

Deploying Oracle FLEXCUBE Application on WebLogic
Oracle FLEXCUBE Universal Banking
Release 14.6.2.0.0
Part No. F72916-01
[November] [2022]



Table of Contents

- 1. DEPLOYING ORACLE FLEXCUBE ON WEBLOGIC 1-1**
- 1.1 INTRODUCTION 1-1
- 1.2 BUILDING APPLICATION 1-1
 - 1.2.1 *Building Application in Centralized Mode* 1-1
 - 1.2.2 *Building Application in Decentralized Mode*..... 1-1
- 1.3 DEPLOYING APPLICATION IN ORACLE WEBLOGIC 1-1
 - 1.3.1 *Deploying Integration Adapter EAR from WebLogic Administration Console* 1-1
 - 1.3.2 *Deploying Dependency Library “Jax-RS”* 1-7
 - 1.3.3 *Deploying FCUBS Application from WebLogic Administration Console* 1-10
 - 1.3.4 *Deploying Gateway/Scheduler Applications from WebLogic Administration Console* 1-19

1. Deploying Oracle FLEXCUBE on WebLogic

1.1 Introduction

This chapter explains the steps to deploy Oracle FLEXCUBE UBS application into Oracle WebLogic application server in centralized and decentralized modes. In centralized mode, branch and host are setup in a single PC. In decentralized mode, branch and host are setup in different PCs.

1.2 Building Application

For building Oracle FLEXCUBE Application in centralized and decentralized modes, refer to the following chapters.

1.2.1 Building Application in Centralized Mode

Refer to the chapter 'Building Application in Centralized Mode'. This includes the following details:

- Creating Property File
- Building Centralized EAR File
- Configuring Plug-ins
- Loading Properties File

1.2.2 Building Application in Decentralized Mode

Refer to the chapter 'Building Application in Decentralized Mode'. This includes the following details:

- Creating Property File
- Building Decentralized EAR File
- Configuring Plug-ins
- Loading Properties File

1.3 Deploying Application in Oracle WebLogic

This section explains the method of deploying Oracle FLEXCUBE Application into Oracle WebLogic application server.

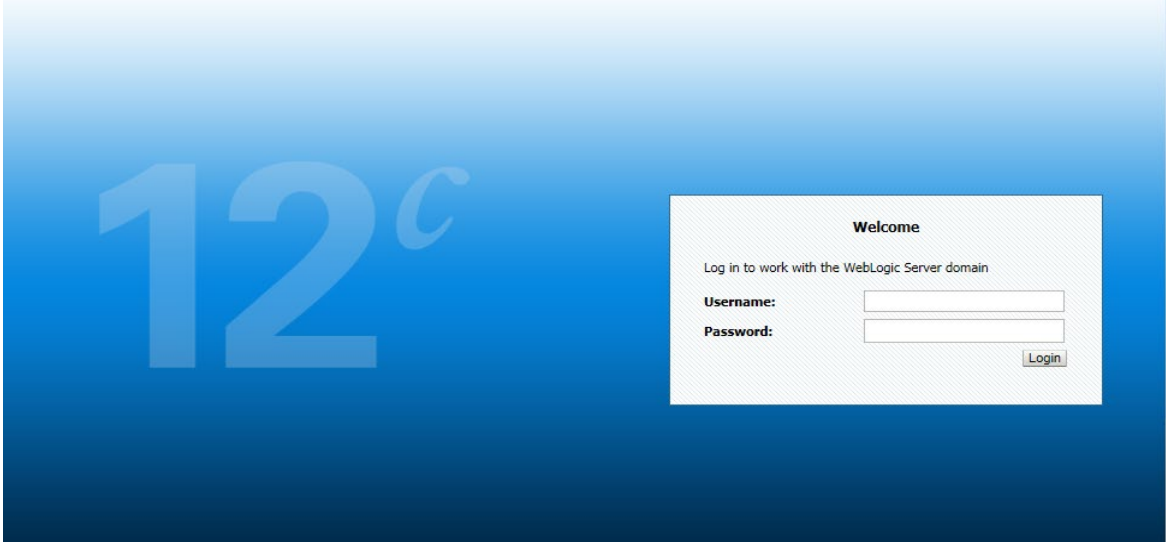
1.3.1 Deploying Integration Adapter EAR from WebLogic Administration Console

To deploy Oracle FLEXCUBE Application from Oracle WebLogic administration console, follow the steps given below.

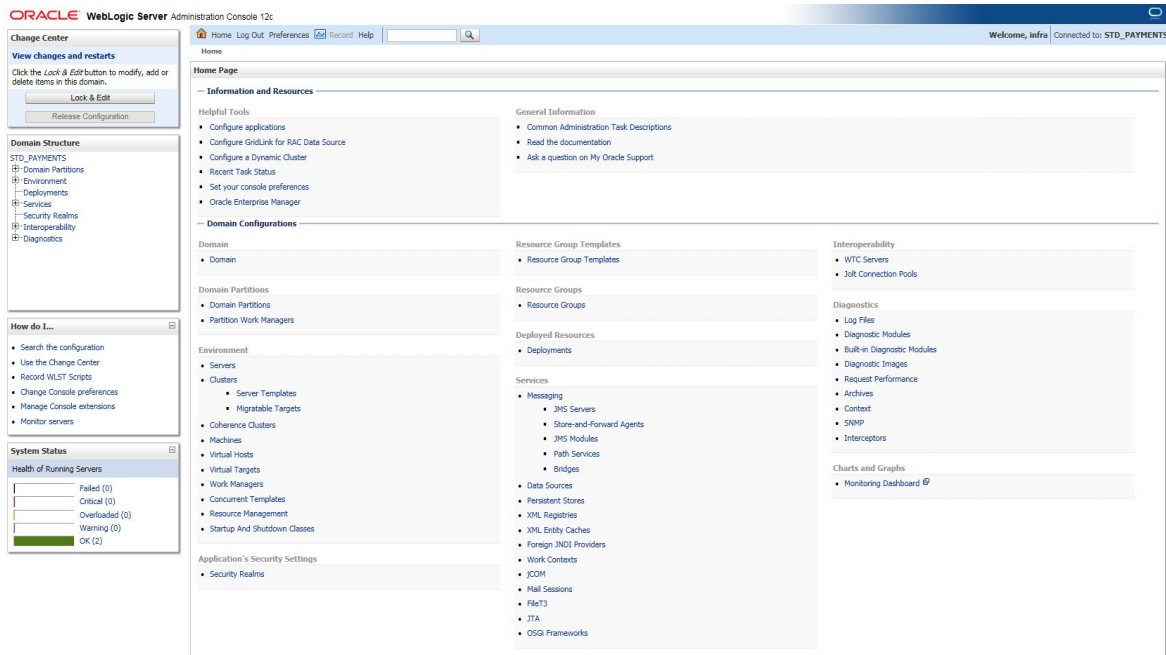
1. Start the Administrative Console of WebLogic application server. You can start this by entering Oracle WebLogic Admin Console URL in the address bar in an internet browser.

Eg: <http://10.10.10.10:1001/console>

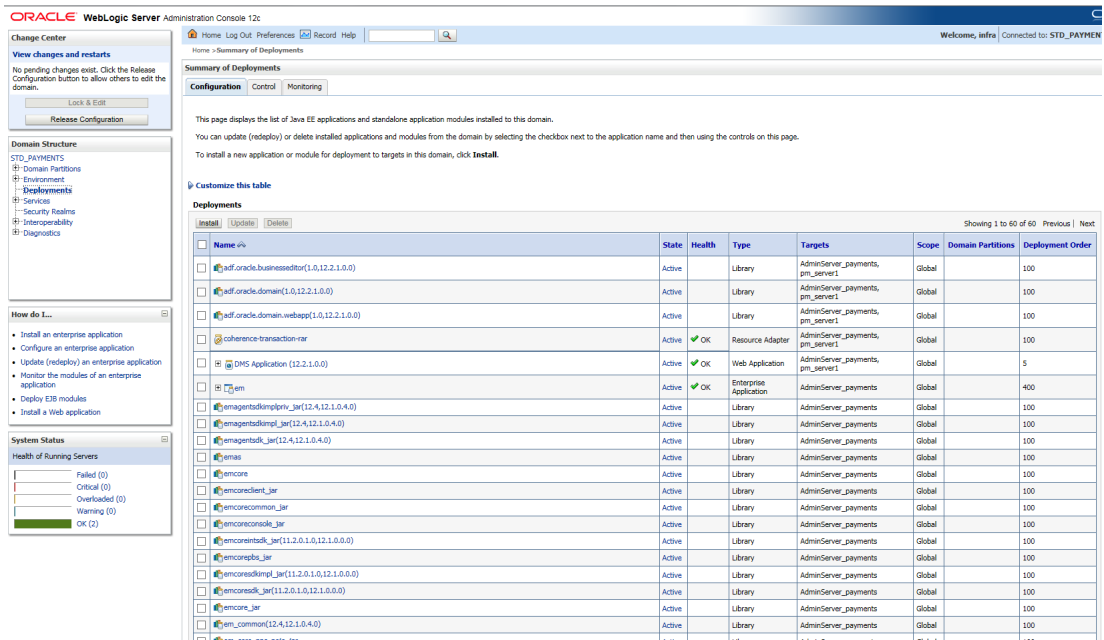
The following screen is displayed:



