Oracle FLEXCUBE Core Banking

Oracle FLEXCUBE-CORE Host Installation Guide (Application Server)

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Introduction

This guide is helpful for initial setup of WebLogic (12c) – version 12.1.2. BEA WebLogic server which is an enterprise-ready java EE application server that supports the deployment of mission critical application in a robust, secure, highly available and scalable environment. WebLogic is an ideal foundation for building applications based on Service Oriented Architecture (SOA).

Base System Configurations

Hardware

Here we strongly suggest you to verify your target installation machine's environment and make sure it meets the minimum hardware requirement as specified below

CPU: 1.0 GHz

Hard Disk: 5GB free space

Memory: 1GB free

Network: 100M Ethernet connection

Operating Systems

FLEXCUBE-CORE Host applications were built on Java technology. It supports multiple operating systems. You can run host system on

Oracle Linux or RedHat Enterprise Linux

Here, as a default system environment, we have certified installing and running FLEXCUBE-CORE host. We guide you through every step to install on an oracle linux machine as a sample.

Pre-Requisites

The pre-requisites required for installing FLEXCUBE-CORE host via OUI is given below:

- 1. An admin user needs to be created on the host machine via which the OUI will be run. Please make sure that the machine on which the OUI is being run has no previous instances of FLEXCUBE-CORE installed to ensure a clean run.
- 2. JDK 1.7_80 must be installed on the host machine.
- 3. WebLogic (12c) version **12.1.3** must be installed on the host machine, having the above mentioned JDK 1.7_80 as its java home during installation.
- 4. To enable remote connection between host server machine and local machine, we need a software like VNC viewer (freeware and recommended) or Xmanager in order to access the remote host installer machine and get UI for the installer during installation. (It is assumed that user has the software installed on his machine (VNC viewer recommended) and is well conversant in using the same). Refer to appendix point 5.5)Remote server connection using VNC viewer for guidance to connect to host installation machine
- 5. Please ensure that the language support for Chinese is enabled at time of OS installation

Note: The admin user should be used install both JDK1.7_80 and WebLogic (12c) so that during installation, OUI will have full access to all Weblogic and JDK files and folders.

For all the above mentioned pre-requisites, please contact your System Administrator.

Host Installation

Acquire FLEXCUBE-CORE Host Installer Distribution

You can get FC CORE host installer distributed version over the network or on a CD/DVD. The FC CORE host installer runs with graphic user interface to make the customer configuration of FC CORE host on local environment easy.

Please make sure you acquire the correct installation version for your operation system. The FLEXCUBE-CORE host installer supports the following OS

Unix

Linux

Launch Installer

Note: To run the OUI, you may need a user interface software VNC viewer to be run first so as to export the display to the local machine where the user can see all the screens properly.

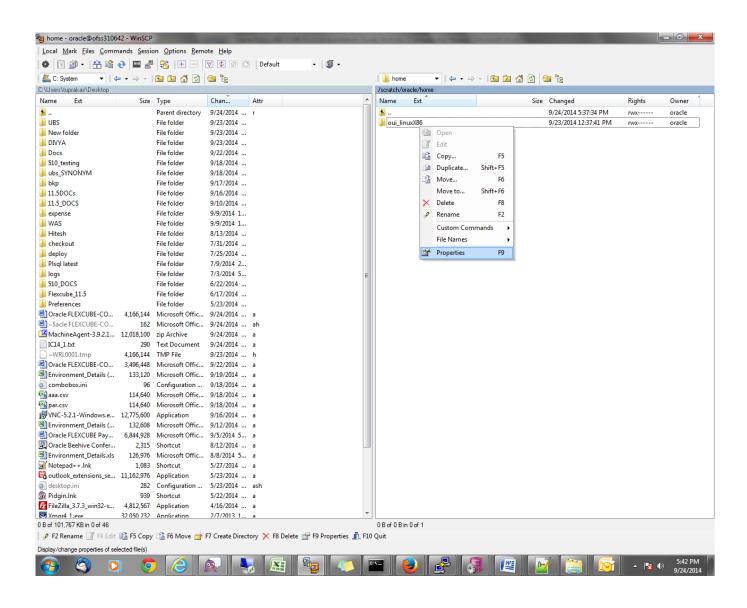
Please note that some of the above software may need license for installation. Please contact your system administrator for the same.

Go to your user home directory(where all rights are present), e.g. /home/fcradm, then copy the host installer(oui_linuxX86) and put it under this path

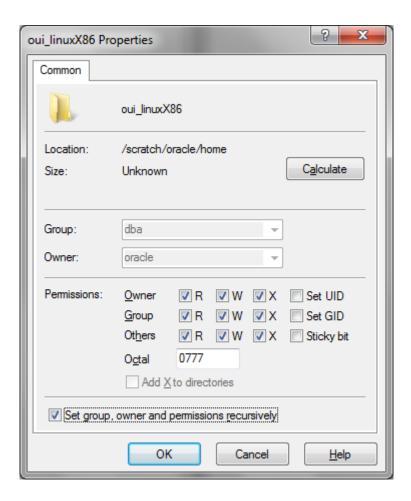
The host installer will be present within Relarea_Encrypted at the below path in the Installation zip file: Relarea_Encrypted\flexcube\install\OUI\Host\oui_linuxX86\

Once the installer is copied onto your home directory in the host machine, we need to provide the complete rights to the oui_linuxX86 folder for the administrator user being used for installation. For this, log into your host machine via Winscp and navigate to the directory where the installer is copied.

Right Click on oui_linuxX86 folder and click on properties.



