm.runtime_11.1.1
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

2. Additionally if BPMN enabled

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
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