SIEBELCRM-IFLEXUBS Installation Document Oracle FLEXCUBE Universal Banking Release 12.3.0.0.0 [December] [2016]





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1. Introduction

1.1 Scope of the Document

This document is intended to give details about the setup related activities that are required for the integration of FLEXCUBE and Siebel CRM. The setup involves the following components:

- 1. Installing the FLEXCUBE UBS Gateway infrastructure
- 2. Installation of BPEL Middleware required for Siebel CRM integration
- 3. Installation of FLEXCUBE backend components required for Siebel CRM integration
- 4. Updation of Domain Value Map
- 5. FLEXCUBE maintenances specific to Siebel CRM integration

This document talks in length about the above mentioned items except for "Installing the FLEXCUBE UBS Gateway infrastructure" for which respective file links has been provided to facilitate the installation of those.

1.2 Intended Audience

The document is intended for the following audience

- Implementers
- End-Users

1.3 Organization of the Document

The SIEBELCRM-IFLEXUBS Installation document talks about prerequisites, components to be installed from i-flex side and at BPEL deployment level, the maintenances to be done in the BPEL server and then the steps to be followed to compile and deploy the BPEL Process in the application server.

There will also be components from Siebel's side as a part of this integration.

1.4 Common abbreviation and Terms used

| Terms | Expansion / Meaning |
|-------|-------------------------------------|
| SOA | Service Oriented Architecture |
| BPEL | Business Process Execution Language |



| ESB | Enterprise Service Bus |
|-----|------------------------|
| DVM | Domain Value Map |
| со | Common Object |
| OS | Operating System |



2. Prerequisite

- Oracle 10.1.3.1 SOA suite This is the server on which all the BPEL processes will be installed. This will be a common server on which both the iflex and Siebel BPEL processes will be jointly hosted.
- 2. Oracle 10.1.3 Application Server This is the server on which the FLEXCUBE UBS Gateway infrastructure will be installed.
- 3. Required DVMs should be available in ESB for value translation. For this, please refer to the "Siebel CRM Integration Pack for i-flex FLEXCUBE Implementation Guide" for this.
- 4. Siebel BPEL processes should be available in the SOA server. Also, these processes should be in active state.
- 5. Admin Rights.
- 6. FLEXCUBE has been installed.



3. Components to Be Installed

3.1 Installation Sequence of Various Components:

3.1.1 Installation of EJB Component

Please, refer to OC4J_GW_EJB_Installation.doc for installation guidelines and know how information. This is available in the Install-Docs of Gateway.

3.1.2 Installation of Web Service Component

Following is the list of web services that needs to be deployed:

- 1. FCUBSCustomerService
- 2. FCUBSAccService
- 3. FCUBSAccAddrService
- 4. FCUBSAccFinService
- 5. FCUBSTDService
- 6. FCUBSTDFinService
- 7. FCUBSTDAddrService
- 8. FCUBSSCVService
- 9. FCUBSAccClassService
- 10. FCUBSCLProdService

Please, refer to OC4J_GW_Web Services_Installation.doc for installation guidelines and know how information. This is available in the Install-Docs of Gateway.

3.1.3 Installation of Notify MDB Component

Please, refer to OC4J_GW_Notify_MDB_Installation.doc for installation guidelines and know how information. This is available in the Install-Docs of Gateway.

3.1.4 Installation of BPEL Process

3.1.4.1 Introduction

BPEL processes are normally used to define workflow of a project. In i-flex-UBS and SIEBLE-CRM integration, i-flex BPEL processes are used as adapters which accept the service request in CO format; transforms it to FCUBS format. It also does an inter domain value translation with the assistance of ESB DVMs. BPEL process, then forwards the service request to i-flex web services. It receives the response and sends it back to the request initiator.



Following is the list of BPEL processes that needs to be deployed:

- IFLEXUBSIntegAccOrigWrapperSEBL782ToIFLEXUBS72Sync
- IFLEXUBSIntegCreateAccSEBL782ToIFLEXUBS72Sync
- IFLEXUBSIntegCreateCustSEBL782ToIFLEXUBS72Sync
- IFLEXUBSIntegModifyAccAddrSEBL782ToIFLEXUBS72Sync
- IFLEXUBSIntegModifyCustSEBL782ToIFLEXUBS72Sync
- IFLEXUBSIntegModifyTDRolloverSEBL782ToIFLEXUBS72Sync
- IFLEXUBSIntegQueryAccountClassIFLEXUBS72ToSEBL782Async
- IFLEXUBSIntegQueryAccountIFLEXUBS72ToSEBL782Async
- IFLEXUBSIntegQueryCLAccountIFLEXUBS72ToSEBL782Async
- IFLEXUBSIntegQueryCLProductIFLEXUBS72ToSEBL782Async
- IFLEXUBSIntegQuerySCVCustSummSEBL782ToIFLEXUBS72Sync
- IFLEXUBSIntegQuerySCVTxnDetailsSEBL782ToIFLEXUBS72Sync
- IFLEXUBSIntegQueryTDAccountIFLEXUBS72ToSEBL782Async
- IFLEXUBSIntegQueueListenerSEBL782ToIFLEXUBS72Notify
- IFLEXUBSIntegRequestAccStmtSEBL782ToIFLEXUBS72Sync

Installation of BPEL process is slightly different depending on the Operation System on which BPEL SOA server is installed. Please, refer the relevant guidelines depending on the OS.

Windows Server

Please, click <u>here</u> for installation guidelines and know how information.

• UNIX/Linux Server

Please, click <u>here</u> for installation guidelines and know how information.



4. BPEL Process Deployment

4.1 **Deployment on Windows**

Following are the steps to be followed for installation.

All the below mentioned steps need to be done on the BPEL SOA server.

4.1.1 XSD File Maintenance In The SOA Server

1. Create a folder structure SEBLAcctOrigIntegPkIFLEXUBS\FCUBS_XSD under

<SOA_HOME>\bpel\system\xmlib

Note: *SOA_HOME* is the directory location where Oracle 10.1.3.1 SOA related files and folders are available. In this document we refer to the following directory location as **SOA_HOME**.

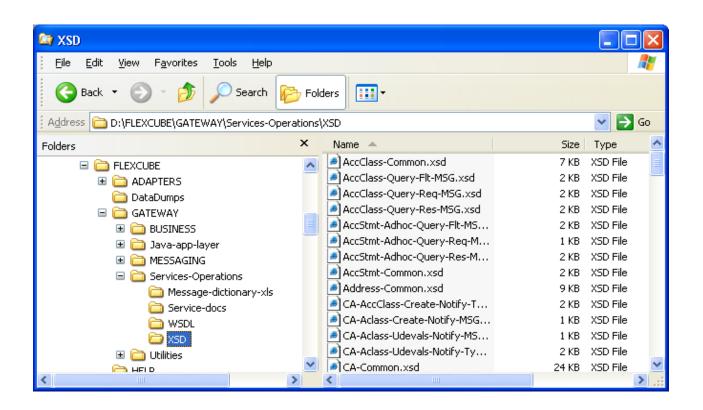
D:\product\10.1.3.1\OracleAS_1

 Copy the XSD files from the <FLEXCUBE_HOME>\GATEWAY\Service-Operations\XSD and paste it in the following location:

<SOA_HOME>\bpel\system\xmlib\SEBLAcctOrigIntegPkIFLEXUBS\FCUBS_XSD

<u>Note:</u> In this document, we refer to D:\FLEXCUBE as <FLEXCUBE_HOME>. Here, we consolidate all our source files, executable files and other files released.