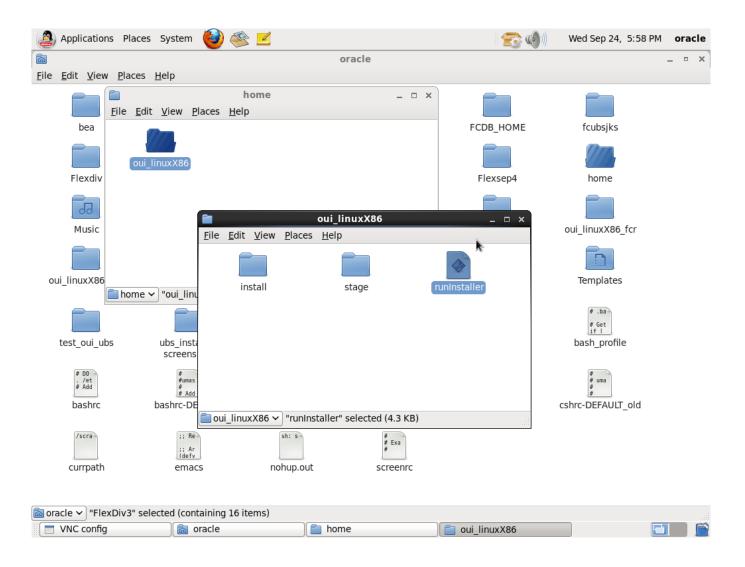
Change the permissions, by setting '0777' in the "Octal" entry for permissions. Next check the "Set group, owner and permissions recursively" box.



Click OK.

Once the above permissions have been given, you can launch the start up screen with the following steps:

Connect to the remote host machine using VNC viewer (steps to connect given in appendix 5.5) Go to admin user home path (e.g./home /fcradm) in VNC console(which will be present in the Admin Users Home folder) .Navigate to the host installer folder (oui_linuxX86).



Double click on the runInstaller file to start the installation of FLEXCUBE-CORE host. Click on 'Run'.



Just wait for a while, the installation wizard will appear and will guide you through the steps to install FLEXCUBE-CORE Host on your machine.

1. Welcome screen

You should see the welcome message on first screen. Just click Next



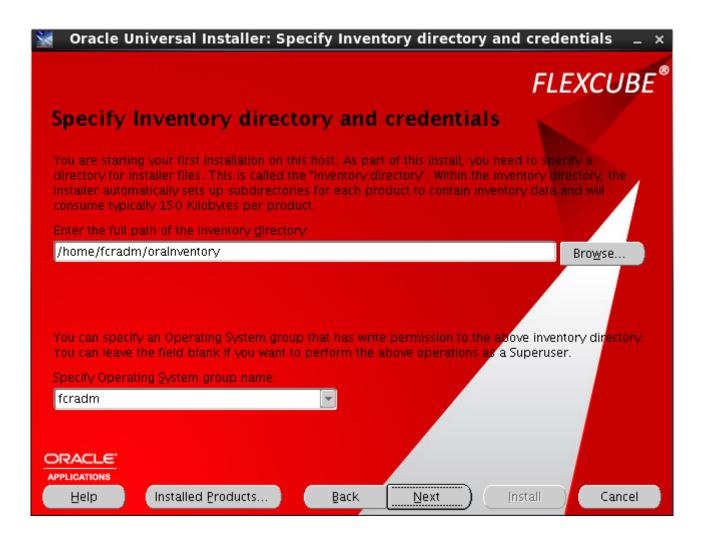
Click on Next Button

2. Specify Inventory directory and credentials

You should keep the default directory that is automatically present in the OUI, and confirm it exists.

After that, click next.

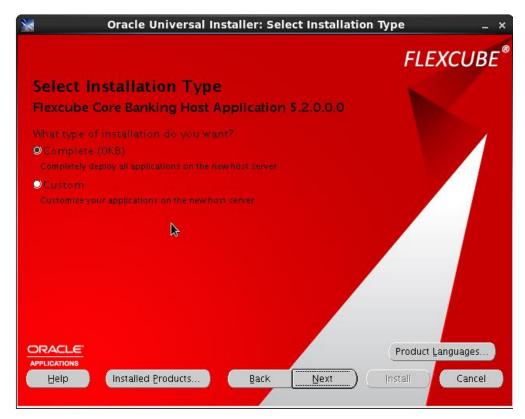
Note: This screen may not appear if your inventory directory has already been defined during a previous OUI run.



3. Select Installation Type

In this screen, you have two options for configuring FLEXCUBE-CORE Host components.

Only choose the complete option to completely deploy all FLEXCUBE-CORE host applications on new domain..



Click on Next.

4. Specify Oracle Home Details

Keep the entries which are present by default in the OUI screen as it self-assigns the ORA_HOME path .



Click Next.

5. Locate JDK Home

Specify JDK home path from your local environment. You can use file browser to locate JDK home directory.

Please contact your system administrator for Directory Path details



Directory Path: JDK installation path, one level up from bin folder .

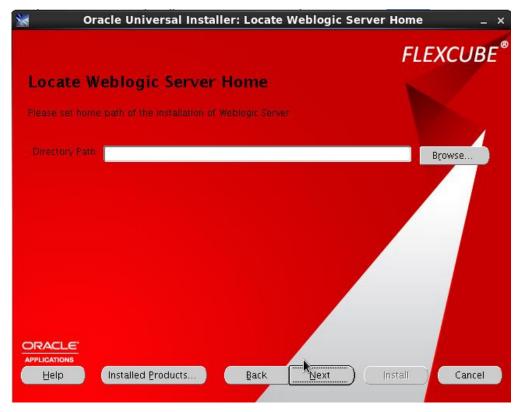
Eg. If path of bin folder of JDK is : $/mnt/devops_0/weblogic/home/jdk1.7_80/bin$, then the corresponding JDK home to be defined in the OUI is : $/mnt/devops_0/weblogic/home/jdk1.7_80$

Click Next.

6. Locate Weblogic Server Home

Specify Weblogic server home path of your host environment. You can use file browser to locate the Weblogic server home directory

Please contact your system administrator for Directory Path details



Directory Path: Weblogic installation Path, and must point to /wlserver directory. And this Weblogic path is used by single FC CORE Host. Eg. /scratch/home/weblogic/Oracle/Middleware12c/Oracle_Home/wlserver

7. Choose FLEXCUBE-CORE Host Home Directory

Specify FLEXCUBE-CORE host home path. Make sure you have rights to write in its parent directory if this home directory does not exist.