2. Specify the WebLogic administrator user name and password. Click 'Log In'.

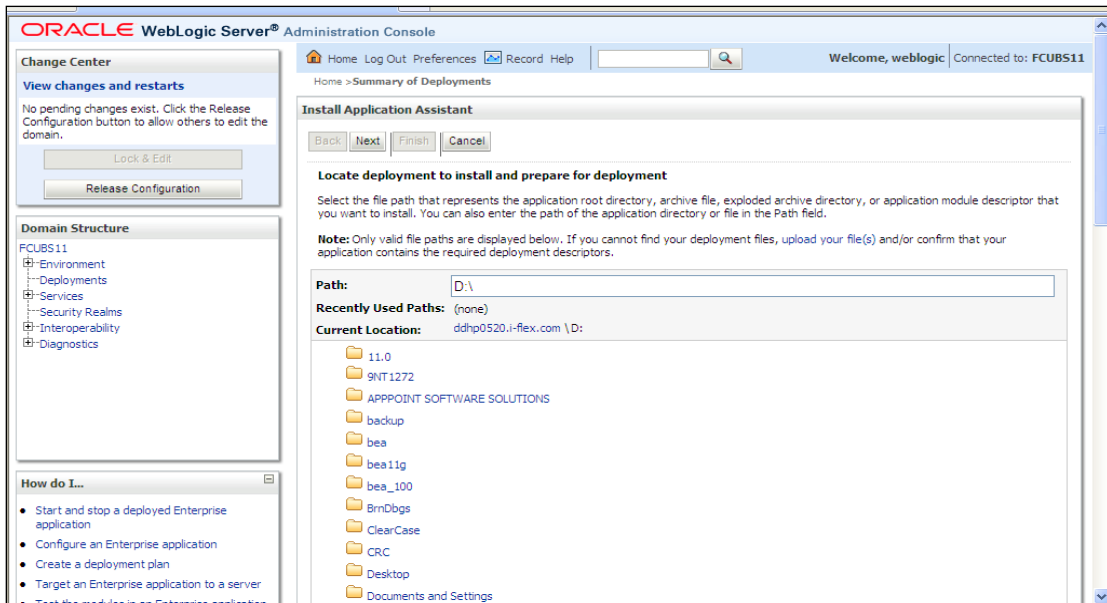


3. You need to deploy an Integration adapter EAR. For e.g. 'OBCLExtAdapter.ear or ExtAdapter.ear'. Go to 'Deployment'.
4. Click 'Lock & Edit' button to enable the buttons. This action enables the buttons.



5. Click 'Install' button.

The following screen is displayed:

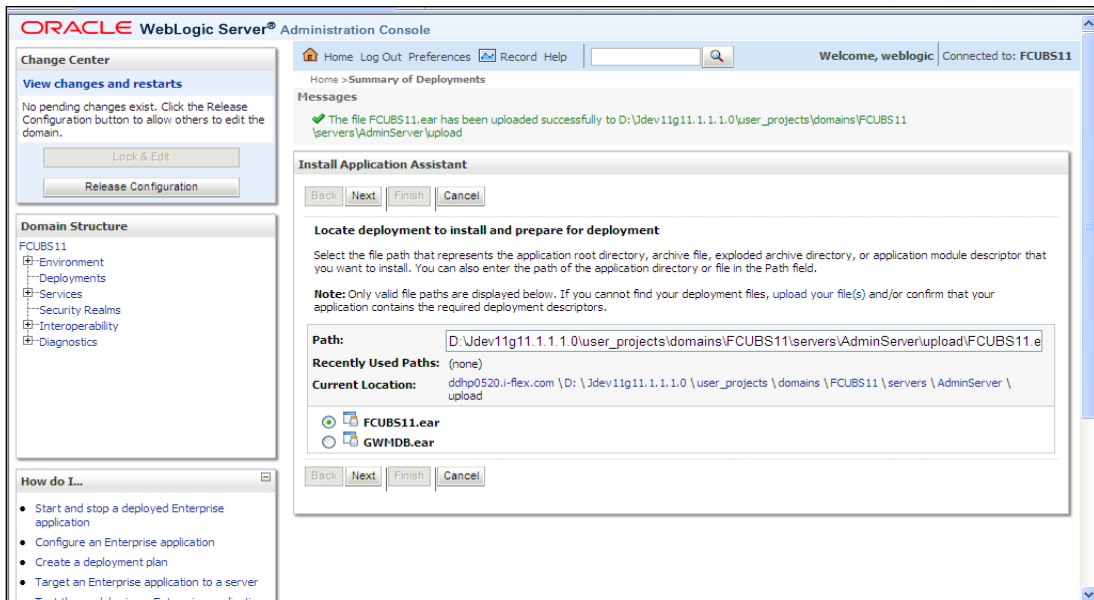


6. In order to specify the path/location of the enterprise archive file, click the link 'upload your file(s)'.

7. Specify the EAR file path. You can use the 'Browse' button to locate the file.

8. Click 'Next'.

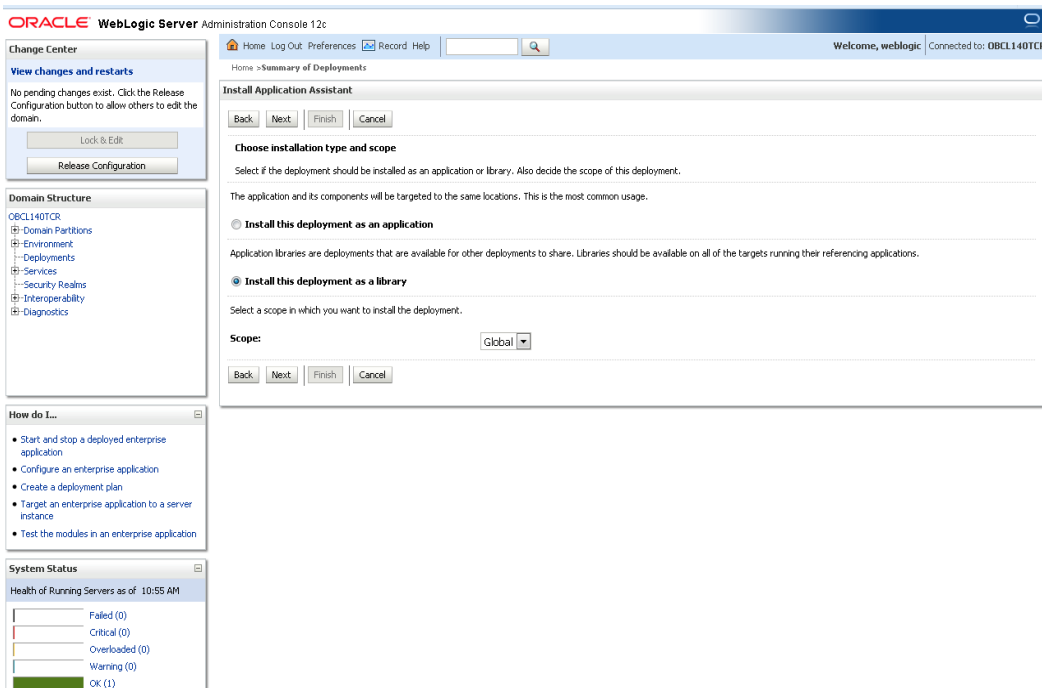
The following screen is displayed.



9. Select the application Adapter EAR from the list.

10. Click 'Next'.

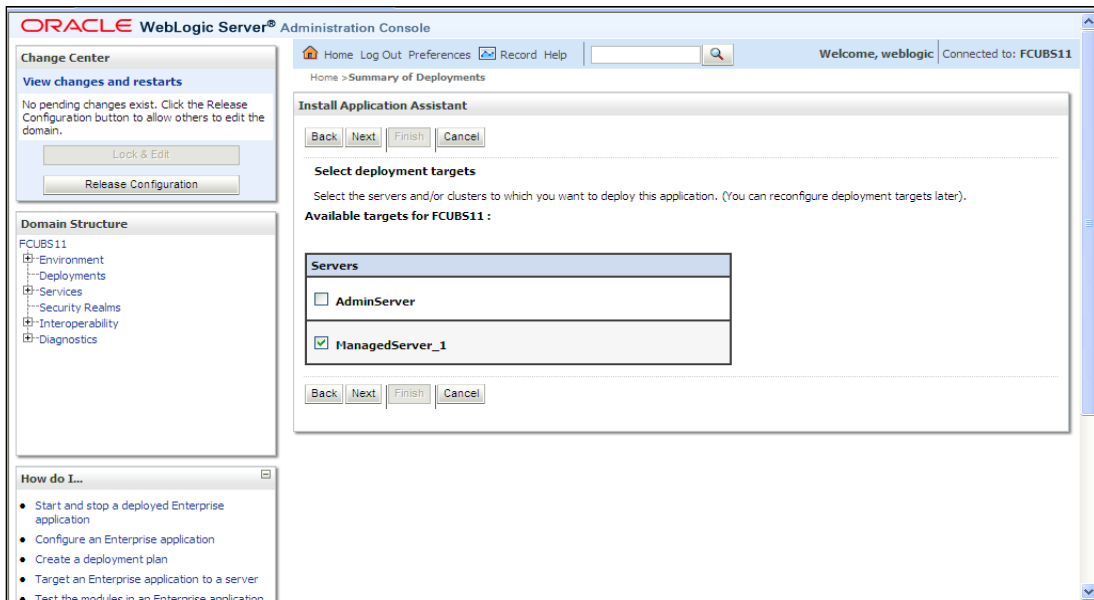
The following screen is displayed.