4.1.2 Steps for Compiling and Deploying a BPEL Process

 Copy the zipped folder of the respective BPEL process from the <FCCROOT >\ADAPTERS\SIEBEL-CRM\BPEL and paste it inside a newly created folder [D:\FCC_BPEL_Process in this document] in your server machine. Unzip the folder.



| 😂 BPEL | | × |
|--|--------|------|
| <u>File E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp | _ | 7 |
| G Back 🔹 💮 🕤 🏂 🔎 Search 👘 Folders 💷 | | |
| Address 🗁 D:\FLEXCUBE\ADAPTERS\SIEBEL-CRM\BPEL | 🖌 🔁 Go | 5 |
| Folders Name 🔺 | Size | ^ |
| 🗉 🗀 FCCSIEBEL 🥂 🔍 IFLEXUBSIntegAccOrigWrapperSEBL782ToIFLEXUBS72Sync.zip | 335 KB | |
| EXECUTE TO THE REPORT OF THE R | 368 KB | |
| ADAPTERS | 325 KB | |
| 🗉 🦳 OGL | 328 KB | |
| Contraction of the second | 327 KB | |
| BPEL IFLEXUBSIntegModifyTDRolloverSEBL782ToIFLEXUBS72Sync.zip | 319 KB | |
| CNV I IFLEXUBSIntegQueryAccountClassIFLEXUBS72ToSEBL782Async.zip | 321 KB | |
| Consol_inc_cnv | 330 KB | |
| DDL | 20 KB | |
| EMB | 322 KB | |
| | 323 KB | - |
| INC | 345 KB | |
| | 339 KB | |
| Mapping_Docs | 21 KB | ~ |
| | > | 1.12 |

2. Open the BPEL process folder. In this document, BPEL process folder is in the location marked in red as shown in the screen-shot below. All further references to this folder will be made by saying *BPEL process folder*.

| IFLEXUBSIntegCreateAccSEBL782ToIFLEXUBS72Sync | | × |
|---|------------------------|---------------------------|
| <u>File E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp | | 7 |
| G Back 🔹 🕥 👻 🏂 Search 🔂 Folders 🛄 - | | |
| Address 🗁 D:\FCC_BPEL_Process\IFLEXUBSIntegCreateAccSEBL782ToIFLEXUBS72Sync | 🔁 G | 0 |
| Folders X Name A | Size | Ту |
| bysit constraints <liconstr< td=""><td>2 KB 10 KB 13 KB</td><td>File PR(XMI JPF</td></liconstr<> | 2 KB 10 KB 13 KB | File PR(XMI JPF |
| | | > |

3. Open the build.properties file.



| IFLEXUBSIntegCreateAccSEBL782ToIFLEXUBS72Sync | | × |
|---|-------|------|
| Eile Edit View Favorites Tools Help | | 7 |
| 🚱 Back 🔹 🕥 👻 🏂 Search 🔊 Folders | | |
| Address 🗁 D:\FCC_BPEL_Process\IFLEXUBSIntegCreateAccSEBL782ToIFLEXUBS72Sync 🛛 💽 | 🔁 Go | |
| Folders X Name A | Size | Ту |
| 🖃 🧰 FCC_BPEL_Process 🦷 🔁 📴 bpel | | File |
| IFLEXUBSIntegAccOrigWrapperSEBL7 | 2 KB | PR |
| IFLEXUBSIntegCreateAccSEBL782ToI Duild.xml 1 | l0 KB | ХМI |
| 🖃 🧰 bpel 🔤 IFLEXUBSIntegCreateAcc5EBL782ToIFLEXUBS725ync.jpr 1 | ІЗ КВ | JPF |
| 🛅 testsuites | | |
| 🗉 🛅 IFLEXUBSIntegCreateCustSEBL782Tc | | |
| 🗉 🧰 IFLEXUBSIntegModifyAccAddrSEBL78 | | |
| 🗉 🛅 IFLEXUBSIntegModifyCustSEBL782To | | |
| 🗉 🧰 IFLEXUBSIntegModifyTDRolloverSEBL | | |
| 🗉 🛅 IFLEXUBSIntegQueryAccountClassIFl | | |
| 🗉 🛅 IFLEXUBSIntegQueryAccountIFLEXUE | | |
| 🗉 🛅 IFLEXUBSIntegQueryCLAccountIFLEX | | |
| 🗉 🛅 IFLEXUBSIntegQueryCLProductIFLEX | | |
| | | |
| | | 2 |

4. Edit this file to override the default property settings. This file contains all the property fields with their default values. All the fields are generally commented. In case, we need to override the default value of a particular field, copy that particular line paste it to the very next line. Uncomment the newly created line and type the new value. Once everything is done save the file.

We will have to override the *admin.password* property value. Care should be taken to provide the correct Admin Password.



Use this file to OVERRIDE default properties when deploying this project # using "ant" from Developer Prompt or "ant" on project's build.xml in Jdev # These properties do not get used when deploying from Jdev project -> Deploy # AppServer platform: currently supported values are ias l0g, oc4j l0g #platform = ias_l0g # Change below if deploying in domain other than "default" #domain = default # Change below if deploying with process revision other than 1.0 #rev = 1.0# Make sure admin.user, admin.password is correct for appserver #admin.user = oc4jadmin #admin.password = admin.password =welcomel) # http.hostname and http.port should point to BPEL Server's host and http port #http.hostname = localhost #http.port = 9700 # For BPEL in cluster environemnt, j2ee.hostname may not be same as # http.hostname, where j2ee.hostname will be local hostname, # while http.hostname will be virtual hostname # For deployment of applications in oc4j cluster, set cluster = true # and oc4jinstancename to opmn cluster group it belongs to such as default group #cluster = false #j2ee.hostname = localhost # rmi.port or opmn.requestport is used in jndi.url/deployment-url in # standalone or midtier installation respectively. # rmi.port value below is default value as in BPEL standalone-developer install. # If you rely on this value, make sure it's correct for your installation # as from command "opmnctl status -1" output in midtier/SOA install. #rmi.port = 23791 #opmn.requestport = 6003 #oc4jinstancename = home

 Edit the .wsdl files under <BPEL process folder>/bpel to replace the each occurrence of http://bpelhost:8888 with http://<actual bpel host name>:port number. Also, replace each occurrence of http://gatewayhost:8888 with http://<actual gateway host name>:port number.



Before Replacement

```
</wsdl:operation>
       </wsdl:portType>
       <wsdl:binding name="FCUBSTDService" type="tns:FCUBSTDServiceSEI">
                <wsdlsoap:binding style="document" transport="<u>http://schemas.xmlsoap.org/soap/http</u>"/>
                <wsdl:operation name="CreateTDAcc">
                        <wsdlsoap:operation soapAction=""/>
                        <wsdl:input>
                               <wsdlsoap:body use="literal"/>
                        </wsdl:input>
                        <wsdl:output>
                                <wsdlsoap:body use="literal"/>
                        </wsdl:output>
                </wsdl:operation>
                <wsdl:operation name="ModifyTDRollover">
                        <wsdlsoap:operation soapAction=""/>
                        <wsdl:input>
                               <wsdlsoap:body use="literal"/>
                        </wsdl:input>
                        <wsdl:output>
                               <wsdlsoap:body use="literal"/>
                        </wsdl:output>
                </wsdl:operation>
       </wsdl:binding>
       <wsdl:service name="FCUBSTDService">
               <wsdl:port name="FCUBSTDServiceSEI" binding="tns:FCUBSTDService">
                       <soap:address xmlns:soap="<u>http://schemas.xmlsoap.org/wsdl/soap/</u>" location="<u>http://gatewayhost:8888yFCUBSTDServic</u>
               </wsdl:port>
       </wsdl:service>
</wsdl:definitions>
```