Please contact your system administration team for the Path

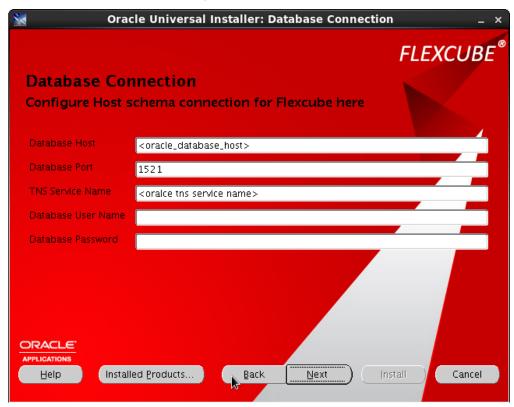


Click Next to continue.

8. Database Connection

Please specify host database connection here.

Please contact your DBA team for the required values.



Database Host: IP of Database Server. IP address is preferred.

Database Port: Database Listen port.

Database SID: Database Service Instance.

Database User Name: Host User Name of Database.

Database Password: Host User Password of Database.

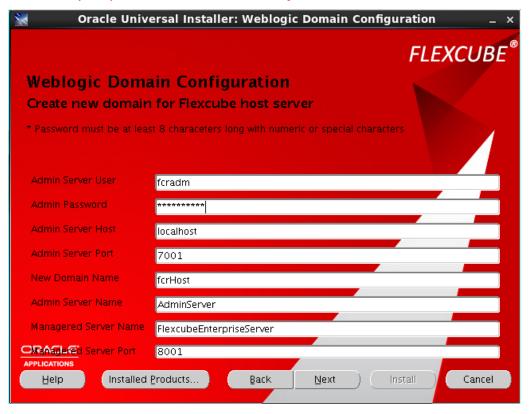
Click Next to continue.

9. Weblogic Domain Configuration

Please specify weblogic domain administrator user name and password, FLEXCUBE-CORE host domain name and port numbers here.

Make sure your domain admin password has at least 8 characters with more than one numeric or special character.

Please contact your System administration team for the required values



Admin Server User: Weblogic Admin Name. (The string just should include [a-zA-Z0-9] characters, and the name should be exclusive.)

Admin Password: Password of Weblogic Admin. (The string just should include [a-zA-Z0-9] characters, and the name should be exclusive.)

Admin Server Host: Weblogic Server IP.(localhost is preferred.)

Admin Server Port: Weblogic Admin Port.(Every FC CORE Host must have own Admin Server Port. And it must be exclusive.)

New Domain Name: Domain Name.

Admin Server Name: Admin Server Name. (The string just should include [a-zA-Z0-9] characters, and the name should be exclusive.)

Managed Server Name: Managed Server Name. (The string just should include [a-zA-Z0-9] characters, and the name should be exclusive.)

Managed Server Port: Managed Server Port. (It must be exclusive.)

Then click Next.

Note: Make sure that the ports(Admin Server Port and Managed Server Port) you define here is free. You can take these free port numbers from your system administrator or can check it yourself by using below mentioned command on the host machine via putty. \$netstat -tulpn | grep <port no>

Where <port no> is the port value that needs to be checked.

```
(Not all processes could be identified, non-owned process info will not be shown, you would have to be root to see it all.)

weblogic@ofss220123:/mnt/devops_0/weblogic/home/UBS_installer/oui_linuxX86# netstat -tul

pn | grep 8021

(Not all processes could be identified, non-owned process info
will not be shown, you would have to be root to see it all.)

tcp 0 0::ffff:127.0.0.1:8021 :::* LISTEN

9954/java

tcp 0 0 fe80::216:3eff:fe33:9f:8021 :::* LISTEN

9954/java

tcp 0 0 0::1:8021 :::* LISTEN

9954/java

tcp 0 0 0::ffff:10.184.133.33:8021 :::* LISTEN

9954/java

tcp 0 0 0::ffff:10.184.133.33:8021 :::* LISTEN

9954/java

weblogic@ofss220123:/mnt/devops_0/weblogic/home/UBS_installer/oui_linuxX86# netstat -tul

pn | grep 8051

(Not all processes could be identified, non-owned process info
 will not be shown, you would have to be root to see it all.)

weblogic@ofss220123:/mnt/devops_0/weblogic/home/UBS_installer/oui_linuxX86#
```

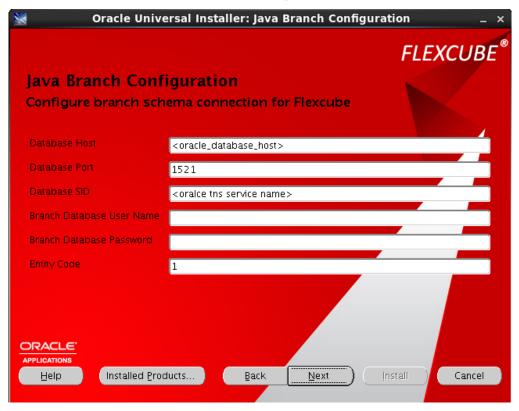
Here if you get details of the port where it is used as seen in the above example for port no 8021, then the port is in use.

And if we do not get any details about the port as seen in the above example for port no 8051, then the port is unused.

10. Branch Database Connection

Please specify Branch database connection here.

Please contact your system adminstration team for the required values



Database Branch: IP of Database Server. IP address is preferred.

Database Port: Database Listen port.

Database SID: Database Service Instance.

Database User Name: Branch User Name of Database.Database Password: Branch User Password of Database.