11. Choose the targeting style 'Install this deployment as a library'.

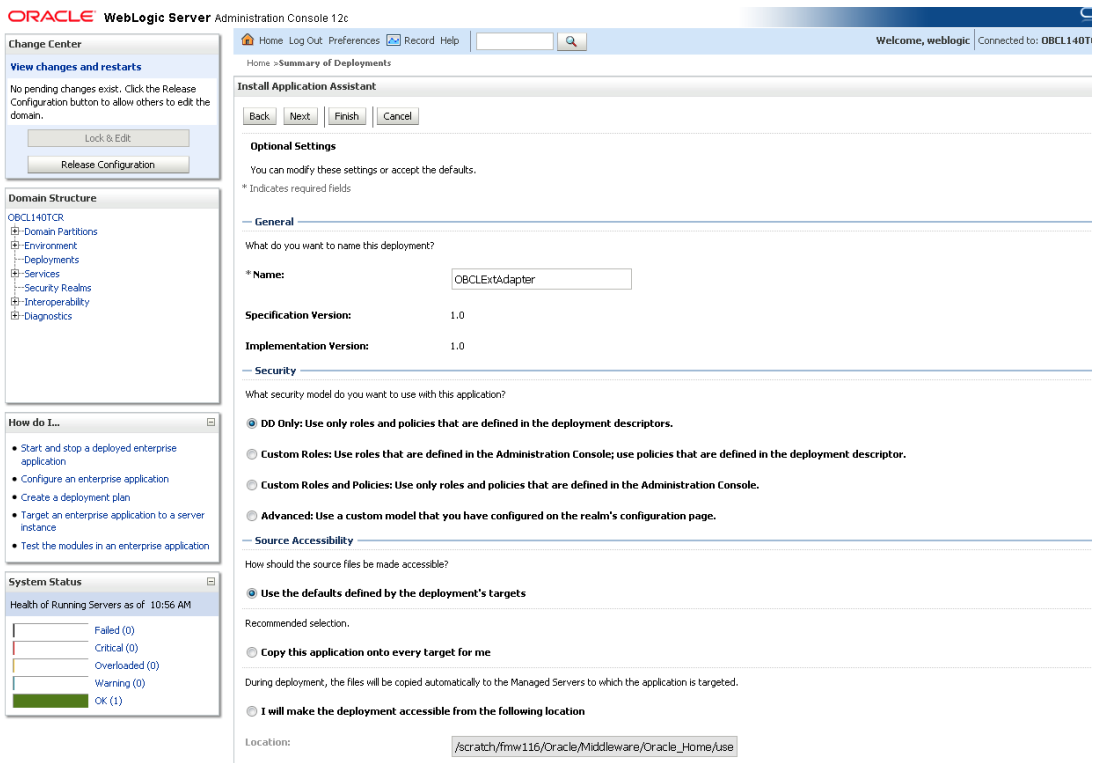
12. Click 'Next'.

The following screen is displayed.



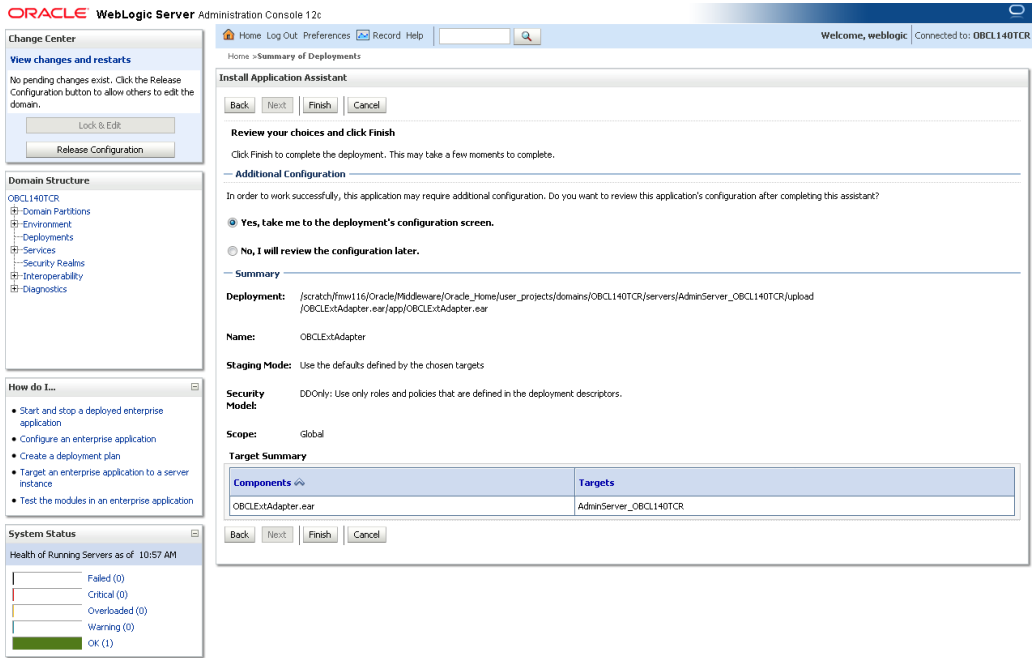
13. Select the target of the application. You can choose the server 'AdminServer' or 'Managed Server(s)'.

14. Click 'Next'. The following screen is displayed.



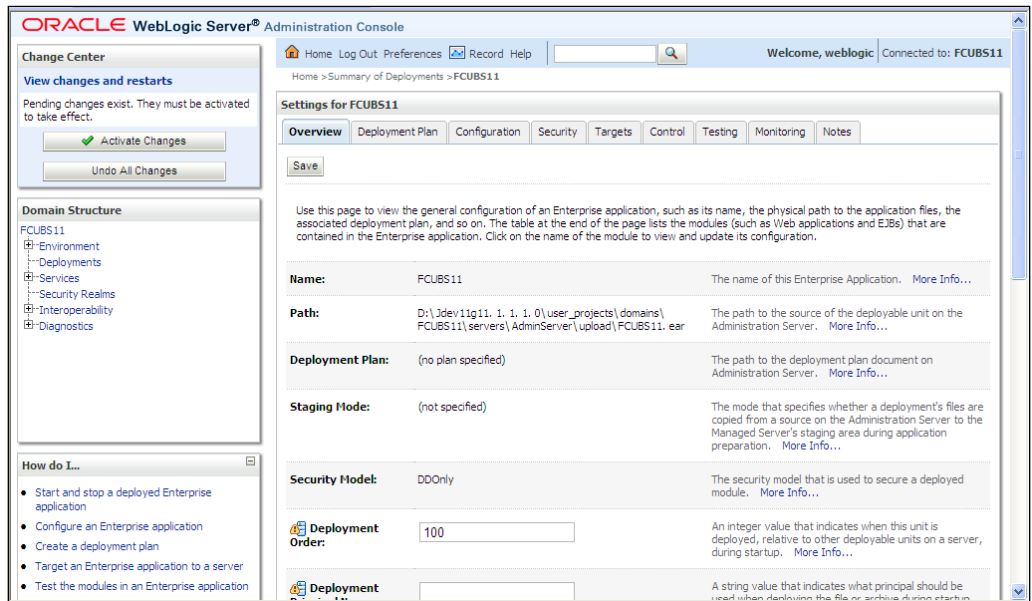
15. Check the deployment name.

The remaining portion of the screen is shown below:



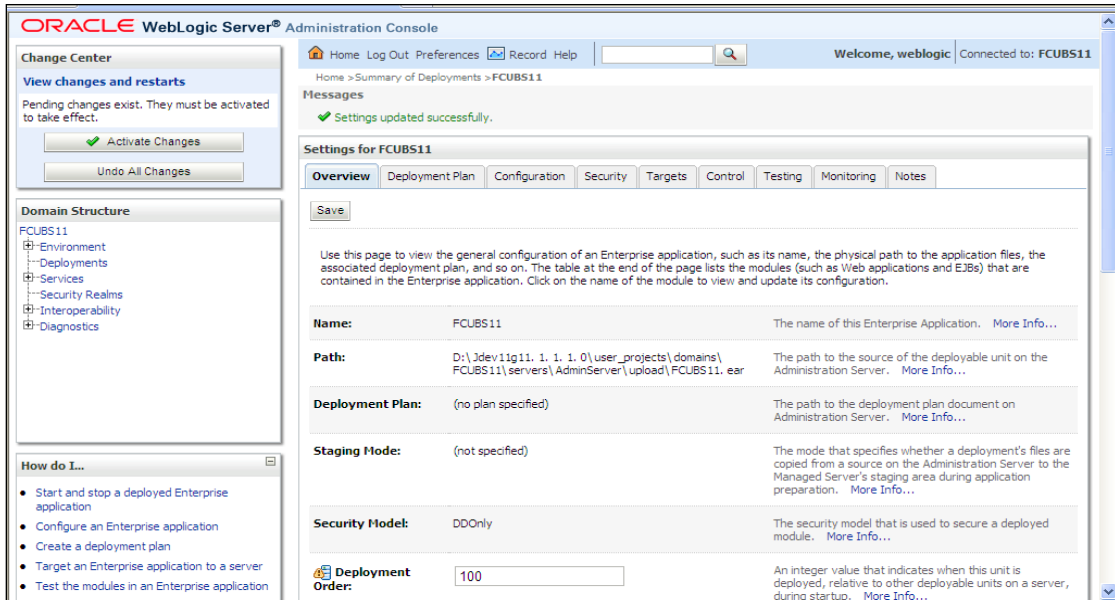
16. Click 'Finish' button.

The following screen is displayed.



17. Click 'Save' button.

The message 'Settings updated successfully' is displayed.