ORACLE

After Replacement

```
</wsdl:operation>
       </wsdl:portType>
       <wsdl:binding name="FCUBSTDService" type="tns:FCUBSTDServiceSEI">
               <wsdlsoap:binding style="document" transport="http://schemas.xmlsoap.org/soap/http"/>
               <wsdl:operation name="CreateTDAcc">
                       <wsdlsoap:operation soapAction=""/>
                       <wsdl:input>
                               <wsdlsoap:body use="literal"/>
                       </wsdl:input>
                       <wsdl:output>
                               <wsdlsoap:body use="literal"/>
                       </wsdl:output>
               </wsdl:operation>
               <wsdl:operation name="ModifyTDRollover">
                       <wsdlsoap:operation soapAction=""/>
                       <wsdl:input>
                               <wsdlsoap:body use="literal"/>
                       </wsdl:input>
                       <wsdl:output>
                               <wsdlsoap:body use="literal"/>
                       </wsdl:output>
               </wsdl:operation>
       </wsdl:binding>
       <wsdl:service name="FCUBSTDService">
               <wsdl:port name="FCUBSTDServiceSEI" binding="tns:FCUBSTDService">
                       <soap:address xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/" location="http://sdcdl360i306.corp.siebel.com:777)/FCUBSTDService
               </wsdl:port>
       </wsdl:service>
(/wsdl:definitions>
```

In this example actual gateway host name is sdcdl360i306.corp.siebel.com and Port Number is 7777.

Note: Name of *actual bpel host* can be either the name or IP address of the machine where BPEL Server is running.

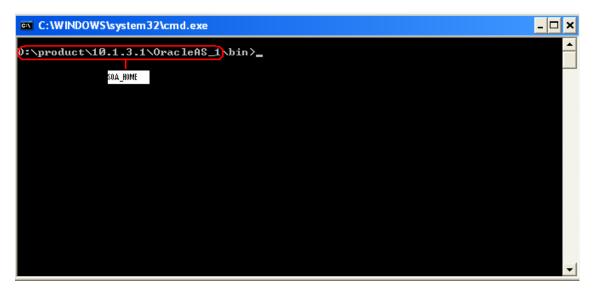
Name of *actual gateway host* can be either the name or IP address of the machine where gateway components are running.

This step should be followed while deploying any BPEL process.

Please, get the machine name and port number information from the URL of application server's home page.

- 1. Start the Application Server where BPEL is hosted.
- 2. Go to the command prompt.
- 3. Change the directory to <SOA_HOME>\bin. Make sure you are in <SOA_HOME>\bin.





Note: SOA_HOME can be at a different location. In this document SOA home is referred to this location.

4. Type runstartupconsole.bat start.

| C:\WINDOWS\system32\cmd.exe | - 🗆 | × |
|--|-----|---|
| D:\product\10.1.3.1\OracleAS_1\bin>funstartupconsole.bat start | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | - |

5. Once the server is up you will get the following:



| | 100% | |
|--|------------------|--------------|
| tatus: Component | Sub Component | Status |
| | | |
| | OC4J:home | Init |
| OC4JGroup:default_group ASG | OC4J:home ASG | Init Down |
| DC4JGroup:default_group ASG nstance Details: | ASG | Down |
| OC4JGroup:default_group | | |

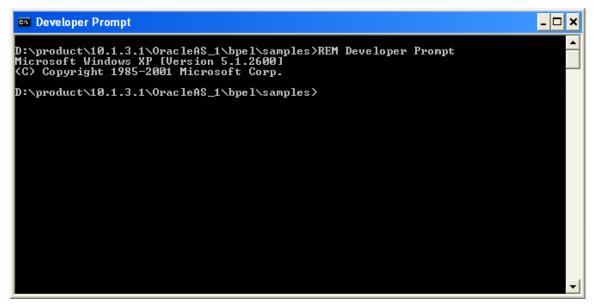
6. Now, click on the *start* menu and go to All Programs→Oracle-oc4jadmin→Oracle BPEL Process Manager→Developer Prompt as shown below.

Note: oc4jadmin is the instance name and this can be of different name.

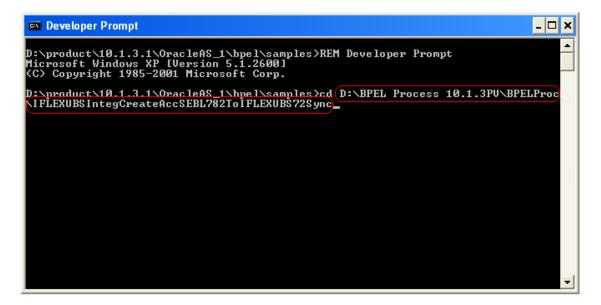
| 🗾 🖄 . | | | 10 <u>4</u> 10 <u>6</u> |
|---------------------------|-------------------------------------|----------------------------------|---|
| My Computer coCreateCu | 🔤 New Office Document | Outlook Express | Start SOA suite Stop SOA suite |
| | Con Office Document | 🧼 RealPlayer | |
| | Set Program Access and Defaults | 💫 Remote Assistance | |
| 🤕 🔮 | 💖 Windows Catalog | 🕑 Windows Media Player | |
| Recycle Bin coFinancialX. | 🦥 Windows Update | 🖄 Windows Messenger | BPEL Control ESB Control |
| | 📮 WinZip | 🎕 Windows Movie Maker | |
| 📶 🔮 | Accessories | 📾 Oracle - oc4jadmin 🕨 🕨 | Integrated Management Tools |
| Adobe Reader CoObj-Creat. | Games • | 🔣 TextPad | 📾 Oracle BPEL Process Manager 🔸 🐻 Developer Prompt |
| 7.0 | iBM WebSphere | Altova Enterprise XML Suite 2006 | 💼 Oracle ESB 🔹 🔸 🕘 Getting Started with Samples |
| | IBM WebSphere MO | | 💼 Oracle Installation Products 🔸 💣 Worklist Application |
| Santanu Paul-IF | <u> </u> | | m Oracle Process Manager |
| Gantana Faarin | microsoft Visual Studio 6.0 | | 🥌 SOA Launch Console |
| ~ | Network Associates | | |
| Different Explorer | m Oracle - oracle9icl | | |
| E-mail | m Oracle - OracleBPEL | | |
| Microsoft Office Out | Oracle for Windows NT | | |
| Shortcut to editplus | 🛅 Oracle Forms 6i 🔹 🕨 | | |
| Shortcut to editplus | i Oracle Forms 6i Admin | | |
| ClearCase Source Co | 🛅 Oracle Forms & Reports 6i 🔹 🕨 | | |
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| Shortcut to TextPad. | Cracle Installation Products | | |
| Oracle Assigned Port | Oracle Olap Client 2.2 | | |
| Numbers | Cracle Reports 6i | | |
| Shortcut to PLSQLDe | i Oracle Reports 6i Admin | | |
| Suprata an Estabo | 🛅 Real 🔹 🕨 | | |
| Remote Desktop Cor | 🛅 Startup 🕨 | | |
| 9 | C UltraVNC | | |
| | 🛅 WinZip 🕨 🕨 | | |
| All Programs 🜔 | 🚮 Adobe Reader 7.0 | | |
| | 🥌 Internet Explorer | | |
| | Microsoft Office Communicator 2005 | | |
| 🦺 start 🔰 🕄 🦉 | MSN | | ତ୍ 💽 🖓 🐙 🚺 11:09 AM |

7. Following screen will appear.



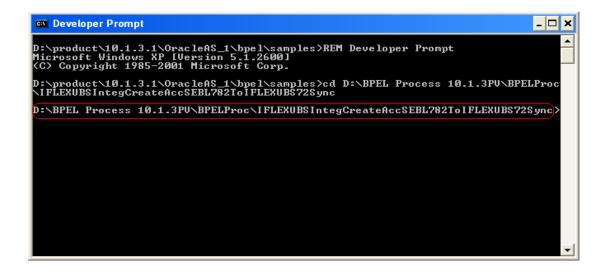


8. Change the directory to the BPEL process directory as shown below.

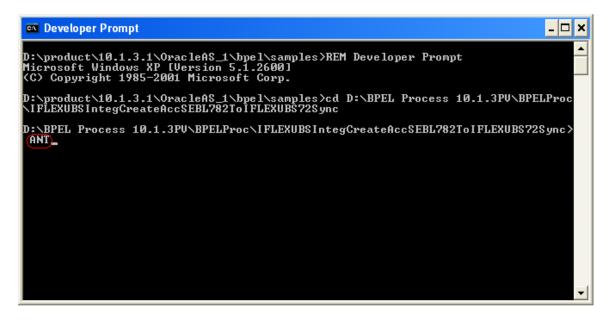


9. We will be in the BPEL process directory.





10. Type *ANT command* to compile and deploy the BPEL process. *ANT* uses the *build.xml* file present in the BPEL process directory. *build.xml* does a look-up in build.properties file to find the overridden field property value.