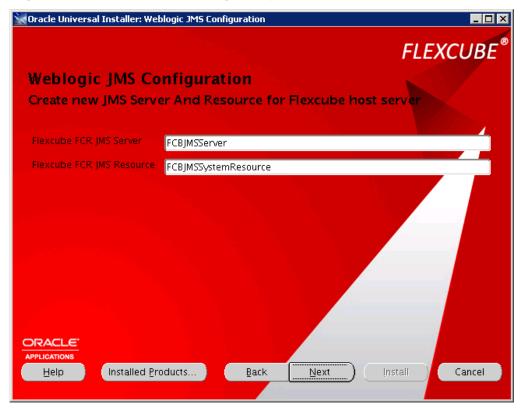
Entity Code: Entity Code of Database.

Click on Next button

11. JMS Server Configuration

The JMS Server name and JMS Resource for FLEXCUBE-CORE are specified here.

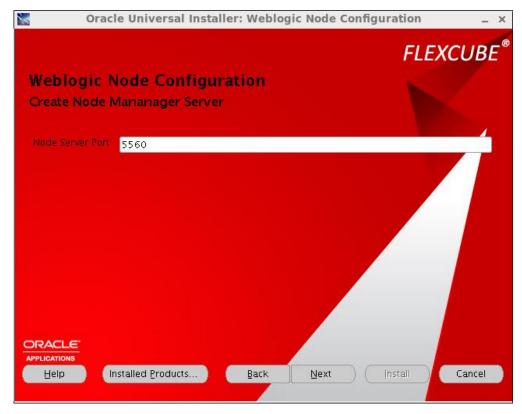
Keep the entries the same as those which are present by default in the OUI screen.



Click Next to continue

12. Weblogic Node Configuration

Please specify the Node Server Port here. And confirm Node Server Port has never been used and ranges from 5560 to 5700. Then click Next.



Node Server Port: Node Listen Port. (Every FC CORE Host must have own Node Server port. And it must be exclusive.)

Click Next.

Note: Make sure that the port you define here is free. You can take these free port numbers from your system administrator or can check it yourself by using below mentioned command on the host machine via putty.

\$netstat -tulpn | grep <port no>

Where <port no> is the port value that needs to be checked.

```
weblogic@ofss220123:~/UBS_installer/oui_linuxX86
     all processes could be identified, non-owned proces
will not be shown, you would have to be root to see it all.)
weblogic@ofss220123:/mnt/devops_0/weblogic/home/UBS_installer/oui_linuxX86# netstat -tu:
pn | grep (8021
      all processes could be identified, non-owned process info
 will not be shown, you would have to be root to see it all.)
cp 0 0 ::fffff:127.0.0.1:8021 :::*
                                                                                               LISTEN
 9954/java
                     0 fe80::216:3eff:fe33:9f:8021 :::*
                                                                                               LISTEN
9954/java
                                                                                                LISTEN
                                                                                                LISTEN
 reblogic@ofss220123:/mnt/devops_0/weblogic/home/UBS_installer/oui_linuxX86# netstat -tul
   | grep 8051
      all processes could be identified, non-owned process info
   ill not be shown, you would have to be root to see it all.)
blogic@ofss220123:/mnt/devops_0/weblogic/home/UBS_installer/oui_linuxX86#
```

Here if you get details of the port where it is used as seen in the above example for port no 8021, then the port is in use.

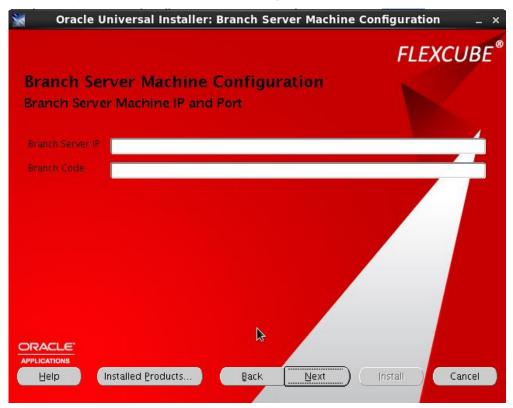
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And if we do not get any details about the port as seen in the above example for port no 8051, then the port is unused.

13. Branch Sever IP

Please specify Branch Server Machine IP and the branch code here.

Please contact your system administration team for the ip address

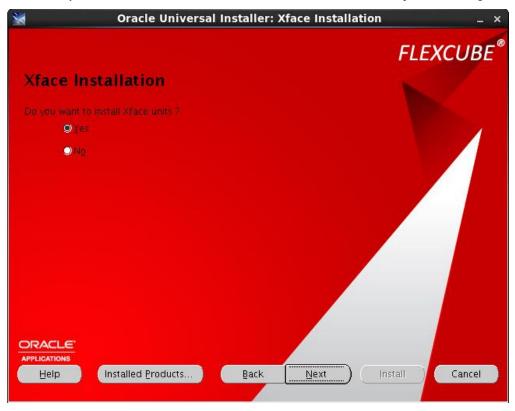


Then click Next

Note: The branch code should be the same as given during RCU run.(9999 in case bootstrap is being run)

14. XFACE Installation

 $Select\ Yes\ if\ you\ want\ to\ install\ the\ host\ units\ of\ Customizable\ XFACE\ and\ No\ to\ proceed\ with\ regular\ CORE\ installation.$



Then click Next

15. RCCU Installation

Select Yes if you want to install the host units of the RCCU setup and No to proceed with regular installation.

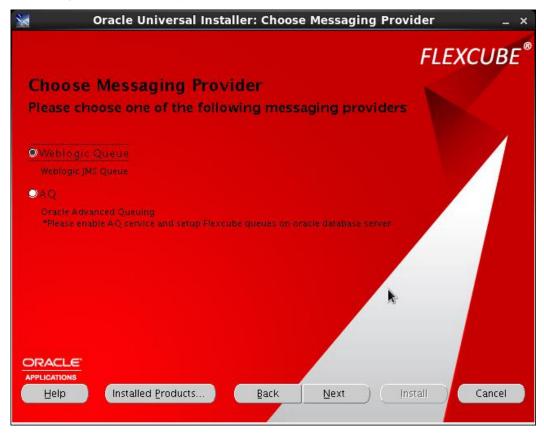


Then click Next

16. Choose Messaging Provider

FLEXCUBE-CORE Host supports multiple messaging providers.