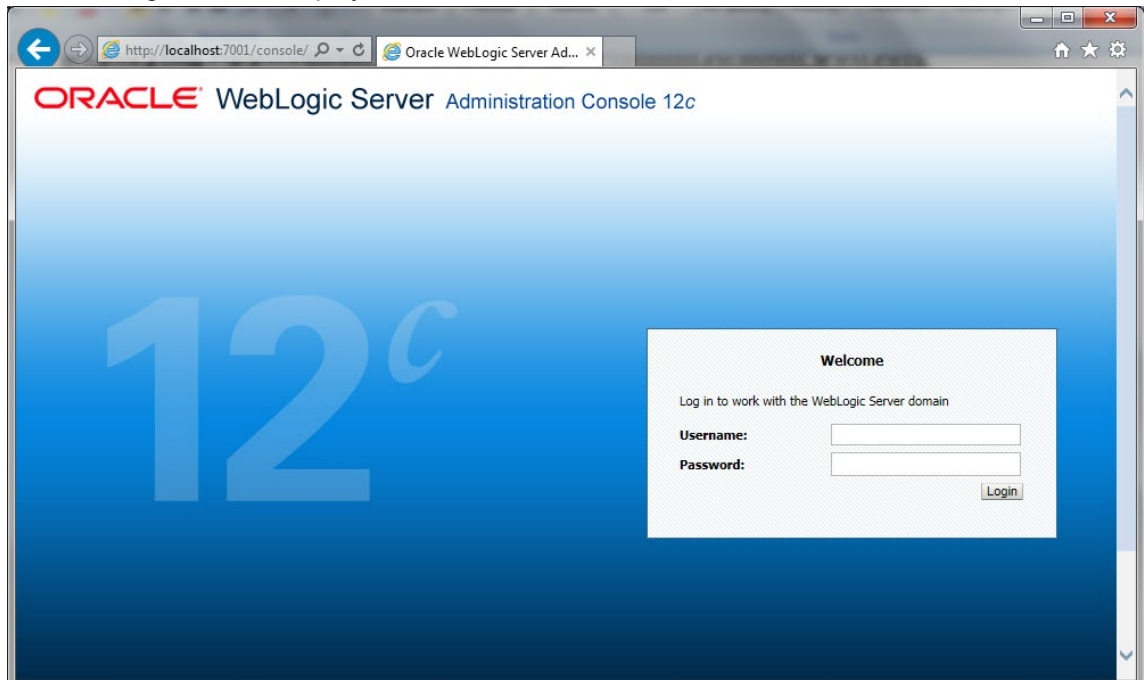
18. Click 'Activate Changes' button on the left pane. The message 'All the changes have been activated. No restarts are necessary' is displayed.

1.3.2 Deploying Dependency Library "Jax-RS"

This library must be installed before deploying FCUBSApp.ear. Follow the below steps

1. Start the Administrative Console of WebLogic application server. You can start this by entering Oracle WebLogic Admin Console URL in the address bar in an internet browser. Eg: `http://10.10.10.10:1001/console`

The following screen is displayed:

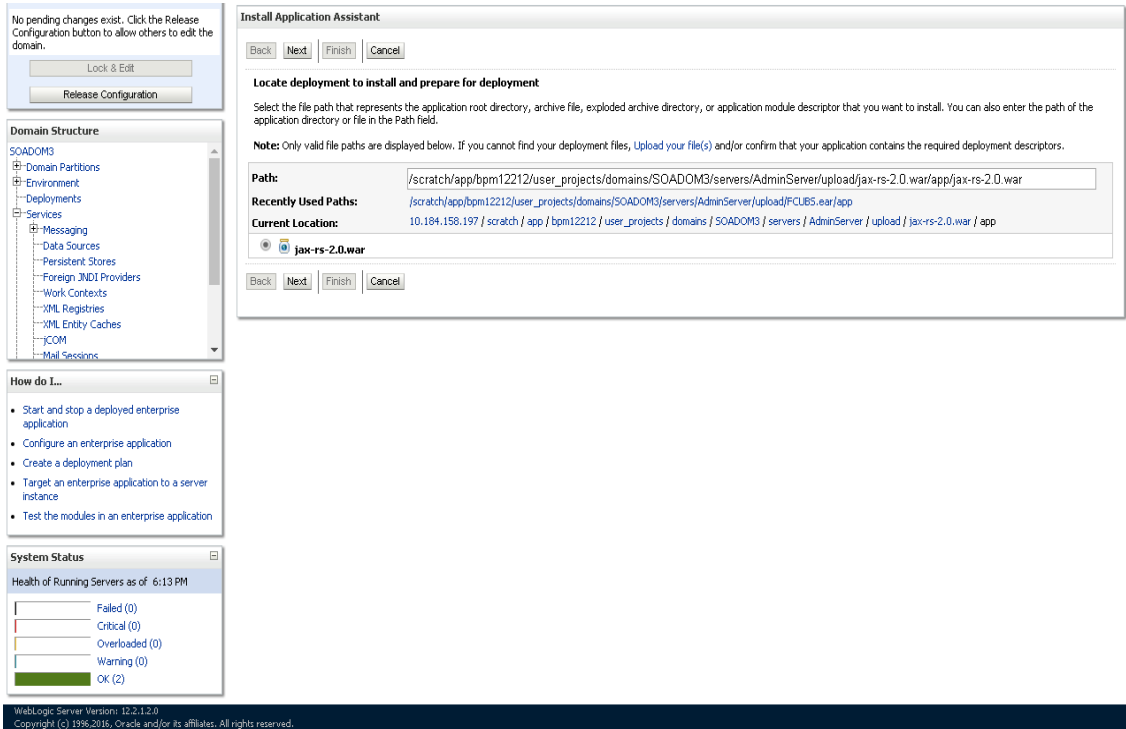


2. Specify the WebLogic administrator user name and password. Click 'Log In'.

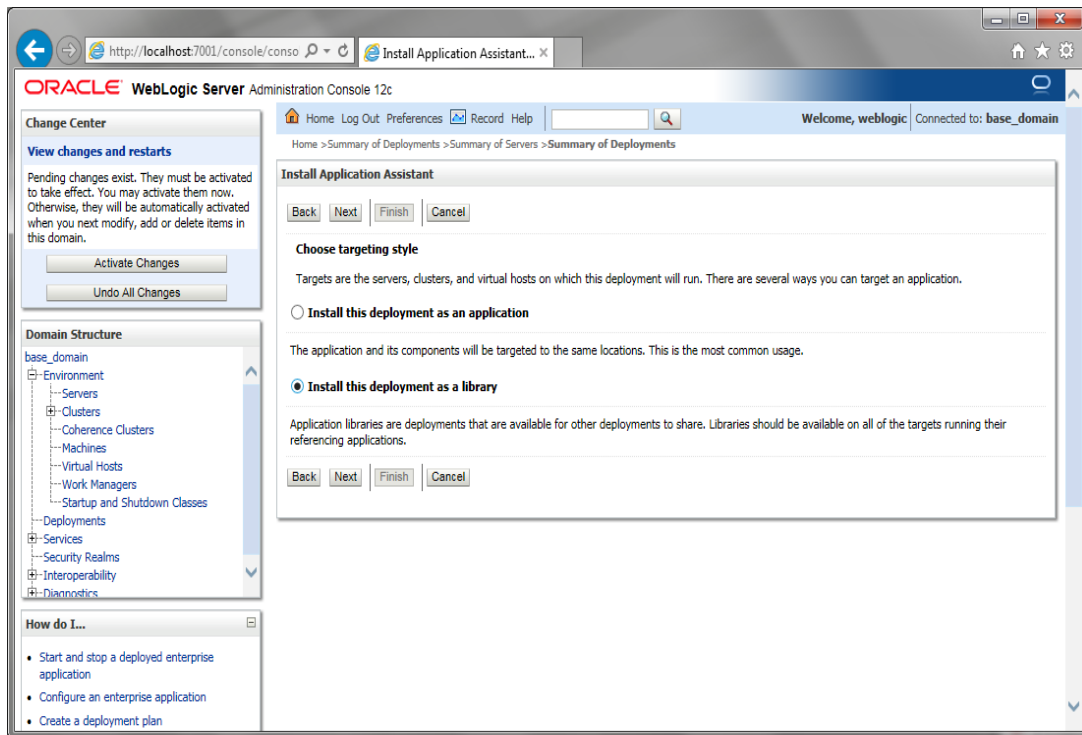
The following screen is displayed:

3. Click Install button.

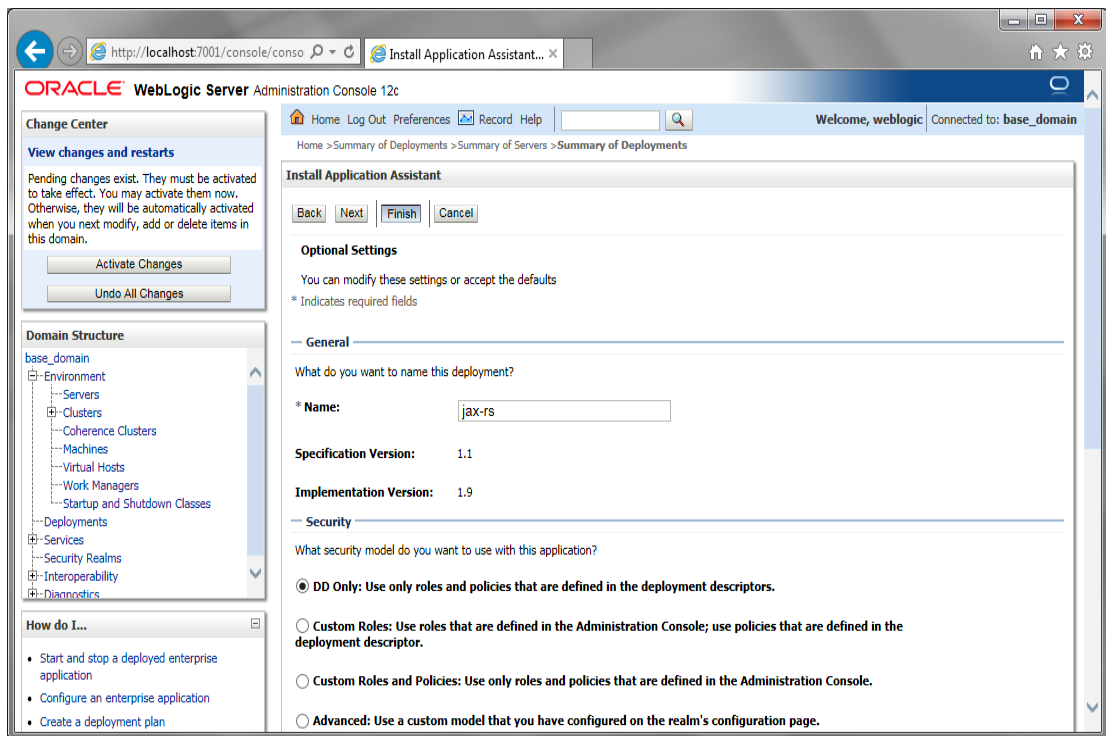
Name	State	Health	Type	Targets	Scope	Domain Partitions	Deployment Order
adf.oracle.businesseditor(1.0,12.2.1.0.0)	Active		Library	AdminServer_payments, pm_server1	Global		100
adf.oracle.domain(1.0,12.2.1.0.0)	Active		Library	AdminServer_payments, pm_server1	Global		100
adf.oracle.domain.webapp(1.0,12.2.1.0.0)	Active		Library	AdminServer_payments, pm_server1	Global		100
coherence-transaction-war	Active	OK	Resource Adapter	AdminServer_payments, pm_server1	Global		100
DMS Application (12.2.1.0.0)	Active	OK	Web Application	AdminServer_payments, pm_server1	Global		5
em	Active	OK	Enterprise Application	AdminServer_payments	Global		400
emagentsdkimpljar(12.4,12.1.0.4.0)	Active		Library	AdminServer_payments	Global		100
emagentsdkjar(12.4,12.1.0.4.0)	Active		Library	AdminServer_payments	Global		100
emas	Active		Library	AdminServer_payments	Global		100
emcore	Active		Library	AdminServer_payments	Global		100
emcoreclientjar	Active		Library	AdminServer_payments	Global		100
emcorecommonjar	Active		Library	AdminServer_payments	Global		100
emcoreconsolejar	Active		Library	AdminServer_payments	Global		100
emcoreentsdkjar(11.2.0.1.0,12.1.0.0.0)	Active		Library	AdminServer_payments	Global		100
emcoreptsjar	Active		Library	AdminServer_payments	Global		100
emcoresdkimpljar(11.2.0.1.0,12.1.0.0.0)	Active		Library	AdminServer_payments	Global		100
emcoresdkjar(11.2.0.1.0,12.1.0.0.0)	Active		Library	AdminServer_payments	Global		100
emcorejar	Active		Library	AdminServer_payments	Global		100
em_common(12.4,12.1.0.4.0)	Active		Library	AdminServer_payments	Global		100
em_core_sec_tec.jar	Active		Library	AdminServer_payments	Global		100