11. On successful completion of ANT, we will get a message saying BUILD Successful.



4.1.3 <u>Server Level Setting For Outbound BPEL Process</u>

- For the outbound BPEL process to work that listens on a remote queue which is configured on OC4J server where Gateway components are installed; we need to modify following two files in the machine where BPEL is hosted.
 - <SOA_HOME>\ j2ee\<OC4J Instance>\connectors\JmsAdapter\JmsAdapter\META-INF\oc4jra.xml
 - <SOA_HOME>\j2ee\<OC4J Instance>\application-deployments\default\JmsAdapter\oc4j-ra.xml

Copy the contents of oc4j-ra_connectionFactoryEntry.xml and paste them at the end of



the above two xml files. Contents of *oc4j-ra_connectionFactoryEntry.xml* should go inside the root element

<oc4j-connector-factories><....>

<....>

</oc4j-connector-factories>

Now, care should be taken to update the following with correct information:

- java.naming.provider.url=ormi://{Machine name where remote queue is hosted}:{ormi Port}
- java.naming.security.principal={Admin User name of remote OC4J Application Server}
- java.naming.security.credentials={Admin User Password}

```
<connector-factory location="eis/Remote0C4JJMS/Queue" connector-name="JmsAdapter">
        <config-property name="connectionFactoryLocation" value="jms/QueueConnectionFactory" />
        <config-property name="factoryProperties"
        value="java.naming.factory.initial=com.evermind.server.ApplicationClientInitialContextFactory;
        java.naming.provider.url=ormi://cvrhp1534:23791;
        java.naming.security.principal=oc4jadmin;
        java.naming.security.credentials=oc4jadmin" />
        <config-property name="acknowledgeMode" value="AUTO_ACKNOWLEDGE" />
        <config-property name="isTopic" value="false" />
        <config-property name="isTopic" value="false" />
        <config-property name="isTransacted" value="cotjadmin" />
        </c
```

Note: *ormi* Port information is available in this file <SOA_HOME>\opmn\conf\opmn.xml.

Look for this text 'port id="rmi" range' in the file opmn.xml. Also, whenever password of



Remote OC4J Application Server is changed; oc4j-ra.xml files should also be modified. This is very critical for the functioning of Notification Process.

2. Place the following xml file here <SOA_HOME>\bpel\system\classes\META-INF.



- 3. Stop the server.
 - Go to the command prompt.
 - Change the directory to <SOA_HOME>\bin. Make sure you are in <SOA_HOME>\bin.

| C:\WINDOWS\system32\cmd.exe | - 🗆 X |
|--|----------|
| 0:\product\10.1.3.1\0racleAS_1\bin>_ SOA_HOME | |
| | |
| | |
| | |
| | |
| | _ |

Note: SOA_HOME can be at a different location. In this document SOA home is referred to this location.

• Type runstartupconsole.bat stop.



| 🗠 C:\WINDOWS\system32\cmd.exe | | × |
|--|---|---|
| D:\product\10.1.3.1\0racleAS_1\bin\runstartupconsole.bat_stop_ | - | |
| | | |
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| | | - |

• Once the server is stopped, we shall get the following screen.

| Stopping Oracle Application S | erver | |
|--|---|--------------------|
| Mid-tier services (oc4jadmin.cvrhp1511 | .i-flex.com) : OPMN is already stopped | |
| | 100% | |
| Status: | | |
| Component | Sub Component | Status |
| | | |
| Instance Details: | | |
| Instance Details: Oracle Home | Instance Name | Version |
| | Instance Name oc4jadmin.cvrhp1511.i-flex.com | Version 10.1.3.1.0 |
| Oracle Home | | |

4. Re-start the server. Click <u>here</u> for help.



4.2 **Deployment on Unix/Linux**

Following are the steps to be followed for installation

All the below mentioned steps need to be done on the BPEL SOA server.

4.2.1 XSD File Maintenance In The SOA Server

Create a folder structure SEBLAcctOrigIntegPkIFLEXUBS/FCUBS_XSD under

<SOA_HOME>/bpel/system/xmlib

Note: SOA_HOME is the directory location where Oracle 10.1.3.1 SOA related files and folders are available. In this document we refer to the following directory location as SOA_HOME:

/d1/oracle/product/10.1.3.1/OracleAS_1

 Copy the XSD files from the <FLEXCUBE_HOME>/GATEWAY/Service-Operations/XSD to the following location:

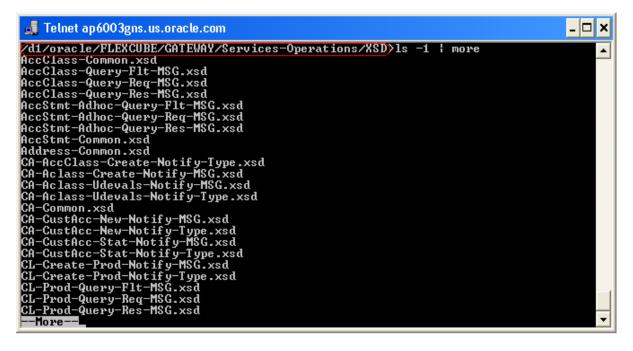
<SOA_HOME>/bpel/system/xmlib/SEBLAcctOrigIntegPkIFLEXUBS/FCUBS_XSD

<u>Note:</u> In this document, we refer to \$HOME/FLEXCUBE as <FLEXCUBE_HOME>. Here, we consolidate all our source files, executable files and other files released.

\$HOME is the directory location which a user finds on logging into a UNIX/Linux server. In this document following is the *HOME* directory:

/d1/oracle

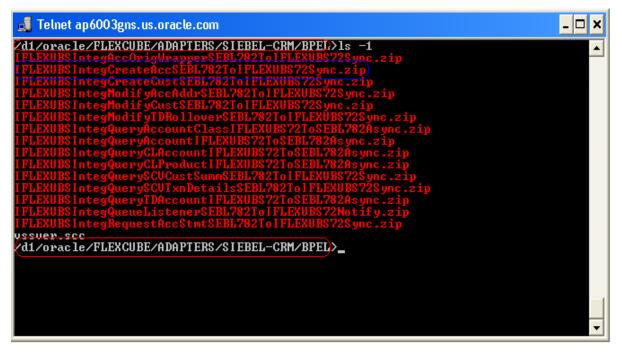




4.2.2 Steps for compiling and deploying a BPEL process

 Copy the zipped folder of the respective BPEL process from the <FLEXCUBE_HOME>/ADAPTERS/SIEBEL-CRM/BPEL and paste it inside a newly created folder [\$HOME/FCC_BPEL_Process in this document] in your server machine. Unzip the folder.