Here Weblogic Queue is selected by default and the same is to be used for host installation via OUI.



17. Summary

In the summary screen, you can review the host installation. Click Install to start installation and configuration.



18. Install

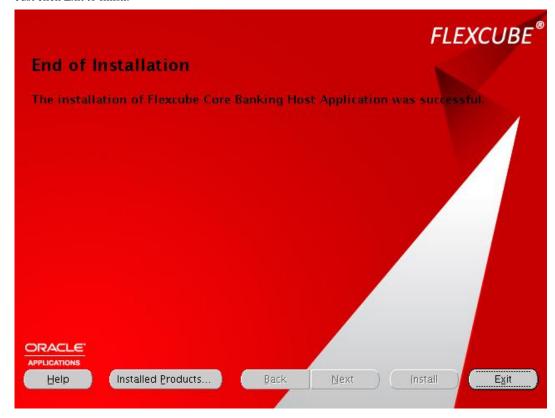
After a while, depending on your machine's performance, the host installation and new weblogic domain configuration will be finished. You can click "Stop installation..." button to terminate anytime.

Note: Once the installation is stopped, it will not resume from point at which installation was stopped but will restart the installation.



19. End of Installation

Just click Exit to finish.



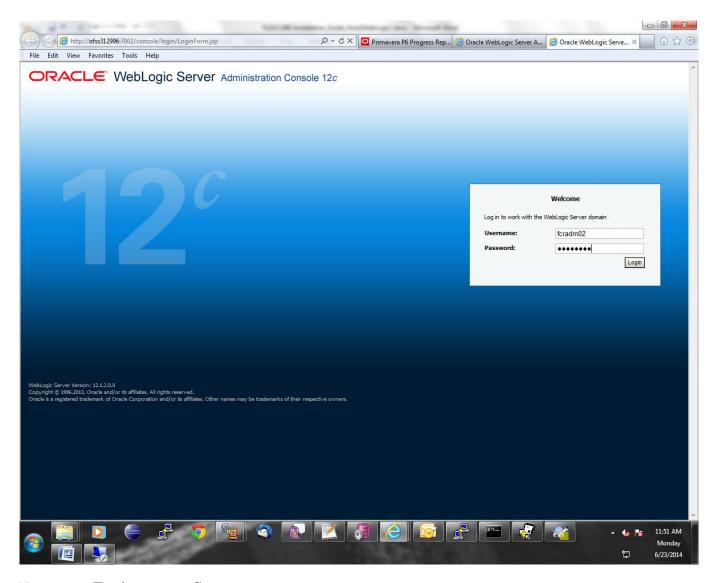
After installation, you must execute : nohup sh start_fcr.sh & in putty from your source home . eg : /home/fcradm/FLEXCUBE510

This will start up both the Admin and the FC-CORE managed server.

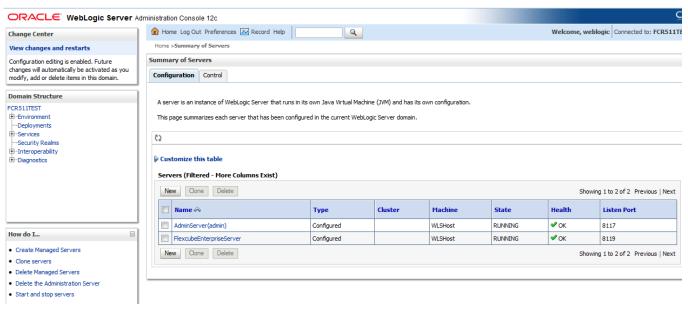
To verify this, after executing the above command launch the Weblogic console by typing the host domain admin URL in the address bar.

 $E.g. \ \underline{\text{http://10.184.133.33:7001/console}}\ , \ \text{where } 10.184.133.33\ \text{is the host machine ip address and } 7001\ \text{is the admin server port.}$

After a while, you should see the login screen. Type in admin username and password you just set. Click Login



Now go to **Environment>Servers**,



Both the Admin Server and the FCR Managed Server(FlexcubeEnterpriseServer in the above case) should be in RUNNING state.

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Post Installation

AES Password Encryption related changes

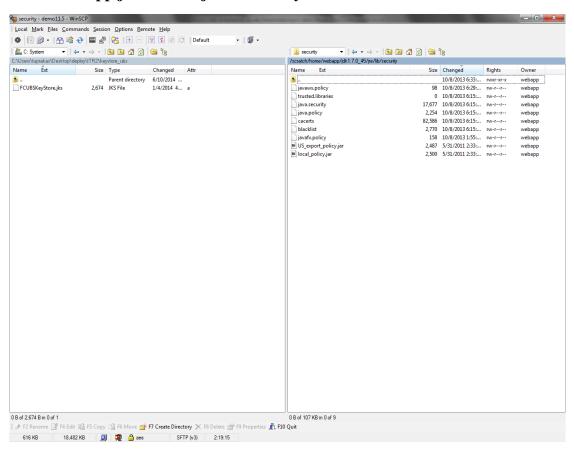
The current 5.1.0 installers make use of AES encryption.

The following steps are required for proper implementation of AES and must be done:

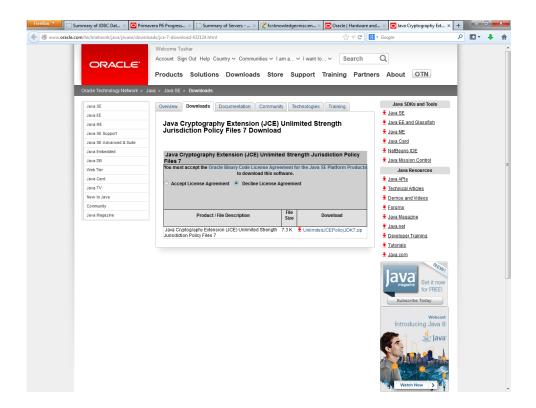
a.)Change in jdk security jars:

Go to the security folder in the jdk home(JDK1.7 folder). Eg.