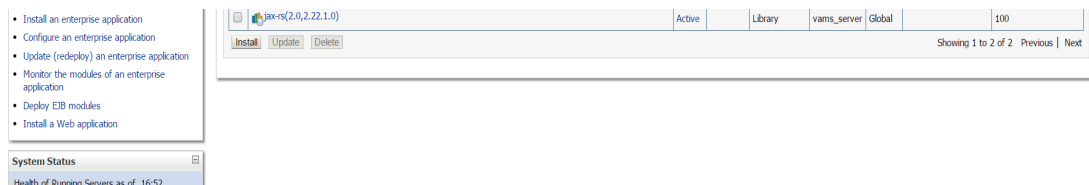
- Navigate and select jersey bundle under the path “w\server\common\deployable-libraries\jax-rs-2.0.war” and click next.



- Select “install this deployment as library”, select target server as managed server and click next.



6. Click finish button.



This library must appear in the deployment with Type column as “Library”

Note : Latest Jax-rs version will be jax-rs(2.0,2.22.1.0).

1.3.3 Deploying FCUBS Application from WebLogic Administration Console

To deploy Oracle FLEXCUBE Application from Oracle WebLogic administration console, follow the steps given below.

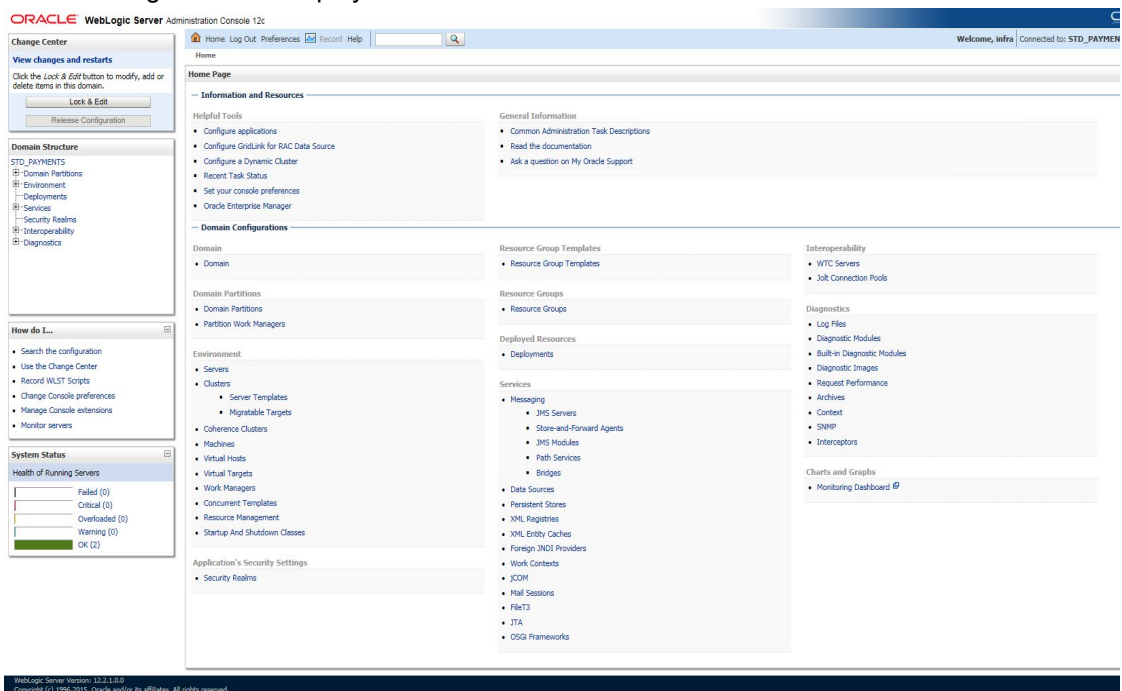
1. Start the Administrative Console of WebLogic application server. You can start this by entering Oracle WebLogic Admin Console URL in the address bar in an internet browser. Eg: <http://10.10.10:1001/console>

The following screen is displayed:



2. Specify the WebLogic administrator user name and password. Click 'Log In'.

The following screen is displayed:



3. You need to deploy an EAR. For e.g. 'FCUBSApp.ear'. Go to 'Deployment'.

- Click 'Lock & Edit' button to enable the buttons. This action enables the buttons.

The screenshot shows the Oracle WebLogic Server Administration Console. On the left, the 'Change Center' has the 'Lock & Edit' button highlighted. The main content area is titled 'Summary of Deployments' and contains a table of installed applications and modules. The table has columns for Name, State, Health, Type, Targets, Scope, Domain Partitions, and Deployment Order. The 'em' application is highlighted in blue.

Name	State	Health	Type	Targets	Scope	Domain Partitions	Deployment Order
oracle.businesseditor(1.0,12.2.1.0.0)	Active		Library	AdminServer_payments, pm_server1	Global		100
oracle.domain(1.0,12.2.1.0.0)	Active		Library	AdminServer_payments, pm_server1	Global		100
oracle.domain.webapp(1.0,12.2.1.0.0)	Active		Library	AdminServer_payments, pm_server1	Global		100
coherence-transaction-rar	Active	OK	Resource Adapter	AdminServer_payments, pm_server1	Global		100
OHS Application (12.2.1.0.0)	Active	OK	Web Application	AdminServer_payments, pm_server1	Global		5
em	Active	OK	Enterprise Application	AdminServer_payments	Global		400
emagentdimplpriv_jar(12.4.12.1.0.4.0)	Active		Library	AdminServer_payments	Global		100
emagentdinst_jar(12.4.12.1.0.4.0)	Active		Library	AdminServer_payments	Global		100
emagentd_jar(12.4.12.1.0.4.0)	Active		Library	AdminServer_payments	Global		100
emase	Active		Library	AdminServer_payments	Global		100
emcore	Active		Library	AdminServer_payments	Global		100
emcoreagent_jar	Active		Library	AdminServer_payments	Global		100
emcorecommon_jar	Active		Library	AdminServer_payments	Global		100
emcoreconsole_jar	Active		Library	AdminServer_payments	Global		100
emcoreinstsk_jar(11.2.0.1.0,12.1.0.0.0)	Active		Library	AdminServer_payments	Global		100
emcorepbs_jar	Active		Library	AdminServer_payments	Global		100
emcorereadskmp_jar(11.2.0.1.0,12.1.0.0.0)	Active		Library	AdminServer_payments	Global		100
emcorereadskmp_jar(11.2.0.1.0,12.1.0.0.0)	Active		Library	AdminServer_payments	Global		100
emcore_jar	Active		Library	AdminServer_payments	Global		100
em_common(12.4.12.1.0.4.0)	Active		Library	AdminServer_payments	Global		100

- Click 'Install' button.

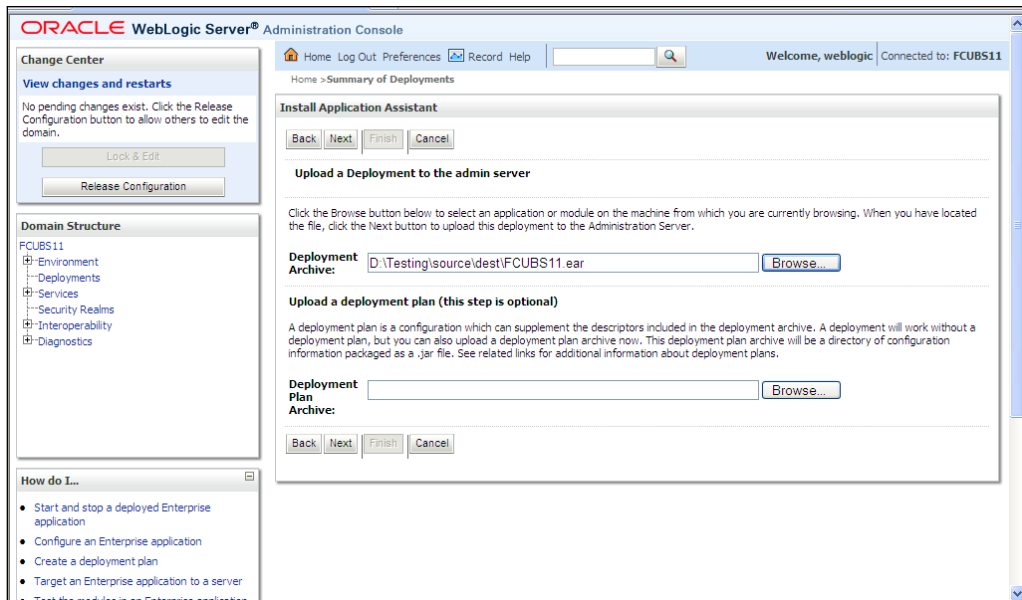
The following screen is displayed:

The screenshot shows the 'Install Application Assistant' dialog in the Oracle WebLogic Server Administration Console. The 'Path' field is set to 'D:\'. Below the field, a file explorer view shows the contents of the D:\ drive, including folders like '11.0', '9NT1272', 'APPOINT SOFTWARE SOLUTIONS', 'backup', 'bea', 'bea11g', 'bea_100', 'BmDbs', 'ClearCase', 'CRC', 'Desktop', and 'Documents and Settings'.