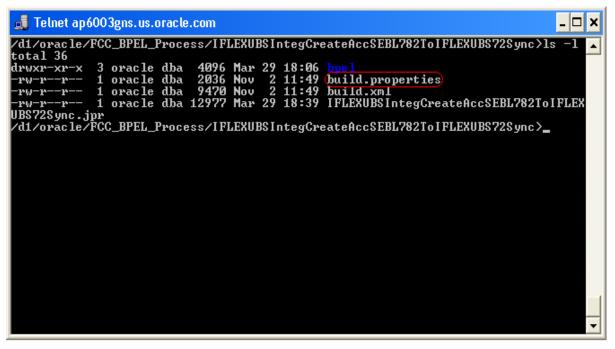


 Open the BPEL process folder. In this document, BPEL process folder is in the location marked in red as shown in the screen-shot below. All further references to this folder will be made by saying BPEL process folder.

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|--|--|
| /d1/oracle/l | 'CC_BPEL_Process∕IFLEXUBSIntegCreateAccSEBL782ToIFLEXUBS72Sync≫ls -1 🔽 |
| total 36 drwxr-xr-x -rw-rr -rw-rr | 3 oracle dba 4096 Mar 29 18:06 bpel 1 oracle dba 2036 Nov 2 11:49 build.properties 1 oracle dba 9470 Nov 2 11:49 build.xml 1 oracle dba 12977 Mar 29 18:39 IFLEXUBSIntegCreateAccSEBL782ToIFLEX |
| UBS72Sync.j | |
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3. Open the build.properties file.



4. Edit this file to override the default property settings. This file contains all the property fields with their default values. All the fields are generally commented. In case, we need to override the default value of a particular field, copy that particular line paste it to the very next line. Uncomment the newly created line and type the new value. Once everything is done save the file.

We will have to override the *admin.password* property value. Care should be taken to provide the correct Admin Password.



Use this file to OVERRIDE default properties when deploying this project # using "ant" from Developer Prompt or "ant" on project's build.xml in Jdev # These properties do not get used when deploying from Jdev project -> Deploy # AppServer platform: currently supported values are ias l0g, oc4j l0g #platform = ias_l0g # Change below if deploying in domain other than "default" #domain = default # Change below if deploying with process revision other than 1.0 #rev = 1.0# Make sure admin.user, admin.password is correct for appserver #admin.user = oc4jadmin #admin.password = admin.password =welcomel) # http.hostname and http.port should point to BPEL Server's host and http port #http.hostname = localhost #http.port = 9700 # For BPEL in cluster environemnt, j2ee.hostname may not be same as # http.hostname, where j2ee.hostname will be local hostname, # while http.hostname will be virtual hostname # For deployment of applications in oc4j cluster, set cluster = true # and oc4jinstancename to opmn cluster group it belongs to such as default group #cluster = false #j2ee.hostname = localhost # rmi.port or opmn.requestport is used in jndi.url/deployment-url in # standalone or midtier installation respectively. # rmi.port value below is default value as in BPEL standalone-developer install. # If you rely on this value, make sure it's correct for your installation # as from command "opmnctl status -1" output in midtier/SOA install. #rmi.port = 23791 #opmn.requestport = 6003 #oc4jinstancename = home

 Edit the .wsdl files under <BPEL process folder>/bpel to replace each occurrence of <u>http://bpelhost:8888</u> with http://<actual bpel host name>:port number. Also, replace each occurrence of <u>http://gatewayhost:8888</u> with http://<actual gateway host name>:port number.

E.g.

Before Replacement



```
</wsdl:operation>
</wsdl:portType>
<wsdl:binding name="FCUBSTDService" type="tns:FCUBSTDServiceSEI">
        <wsdlsoap:binding style="document" transport="http://schemas.xmlsoap.org/soap/http"/>
        <wsdl:operation name="CreateTDAcc">
               <wsdlsoap:operation soapAction=""/>
               <wsdl:input>
                       <wsdlsoap:body use="literal"/>
               </wsdl:input>
               <wsdl:output>
                       <wsdlsoap:body use="literal"/>
               </wsdl:output>
        </wsdl:operation>
       <wsdl:operation name="ModifyTDRollover">
                <wsdlsoap:operation soapAction=""/>
               <wsdl:input>
                       <wsdlsoap:body use="literal"/>
               </wsdl:input>
               <wsdl:output>
                       <wsdlsoap:body use="literal"/>
               </wsdl:output>
       </wsdl:operation>
</wsdl:binding>
<wsdl:service name="FCUBSTDService">
        <wsdl:port name="FCUBSTDServiceSEI" binding="tns:FCUBSTDService">
               <soap:address xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/" location="%http://gatewayhost:8888yFCUBSTDServic
       </wsdl:port>
</wsdl:service>
```

```
</wsdl:definitions>
```



After Replacement

```
</wsdi:operation>
       </wsdl:portType>
       <wsdl:binding name="FCUBSTDService" type="tns:FCUBSTDServiceSEI">
               <wsdlsoap:binding style="document" transport="http://schemas.xmlsoap.org/soap/http"/>
               <wsdl:operation name="CreateTDAcc">
                       <wsdlsoap:operation soapAction=""/>
                       <wsdl:input>
                               <wsdlsoap:body use="literal"/>
                       </wsdl:input>
                       <wsdl:output>
                               <wsdlsoap:body use="literal"/>
                       </wsdl:output>
               </wsdl:operation>
               <wsdl:operation name="ModifyTDRollover">
                       <wsdlsoap:operation soapAction=""/>
                       <wsdl:input>
                               <wsdlsoap:body use="literal"/>
                       </wsdl:input>
                       <wsdl:output>
                               <wsdlsoap:body use="literal"/>
                       </wsdl:output>
               </wsdl:operation>
       </wsdl:binding>
       <wsdl:service name="FCUBSTDService">
               <wsdl:port name="FCUBSTDServiceSEI" binding="tns:FCUBSTDService">
                       <soap:address xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/" location="http://sdcdl360i306.corp.siebel.com:777)/FCUBSTDService
               </wsdl:port>
       </wsdl:service>
(/wsdl:definitions>
```

In this example actual gateway host name is sdcdl360i306.corp.siebel.com and Port Number is 7777.

Note: Name of *actual bpel host* can be either the name or IP address of the machine where BPEL Server is running.

Name of *actual gateway host* can be either the name or IP address of the machine where gateway components are running.

This step should be followed while deploying any BPEL process.

Please, get the machine name and port number information from the URL of application server's home page.

- 1. Start the Application Server where BPEL is hosted.
- 2. Go to the HOME directory.
- 3. Change the directory to <SOA_HOME>/opmn/bin. Make sure you are in <SOA_HOME>/opmn/bin.



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| d1/oracle/product/10.1.3.1/OracleAS_1/opmn/bin>_ | | - |
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| 30A_HOME | | |
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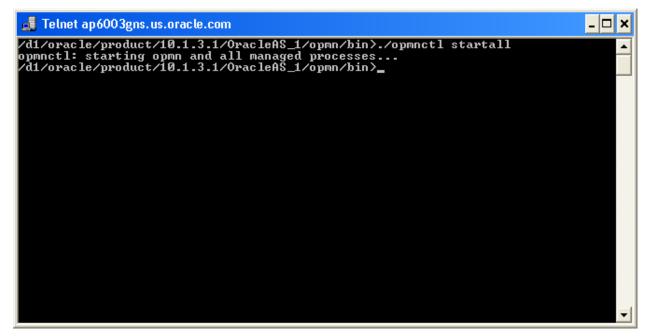
Note: SOA_HOME can be at a different location. In this document SOA home is referred to this location.