/scratch/home/webapp/jdk1.7.0_45/jre/lib/security on the host machine.



Here we need to replace the 2 jars **US_export_policy.jar** and **local_policy.jar** with the jars available at the following link: http://www.oracle.com/technetwork/java/javase/downloads/jce-7-download-432124.html



Click on Accept License Agreement and then click on <u>UnlimitedJCEPolicyJDK7.zip</u>.

After extracting contents of the downloaded zip file, replace the 2 jars present in security folder with the newly extracted **US_export_policy.jar** and **local_policy.jar**.

b.) Restart the Weblogic app server via start_fcr.sh script once the above changes are done, as mentioned in section 5.3(**Restart via start up shell script**)

Once Flexcube Enterprise server is in running state, the AES changes will automatically get implemented in the property files.

Logs of WebLogic and FLEXCUBE-CORE

Weblogic server logs:

On Linux, go to directory

E.g. /home/fcradm/FLEXCUBE/Flex_Domain/servers/ FlexcubeEnterpriseServer/logs

Where "Flex_Domain" is the domain name and "FlexcubeEnterpriseServer" is the Managed Server name as defined in section 4.2 in step 9.

At this path, FlexcubeEnterpriseServer.log will be present. This file will have all logs related to deployments of the FLEXCUBE applications

FLEXCUBE-CORE logs

The FLEXCUBE-CORE logs are created at the following path by above mentioned convention:

/home/fcradm/FLEXCUBE/logs

This folder will contain the following sub-folders, all containing separate logs:

fcrjlog

fcrjdebug

branch

fcrjxfacelog

audit

fcrjbatchlog

Along with these folders, you also have logs present outside the folders. These are:

StartManageredServer.log

outboundwebserviceExceptionlog.txt

hibernateExceptionlog.txt

fcrjperformancelog.txt

fcrjaxislog.txt

StartAdminServerLog.log

StartNodeManagerLog.log

For entity specific logs, a folder with the name the same as the entity code, is created having a folder called logs within it.

Eg. /home/fcradm/FLEXCUBE /1/logs

This folder will have the following sub folders containing logs:

fcrjdebug

fcrjlog

fcrjbatchlog

audit

Note: If the entity code is something different than 1, we need to update the file /home/fcradm/FLEXCUBE/runarea/env/config/properties/log4j.xml
Replace 1 with the entity code you want to give in the following sections(and their subsections) in log4j.xml(replace 1 with desired entity in all the log4j entries within the section):

#Application Specific Logging
#Logging for BAnk0 with entity code -1
#CLASS-SPECIFIC LOGGING LEVELS -1 Entity
Eg.

log4j.additivity.-240.BATCH.com.iflex.fcr.bh.batch=false
log4j.appender.-240.BATCH.BatchExceptionlog=org.apache.log4j.RollingFileAppender
log4j.appender.240.BATCH.BatchExceptionlog=org.apache.log4j.RollingFileAppender
log4j.appender.240.BATCH.BatchExceptionlog.File=\${fc.log.dir}/logs/fcrjbatchlog/BatchExceptionlog.txt
log4j.appender.-240.BATCH.BatchExceptionlog.layout=org.apache.log4j.PatternLayout
log4j.appender.-240.BATCH.BatchExceptionlog.layout.ConversionPattern=%d %t %p [%c] %m%n
log4j.appender.-240.BATCH.BatchExceptionlog.MaxFileSize=3000KB
log4j.appender.-240.BATCH.BatchExceptionlog.MaxFileSize=3000KB

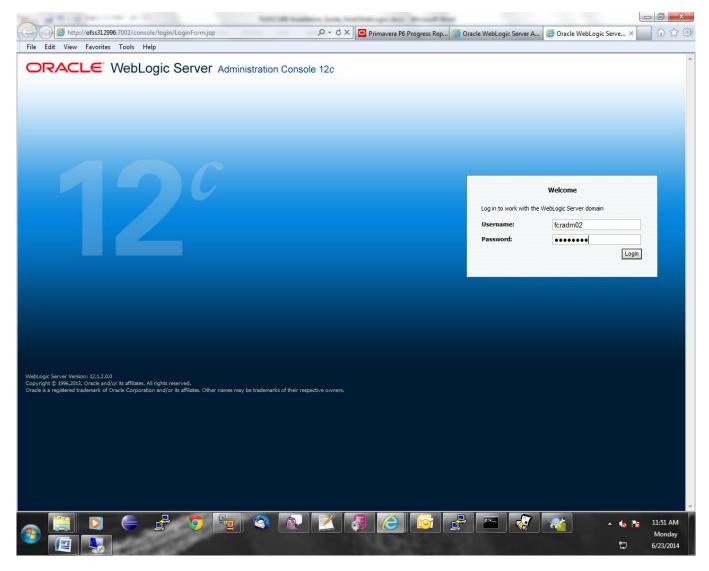
Here 240 is the desired entity code, which replaced the default entity code, '1'.

Launch Domain Admin Server

Open a web browser and type the host domain admin URL in the address bar.