- In order to specify the path/location of the enterprise archive file, click the link 'upload your file(s)'.

- Click 'Next'.

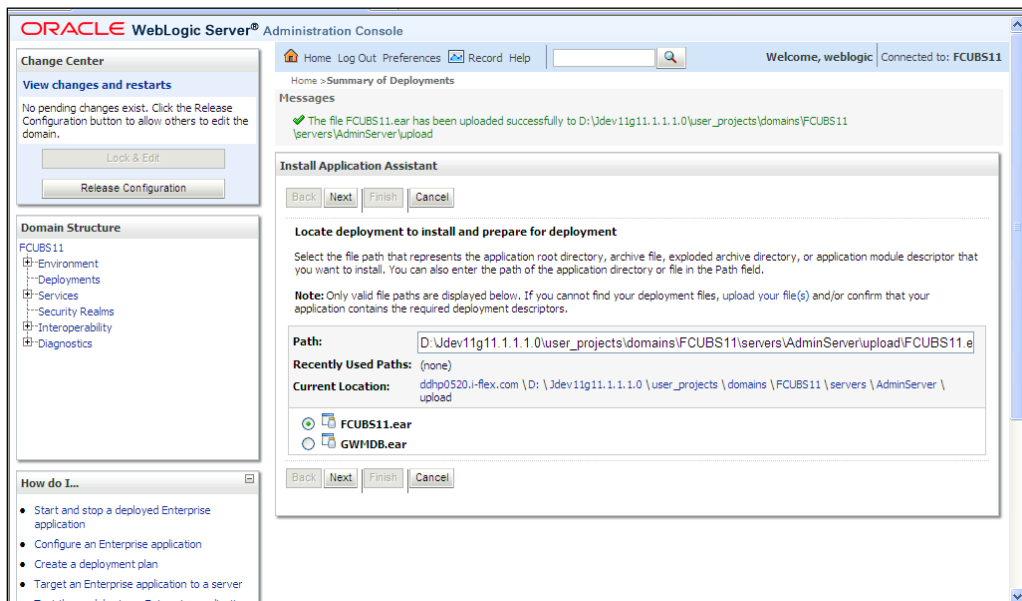
The following screen is displayed:



8. Specify the EAR file path. You can use the 'Browse' button to locate the file.

9. Click 'Next'.

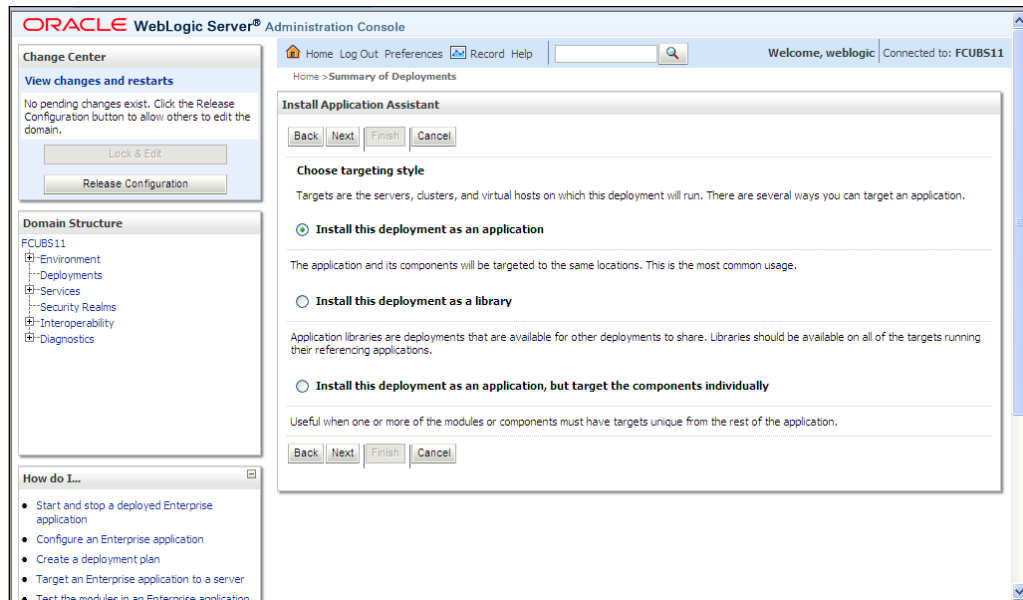
The following screen is displayed.



10. Select the application FCUBS EAR from the list.

11. Click 'Next'.

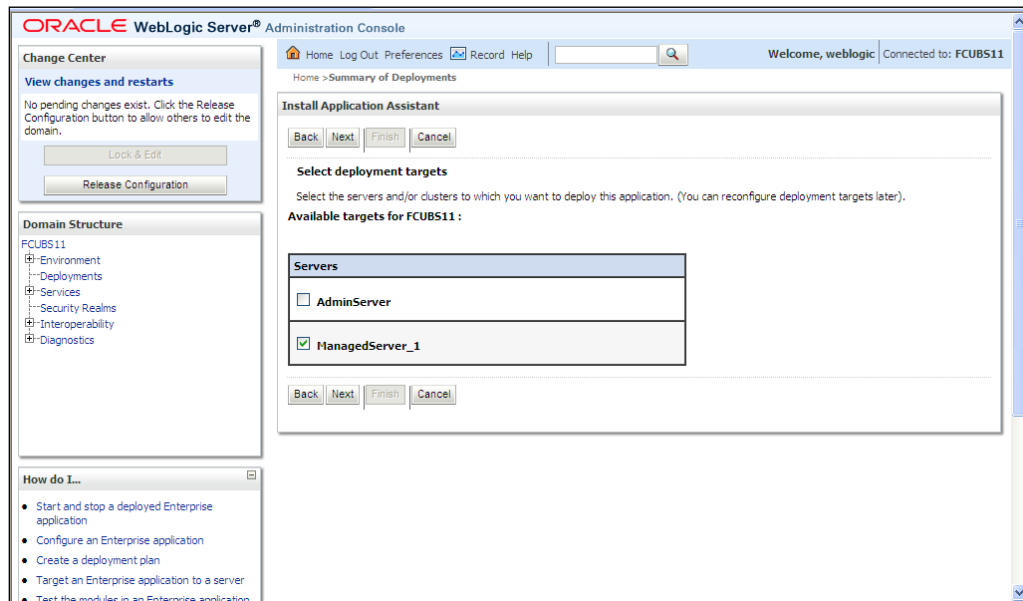
The following screen is displayed:



12. Choose the targeting style 'Install this deployment as an application'.

13. Click 'Next'.

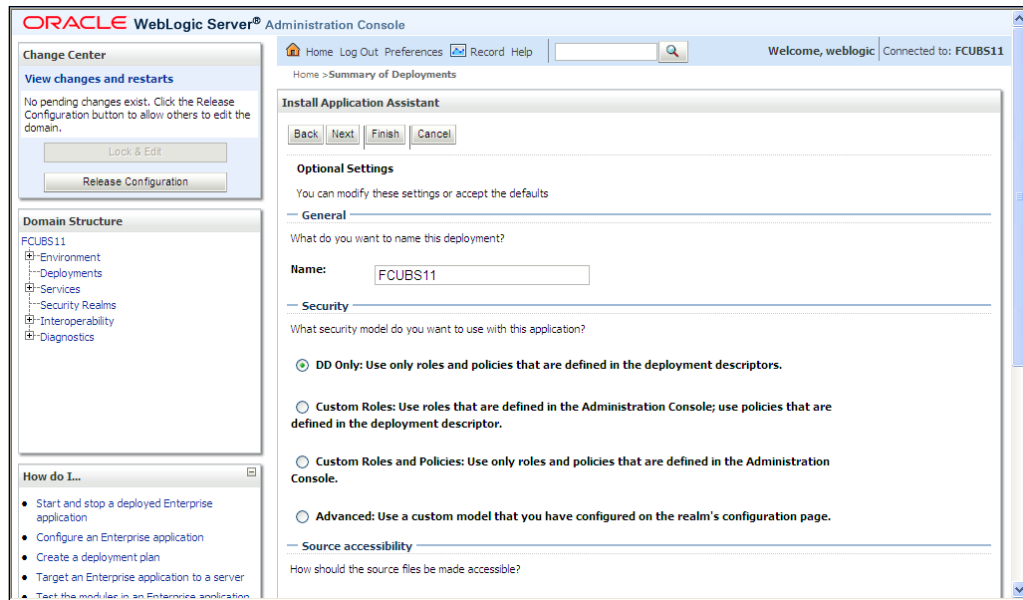
The following screen is displayed



14. Select the target of the application. You can choose the server 'AdminServer' or 'Managed Server(s)'.

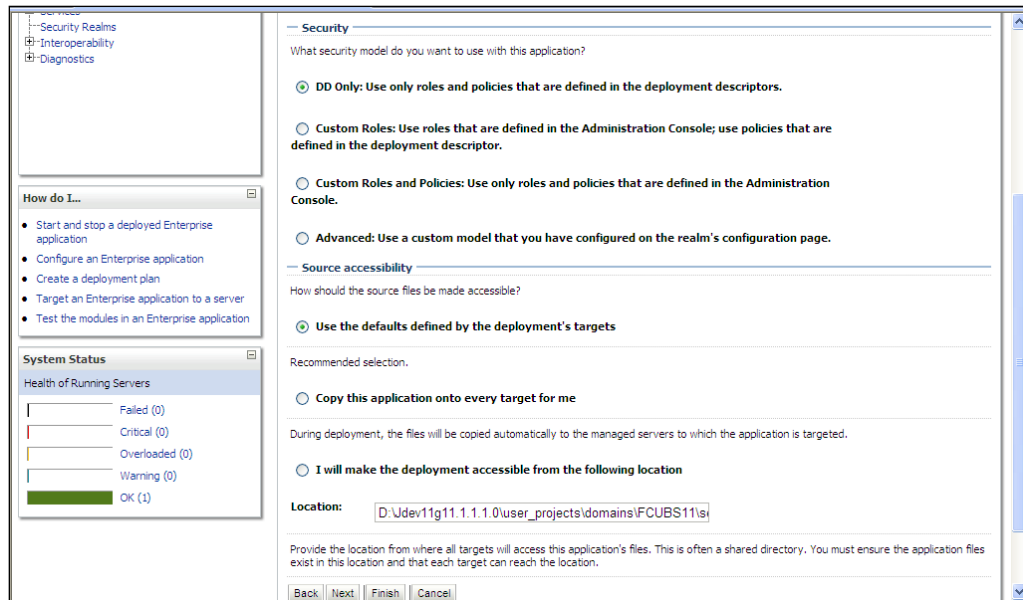
15. Click 'Next'.

The following screen appears.



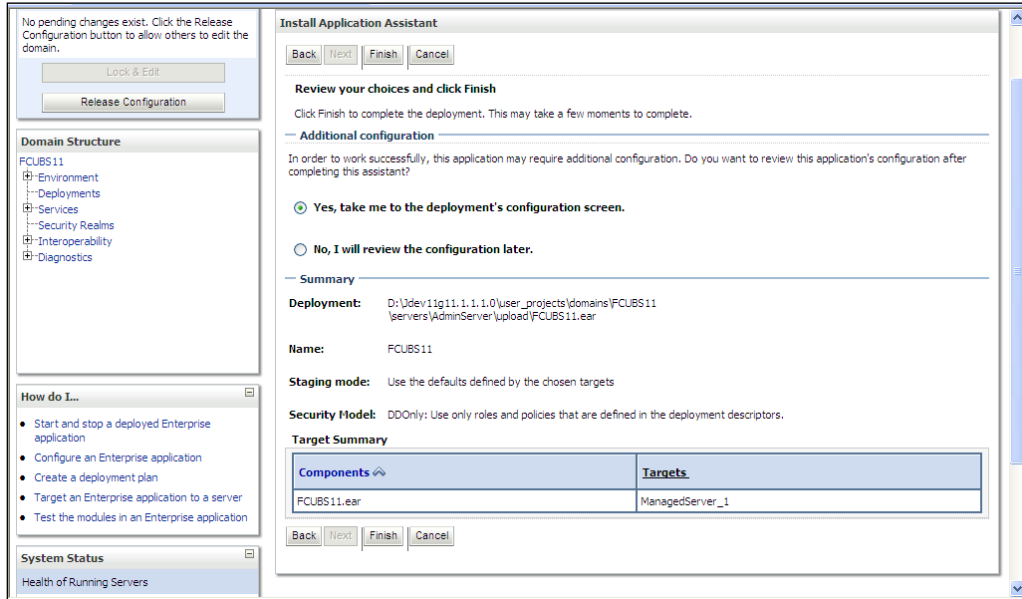
16. Check the deployment name.

The remaining portion of the screen is shown below:



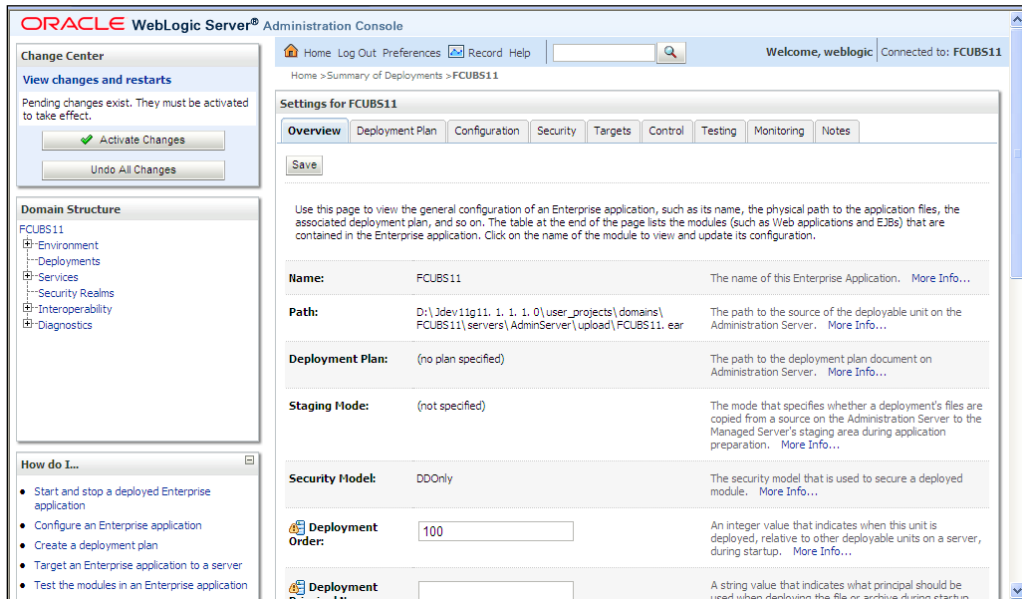
17. Check whether the deployment location is accessible or not.

The following screen is displayed.

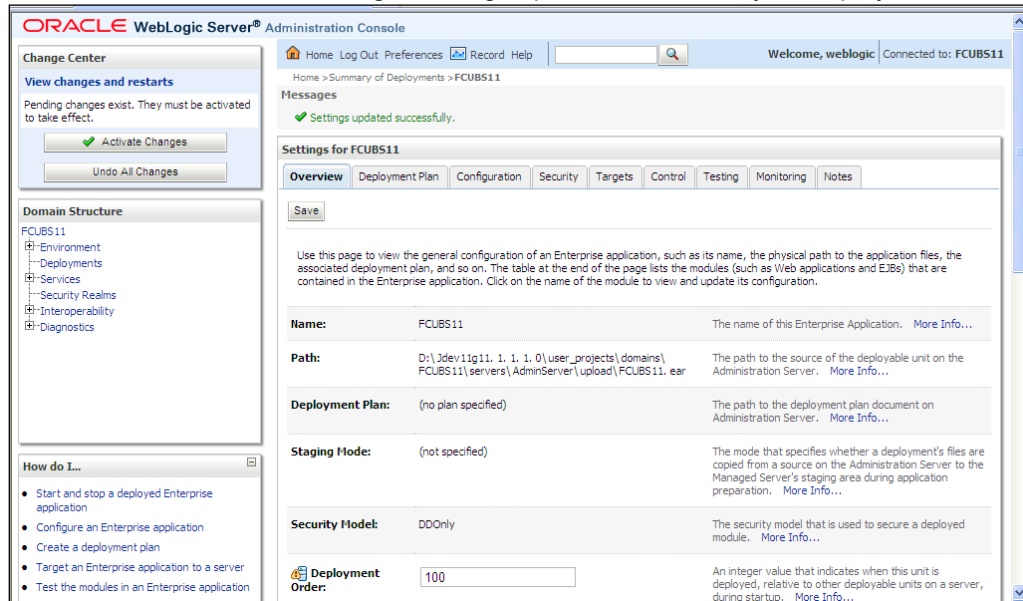


18. Click 'Finish' button. The following screen is displayed.

Change **Deployment Order** to **400** if the application includes **BPMN plug-in**.