4. Type ./opmnctl startall.

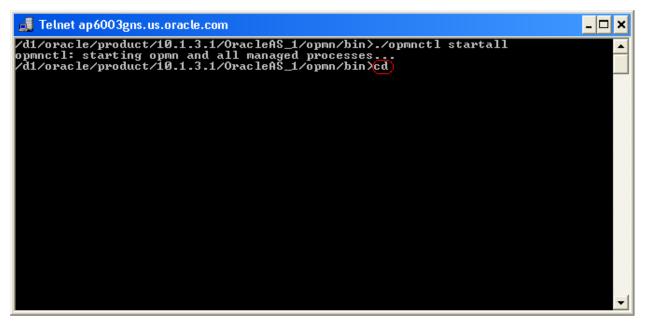
| 📕 Telnet ap6003gns.us.oracle.com | | × |
|---|---|---|
| /d1/oracle/product/10.1.3.1/OracleAS_1/opmn/bin>./opmnctl startall_ | | - |
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5. Once the server is up you will get the following



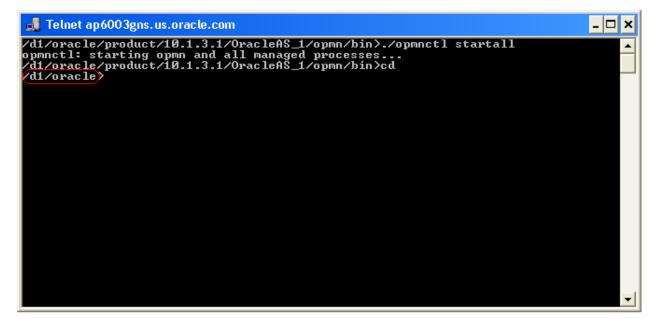


6. Now, change the directory to the **\$HOME** directory.

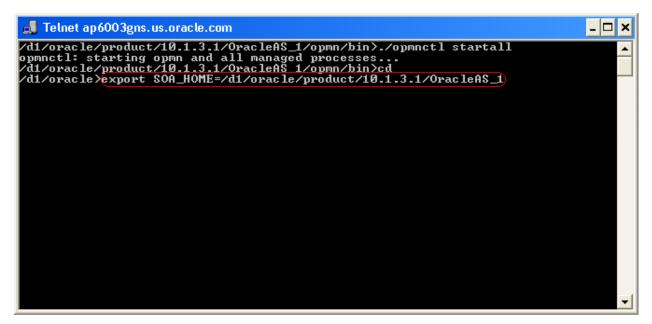


7. We shall get the following screen.



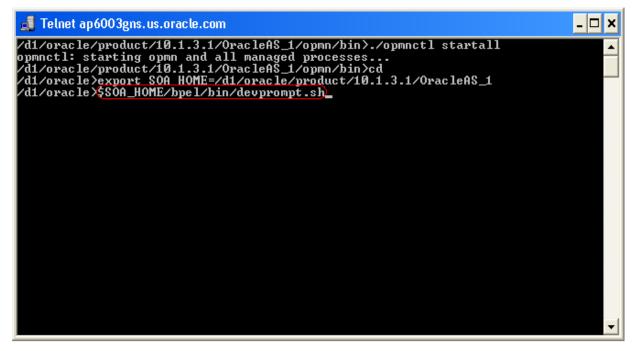


8. Now, set the **SOA_HOME** directory.

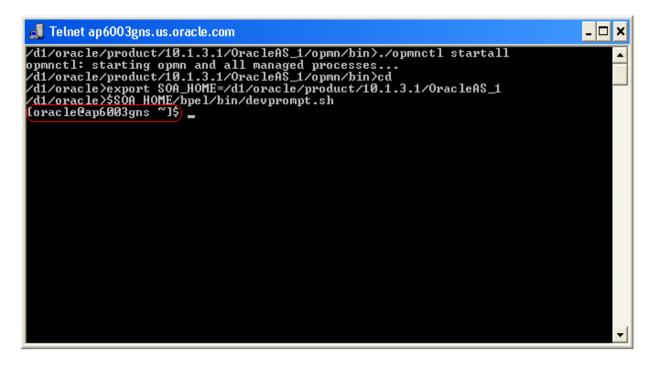


9. Run the following shell script.





10. If you get a different directory prompt as shown in the screen-shot below then, set the **PS1** environment variable to **\$PWD** value i.e. present working directory.





11. Run the following command to set the $\ensuremath{\textit{PS1}}$ value.

| 🛃 Telnet ap6003gns.us.oracle.com | - 🗆 🗙 |
|--|----------|
| <pre>/dl/oracle/product/10.1.3.1/OracleAS_1/opmn/bin>./opmnctl startall opmnctl: starting opmn and all managed processes /d1/oracle/product/10.1.3.1/OracleAS_1/opmn/bin>cd /d1/oracle>export SOA_HOME=/d1/oracle/product/10.1.3.1/OracleAS_1 /d1/oracle>\$SOA_HOME/bpe1/bin/devprompt.sh [oracle@ap6003gns ~]\$ (export PS1='\$PWD>';clear).</pre> | |
| | |
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12. We shall get the following screen.



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| /d1/oracle> | | |
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13. Change the directory to the BPEL process directory as shown below.

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|--|------|----------|
| /d1/oracle>cd /d1/oracle/FCC_BPEL_Process/IFLEXUBSIntegCreateAccSEBL782ToIFL BS72Sync | EXU) | - |
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14. We will be in the BPEL process directory.



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|--|------|---|
| /d1/oracle>cd /d1/oracle/FCC_BPEL_Process/IFLEXUBSIntegCreateAccSEBL782ToIFL BS72Sync | 'EXN | |
| <pre>/d1/oracle/FCC_BPEL_Process/IFLEXUBSIntegCreateAccSEBL782ToIFLEXUBS72Sync/</pre> | | |
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15. Type *ant* command to compile and deploy the BPEL process. *ant* uses the *build.xml* file present in the BPEL process directory. *build.xml* does a look-up in build.properties file to find the overridden field property

value.

| 🛃 Telnet ap6003gns.us.oracle.com | - 🗆 | × |
|---|-----|---|
| /d1/oracle>cd /d1/oracle/FCC_BPEL_Process/IFLEXUBSIntegCreateAccSEBL782ToIFLI BS72Sync | EXU | |
| /d1/oracle/FCC_BPEL_Process/IFLEXUBSIntegCreateAccSEBL782ToIFLEXUBS72Sync>ant |) | |
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16. On successful completion of *ant*, we will get a message saying *BUILD Successful*.



4.2.3 Server Level Setting For Outbound BPEL Process

- For the outbound BPEL process to work that listens on a remote queue which is configured on OC4J server where Gateway components are installed; we need to modify following two files in the machine where BPEL is hosted.
 - <SOA_HOME>/j2ee/<OC4J
 /connectors/JmsAdapter/JmsAdapter/JmsAdapter/META-INF/oc4j-ra.xml
 - <SOA_HOME>/j2ee/< OC4J Instance Name>/applicationdeployments/default/JmsAdapter/oc4j-ra.xml

Copy the contents of oc4j-ra_connectionFactoryEntry.xml and paste them at the end of



the above two xml files. Contents of **oc4j-ra_connectionFactoryEntry.xml** should go inside the root element

<oc4j-connector-factories>

<....>

<....>

</oc4j-connector-factories>

Now, care should be taken to update the following with correct information

- java.naming.provider.url=ormi://{ Machine name in which Gateway infrastructure is hosted}:{ormi Port}
- java.naming.security.principal={Admin User name of remote OC4J Application Server}
- java.naming.security.credentials={Admin User Password}



```
<connector-factory location="eis/RemoteOC4JJMS/Queue" connector-name="JmsAdapter">
        <config-property name="connectionFactoryLocation" value="jms/QueueConnectionFactory" />
        <config-property name="factoryProperties"
        value="java.naming.factory.initial=com.evermind.server.ApplicationClientInitialContextFactory;
        java.naming.provider.url=ormi://cvrhp1534:23791;
        java.naming.security.principal=oc4jadmin;
        java.naming.security.credentials=oc4jadmin" />
        <config-property name="acknowledgeMode" value="AUTO_ACKNOWLEDGE" />
        <config-property name="isTopic" value="false" />
        <config-property name="isTransacted" value="false" />
        <config-property name="isTransacted" value="false" />
        <config-property name="username" value="oc4jadmin" />
```

Note: ormi Port information is available in this file <SOA_HOME>/opmn/conf/opmn.xml.