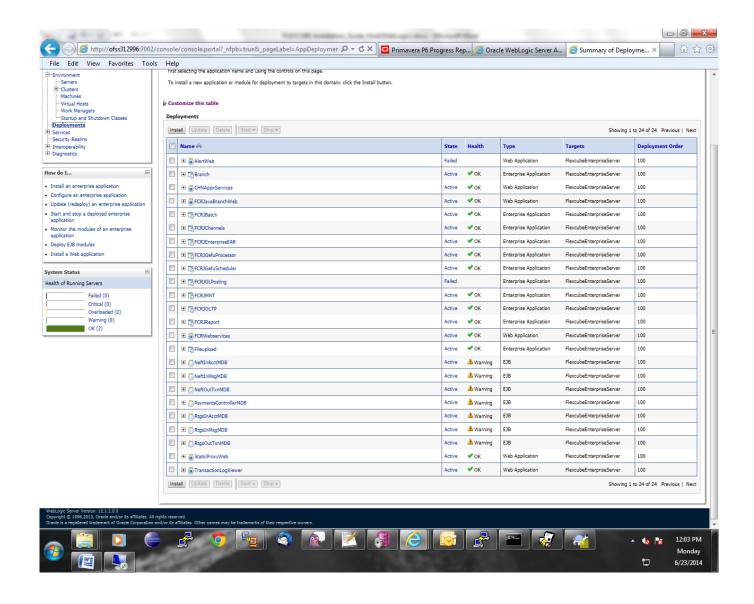
E.g. http://10.184.133.33:7001/console, where 10.184.133.33 is the host machine ip address and 7001 is the admin server port.

After a while, you should see the login screen. Type in admin username and password you just set. Click Login



Verify Host Deployments

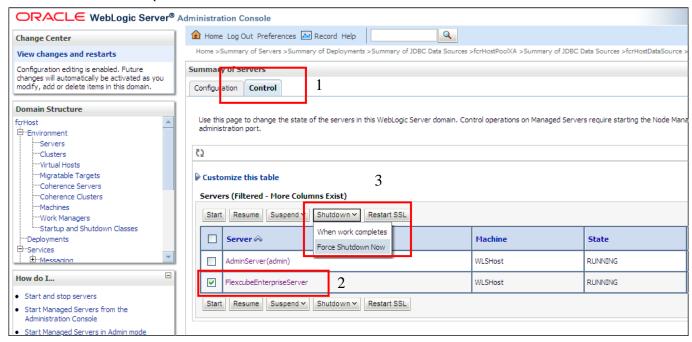
Go to >**Deployments**, you should see all FLEXCUBE-CORE host application deployed on this domain server. Please verify deployment list and see if anything missing and health are all OK.



Shutdown and Restart

Shutdown

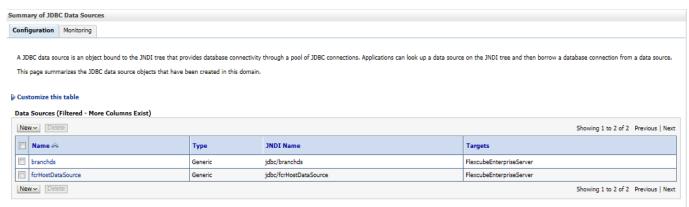
Go to **Environment>Servers**, then click Control tab. Choose fcrHostServer1(admin) from the list and click Shutdown to open a drawdown menu. Click "When work completes" to shutdown host domain server.



Start Host Domain

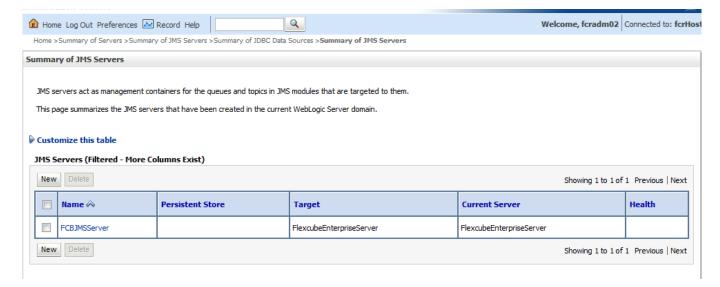
Data Source:

Click on Services option in the Domain Structure and goto: Services→Data Sources

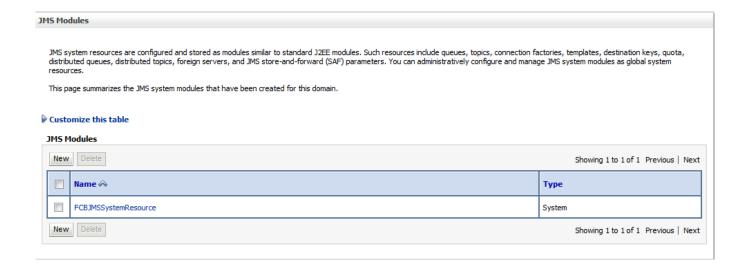


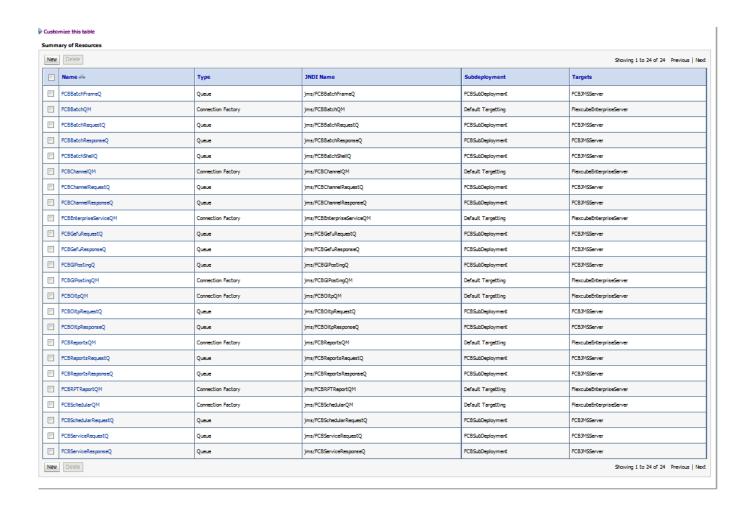
JMS Server:

Click on Services option in the Domain Structure and goto : Services→Messaging→JMS Servers



Click on Services option in the Domain Structure and goto : Services→Messaging→JMS Modules