Look for this text 'port id="rmi" range' in the file opmn.xml. Also, whenever password of

Remote OC4J Application Server is changed; oc4j-ra.xml files should also be modified. This is

very critical for the functioning of Notification Process.

2. Place the following xml file here <SOA_HOME>/bpel/system/classes/META-INF.



- 3. Stop the server.
- 4. Go to the command prompt.
- 5. Change the directory to <SOA_HOME>/opmn/bin. Make sure you are in <SOA_HOME>/opmn/bin.

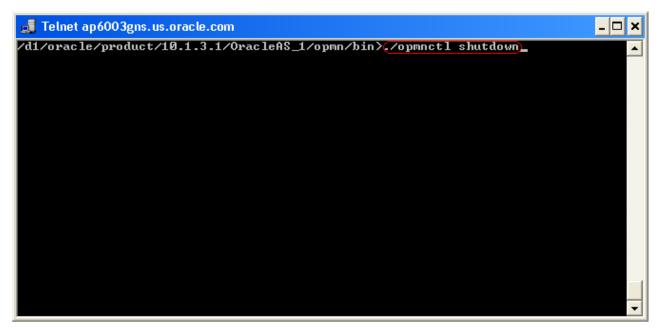


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| d1/oracle/product/10.1.3.1/OracleAS_1/opmn/bin>_ | |
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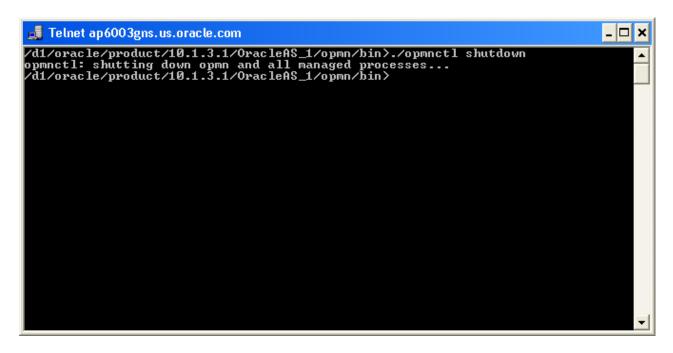
Note: SOA_HOME can be at a different location. In this document SOA home is referred to this location.



6. Type ./opmnctl shutdown.



7. Once the server is stopped, we shall get the following screen.



8. Re-start the server. Click <u>here</u> for help.



5. Updation of DVM

FLEXCUBE and Siebel CRM applications use different values to represent the same information. For example, FLEXCUBE may have a field with a value as "**P**" while Siebel may represent it as "**Primary**". A Domain value map enables you to associate values from one application with values from another.

As part of this integration, DVMs are created for maintaining the value translation of several fields. Of these DVMs, there are certain mapping files in which the values of both the systems are fixed and they are factory shipped with these values. There are certain DVMs in which value for one or both the application can be determined only at the time of installation. These DVMs will be shipped as part of the installable but will have to updated by the implementation team.

Following are the DVMs that need to be updated

- FINANCIAL ACCOUNT CUSTOMER TYPE
- FINANCIAL ACCOUNT ADDRESS TYPE

Customer Category Maintenance

Customer Category is one of the mandatory fields in Customer creation. This is maintainable by the bank and is generally done at the time of installation.

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| - 🌸 Account Class UDE | | | | | | |
| 🗄 🕂 🧇 Account Classes | 🙀 Customer Cate | egory - Detail View | / | | | |
| - 💭 Account Provisioning | Customer Catego | ory | | | _ | |
| 🗈 🧼 Amount Blocks | | Individual | 1 | 🗖 Maintain Customer Log | | |
| E- Cust Classification | Category | | | i Maintain Customer Log | | |
| 🖻 - 🧶 Cust Group Code | Description | Individual | | | | |
| 🖳 🧶 Cust Grp Tax Waiver | | | | | | |
| — 💭 Cust. Margin Maint | Input By | Datetime | Auth By | Datetime Mod No Status | | |
| E- Customer Address | SCRIPT5 2 | 8-DEC-1999 16:08:45 | SCRIPT5 | 28-DEC-1999 16:08:46 1 🔽 Authorised 🔽 | Open | |
| Customer Categories | | | | | | |

The below screen shot shows the Customer Category maintenance

As part of the Siebel CRM installation, the bank needs to decide on the category code that will be used for creating the Customers from Siebel CRM.



Since the FLEXCUBE value of this field is maintainable by the bank, "IFlexUBS" values in DVM are not shipped. "IFlexUBS" values of corresponding "Siebel" values are required to be updated during implementation and should be decided by the bank.

Ex: Siebel CRM is used for creating normal individual Customers. In the above example, the category is shown as "Individual".

Steps for updating the DVM- FINANCIAL ACCOUNT CUSTOMER TYPE

- 1. In the browser, open the URL of Oracle ESB Control.
- 2. In the Maps view of Oracle ESB Control, click the Create down-arrow on the left side of the window. Two choices are presented: Create a new map and Import a new map.
- 3. Click Import a new map to open the Import a New Map dialog.
- 4. In the Import a New Map dialog box, follow these steps:
 - In the Import field, enter the complete specification for the file on the local file system that you want to import or use Browse to locate the file.
 - The imported domain-value map will be displayed.
- 5. Corresponding to the row having the "Siebel" value as "Individual", enter the value maintained in FLEXCUBE under the column "IFlexUBS".

Account Address Location Type Maintenance

Account address location type is one of the mandatory fields in Account creation. This is maintainable by the bank and is generally done at the time of installation.

The below screen shot shows the Account Address Location Type maintenance



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As part of the Siebel CRM installation, the bank needs to decide on the location code that will be used for creating the Accounts from Siebel CRM.

Since the FLEXCUBE value of this field is maintainable by the bank, "IFlexUBS" values in DVM are not shipped. "IFlexUBS" values of corresponding "Siebel" values are required to be updated during implementation and should be decided by the bank.

As a part of this integration, Siebel's CRM application maintains three different Address Location Types. Following are the Siebel-CRM's Address Location Types:

- 1. Home
- 2. Business
- 3. Alternate

In FLEXCUBE, it is required to maintain the corresponding "IFlexUBS" value for all the above three Address Location Types and same should be updated in DVM also.

Ex: Siebel CRM is used for creating Accounts which include Saving Account, Checking Account, and Term Deposit Account. For all these types of account, we can have multiple address details attached to an account. However, these address details should be of different location type. In the above example, the location type is shown as "HOME".

Steps for updating the DVM- FINANCIAL ACCOUNT ADDRESS TYPE

- 1. In the browser, open the URL of Oracle ESB Control
- 2. In the Maps view of Oracle ESB Control, click the Create down-arrow on the left side of the window. Two choices are presented: Create a new map and Import a new map.



- 3. Click Import a new map to open the Import a New Map dialog.
- 4. In the Import a New Map dialog box, follow these steps:
 - In the Import field, enter the complete specification for the file on the local file system that you want to import or use Browse to locate the file.
 - The imported domain-value map will be displayed.
- 5. Corresponding to the row having the "Siebel" value as "Home", enter the value maintained in FLEXCUBE under the column "IFlexUBS".



6. Siebel CRM Adapter – Database Configuration

Once the base *FLEXCUBE* installation is complete (Host and Gateway) the following instructions is be followed to install/maintain database related components that are specific to the Siebel integration.

6.1 Installation

- 1. Open the Oracle Client (SQLPLUSW).
- 2. Login into the FLEXCUBE schema.
- 3. Run the following command at the command prompt:

@<<FCCROOT>>\Adapters\SIEBEL-CRM\Utilities\DB-install\UBS_SIEBEL-CRM_INSTALL

Where: <<FCCROOT>> refers to the folder in which all the relevant FLEXCUBE releases are consolidated.

Ex: If all the sources are consolidated in D:\FLEXCUBE directory then

- 4. Installation script will request for providing following information at the command prompt.
 - Adapter Path: Provide 'ADAPTERS' folder location under FLEXCUBE UBS source directory. Ex : <<FCCROOT>>\ADAPTERS
 - FLEXCUBE Schema Name: Provide name of the schema where FLEXCUBE UBS is installed.
 - FLEXCUBE Schema Password: Provide password for FLEXCUBE Schema.
 - Schema connect string Name: Provides database name for connecting to FLEXCUBE UBS database.
 - SIEBEL CRM Schema Name: Ignore this request and just type Enter.
 - SIEBEL CRM Schema Password: Ignore this request and just type Enter.
 - Schema connect string Name: Ignore this request and just type Enter.
- 5. On providing above details, installation will start and required Siebel CRM Adapter components will be deployed.

Successful installation will be prompted on the screen at SQL command prompt.



7. FLEXCUBE Settings for Siebel CRM Integration

7.1 Introduction

For the integration of FLEXCUBE with Siebel CRM, there are a few specific settings that need to be done. These are specific maintenances which are required for this integration only. They are:

- 1. Enabling Auto Generation of Customer number
- 2. Enabling Auto Generation of Customer Account number

7.2 Auto-Generation of Customer Number

Customer Number in FLEXCUBE needs to be auto generated as part of any customer creation request. For setting this follow the below steps:

- 1. Login to FLEXCUBE
- 2. Change the branch to the headoffice.
- 3. Go to the node Bank Parameters → Bank Parameters → Detailed. This will open up a screen titled "Bank-Wide parameters - Detailed"
- 4. Click the "Unlock" button in the top menu bar
- 5. Set the value of mask that will be used for the generation of customer number in the field corresponding to "CIF Mask"
- 6. Click the "Preferences" button.
- 7. In the Preferences screen, enable the option "Auto-Generate CIF numbers". Once this is done, click the "Ok" button
- 8. In the main screen, click the "Save" button in the top menu bar.
- 9. Login to FLEXCUE with another id which has authorization rights. Repeat step(2)
- 10. Authorize the record.

7.3 Auto-Generation of Customer Account Number

Customer Account Number in FLEXCUBE needs to be auto generated as part of any customer account creation request. For setting this follow the below steps:

- 1. Login to FLEXCUBE
- 2. Change the branch to the headoffice.
- 3. Go to the node Branch Parameters → Branch Parameters → Detailed. This will open up a screen titled "Bank parameters Detailed View"



- 4. Navigate the to the Branch code in which this change has to be done.
- 5. Click the "Unlock" button in the top menu bar.
- 6. Set the value of mask that will be used for the generation of customer number in the field corresponding to "CIF Mask"
- 7. Click the "AcMask" button. This will open up a screen titled "Account parameters"
- 8. Populate the details necessary in the screen. Once this is done, click the "Ok" button.
- 9. In the main screen, click the "Save" button in the top menu bar.
- 10. Login to FLEXCUE with another id which has authorization rights. Repeat step(2) and authorize the record.
- 11. Repeat the steps 3 to 10 for all the branches in which this Auto account generation needs to be set.

7.4 Customer Details Data Rectification

Important Note

- This section needs to be referred only in an implementation scenario in which FLEXCUBE has already been installed and Siebel CRM is being installed at a later point of time.
- This step needs to be done prior to the extraction of ASCII files that are to given to Siebel for loading the existing customers.

Details

As per the design of FLEXCUBE, the first and last names of a customer of type "Individual" which appear under the Personal Details tab are optional. The below screen shot shows the Personal Details screen in FLEXCUBE. The First name and Last name are highlighted by rounded rectangle.



| 🙀 Customer Information Maintenance | | | |
|--|--|--|--|
| Basic Details | Personal Details Corpo | irate Details | Custom Information |
| Prefix 1 Q Prefix 2 Q Prefix 3 Q | ⊙ Male ○ Female | Date | Guardian Minor Of Birth 29-JUN-1970 |
| Name (First, Middle, Last) | - | Permanent Add | fress |
| Scott | 2 | 20, Ring Road | |
| | _ | Bangalore India | |
| Tiger | J | IND | |
| Domicile Address | Resident Status Resident Non Resident National ID | Fax 2356854 email scott.tiger@ Tel 2356855 | |
| Expiry Date | | | |

The implementation team needs to check if any customers exist who do not need to First name and Last name. As these two fields are mandatory in Siebel, the Bank needs to populate these two fields before extraction of Customer data is done.

7.5 ASCII Data handoff - Extraction Criteria

Important Note

This section needs to be referred only in an implementation scenario in which FLEXCUBE has already been installed and Siebel CRM is being installed at a later point of time.

Details

The first step in the integration is the extraction of existing data from FLEXCUBE and sending them to Siebel. This is done for the following entities

- Customer
- Savings / Current Account
- Term Deposit



As part of the software shipped for this integration, scripts are provided for extracting these into ASCII files in a pre-determined format.Nevertheless, at the time of implementation the Bank may decide to migrate only a certain type of customer and accounts to Siebel. Hence the extraction criteria may be vary depending upon the Banks requirement.

| Туре | Condition | | | |
|---------------------------|--|--|--|--|
| Customer Extract | All customers records which are | | | |
| | Individual type | | | |
| | Open | | | |
| | Authorized | | | |
| | are considered | | | |
| Savings / Current Account | All savings / current accounts which are | | | |
| | Underlying customer is Individual type | | | |
| | Open | | | |
| | Authorized | | | |
| | are considered | | | |
| Term Deposit | All term deposit accounts which are | | | |
| | Underlying customer is Individual type | | | |
| | Open | | | |
| | Authorized | | | |
| | are considered | | | |

In the factory shipped scripts, following is the criteria:

If any change is required in the extraction condition, then the implementation team needs to modify the scripts accordingly.

The scripts are located in Adapters\SIEBEL-CRM\SQL folder in the consolidated FLEXCUBE installation folder.

7.6 <u>Retail Teller Product Maintenance for Savings/Current</u> <u>Account Creation</u>

7.6.1 Introduction

In the request for creating a new savings/current account, Siebel can provide funding details if funding needs to be done as part of the account creation. If funding is provided, then once the new account is created, it is funded. This is accomplished though a Retail teller contract.



7.6.2 Details

The Retail teller product that will be used for this is **SBLF.** This name is used internally in the account creation BPEL process.

- For creating the product, the maintenance is done under Teller → Retail Teller → Product Maintenance in the FLEXCUBE Application Browser
- When creating this product, the product type has to be AT (Account to Account Transfer).
- Arc Maintenance under Retail Teller Maint → Maintenance → Detail





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Oracle Financial Services Software Limited Oracle Park Off Western Express Highway Goregaon (East) Mumbai, Maharashtra 400 063 India

Worldwide Inquiries: Phone: +91 22 6718 3000 Fax:+91 22 6718 3001 www.oracle.com/financialservices/

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