Restart via start up shell script :

- 1.Log into linux machine as admin user.
- 2.Go to FLEXCUBE-CORE host home directory(where the startup shell script "start fcr.sh" is present) in putty via the cd command.
- E.g: cd /home/fcradm/FLEXCUBE
- 3. Type the command below to start host domain server again

\$nohup sh start_fcr.sh &

```
Using username "weblogic".

Weblogic@ofss203207 by password:
Last login: Sat Sep 20 09:53:36 2014 from dhcp-in-ofss-10-180-57-15.in.oracle.co

m
This is a Devops-managed system. To make changes, please visit
http://devops.oraclecorp.com.

User: kiran.koduri
Expires: 2015-09-14

Reservation type: entitlement
The host is currently reserved for personal development use only.
If you're not the named user above, be aware that this system may be
reimaged or released without warning.

Use: Personal entitlement

Host specific info (below) - you can modify contents of /etc/motd_hostinfo as ne
eded to update data:
[weblogic@ofss220320 -]$ cd /scratch/home/weblogic/Home/FlexSec510
[weblogic@ofss220320 FlexSec510]$ nohup sh start_fcr.sh &
```

4.Launch admin console

Open the following URL in a web browser.

E.g. http://10.182.115.8:7001/console, where "10.182.115.8 is the host ip address and 7001 is the admin server port.

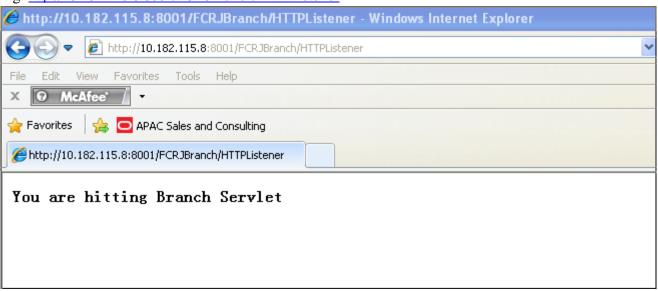
Type domain admin username and password to login as defined in Section 4.2, Step 9.

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5. Testing publish of FLEXCUBE-CORE host

Open the following URL in a web browser.

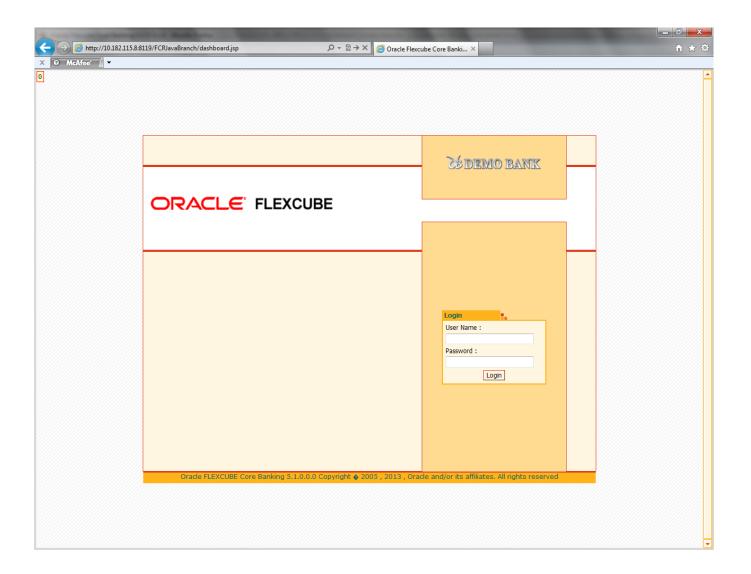
E.g. http://10.182.115.8:8001/FCRJBranch/HTTPListener



6. Launching the Java Branch console

Open the following URL in a web browser

E.g. http://10.182.115.8:8001/FCRJavaBranch/dashboard.jsp, where "10.182.115.8 is the host ip address and 8001 is the Flexcube Enterprise Server port.



Login with a user id present in the table sm_user_profile and its corresponding password.

Note: You will be able to login only after the installation of FLEXCUBE-CORE branch on the windows server and complete installation of the database(objects+data).

Remote server connection using VNC viewer

Run below mentioned command on host machine putty.

\$vncserver

```
weblogic@ofss220123:/# keytool -genkeypair -alias selfcert -keyalg RSA -keysize
1024 -sigalg SHA1withRSA -validity 365 -keystore /mnt/devops_0/weblogic/home
Enter keystore password:
Re-enter new password:
What is your first and last name?
  [Unknown]: ^C
weblogic@ofss220123:/# vncserver

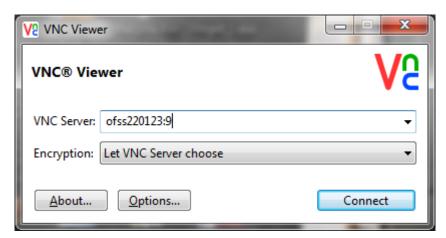
New 'ofss220123:9 (weblogic)' desktop is ofss220123:9

Starting applications specified in /mnt/devops_0/weblogic/home/.vnc/xstartup
Log file is /mnt/devops_0/weblogic/home/.vnc/xstartup
weblogic@ofss220123:/#
```

Here vncserver will ask you for a password. You can give any string value as password (remember the password as it will be required later).

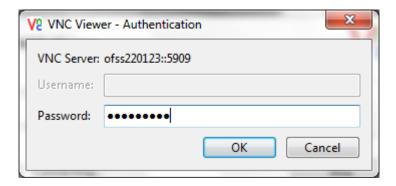
Make a note of the highlighted server detail as seen in the screenshot above. This detail will be required while connecting to remote machine from local machine.

Now run VNC viewer at local machine and provide the VNC server details as shown in the screenshot below



Connect to the server machine.

Now enter password (password which was set at host machine in above steps)



You will be connected to the remote host server machine as shown below.



Now follow the steps as given in Section 4.2.