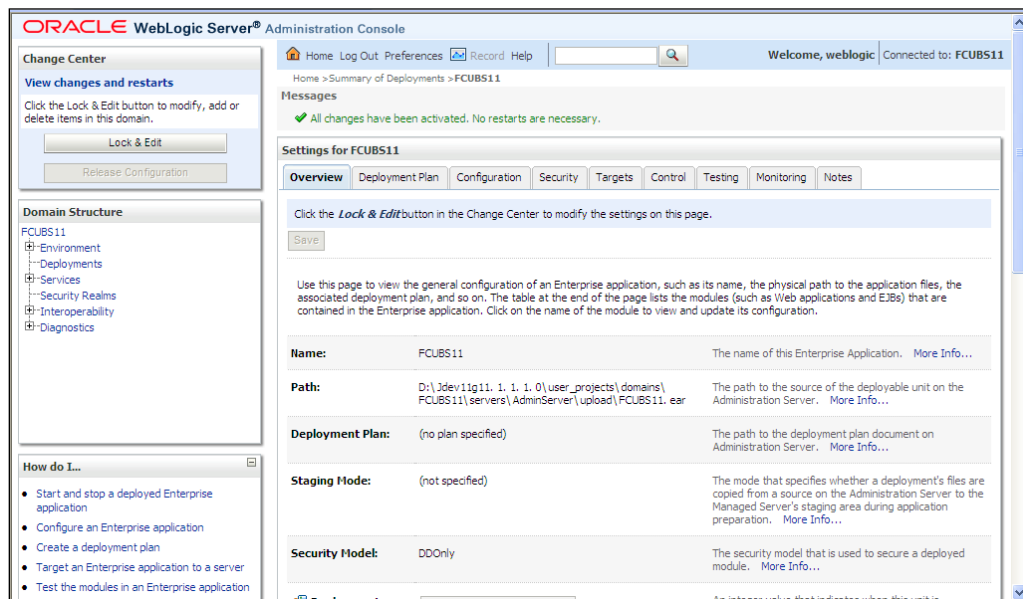


19. Click 'Save' button. The message 'Settings updated successfully' is displayed.

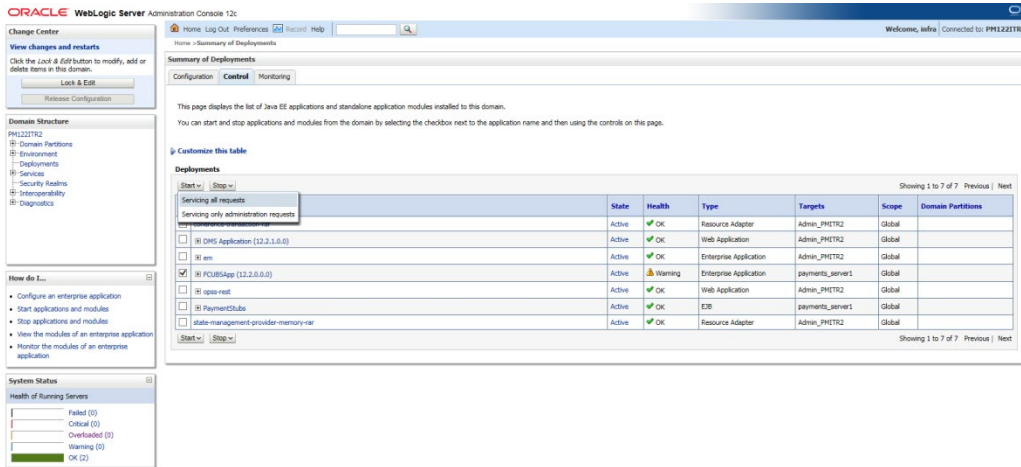


20. Click 'Activate Changes' button on the left pane. The message 'All the changes have been activated. No restarts are necessary' is displayed.

The screen is given below:

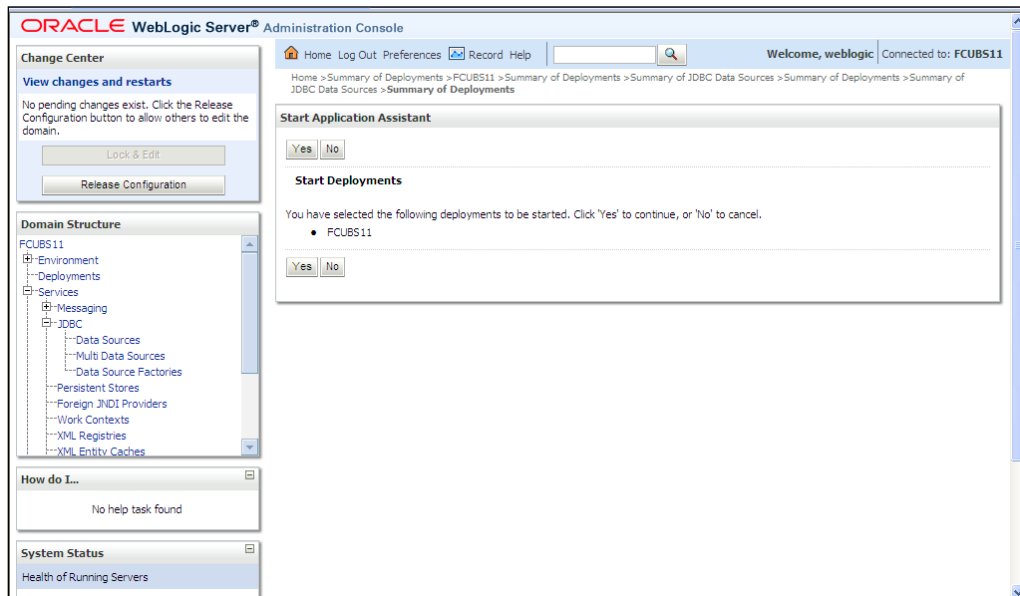


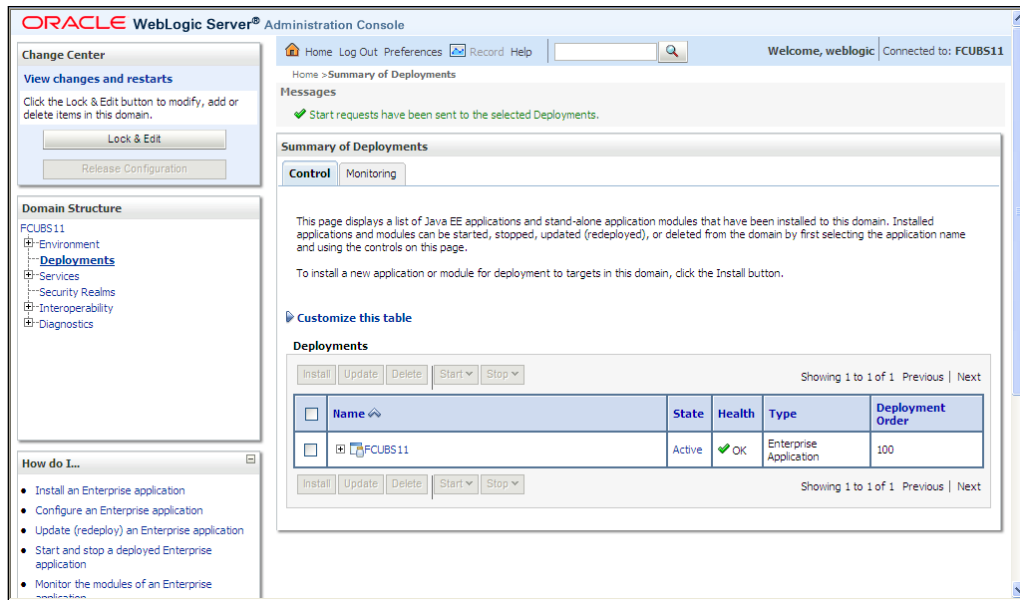
21. Click 'Deployment' on the left pane. Switch to Control tab. The following screen is displayed.



22. Click 'Start' drop-down button and select 'Servicing all requests'.

The following screen is displayed.





23. Click 'Yes'. The following screen is displayed.

This completes the deployment process.

1.3.4 Deploying Gateway/Scheduler Applications from WebLogic Administration Console

To deploy Oracle FLEXCUBE Gateway/Scheduler Application from Oracle WebLogic administration console, follow the steps given below.

1. Launch Administrative Console of WebLogic application server. You can launch this by entering Oracle WebLogic Admin Console URL in the address bar in an internet browser.

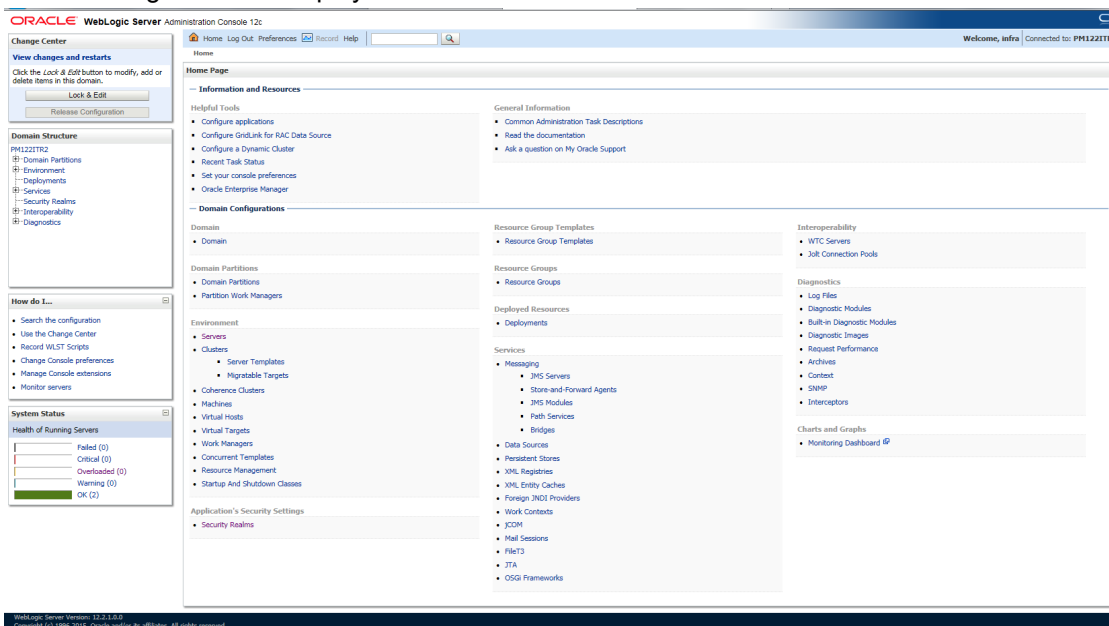
Eg: <http://10.10.10.10:1001/console>

The following screen is displayed:



- Specify the WebLogic administrator user name and password. Click 'Log In'.

The following screen is displayed:



- You need to deploy an EAR. For e.g. 'GWEJB.ear'. Go to 'Deployment'.

- Click 'Lock & Edit' button to enable the buttons. This action enables the buttons.

The screenshot shows the Oracle WebLogic Server Administration Console. On the left, the 'Change Center' panel has the 'Lock & Edit' button highlighted. The main content area is titled 'Summary of Deployments' and contains a table of installed applications and modules. The table has columns for Name, State, Health, Type, Targets, Scope, Domain Partitions, and Deployment Order. The table lists various applications like 'adf.oracle.businesseditor', 'adf.oracle.domain', 'coherence-transaction-rar', 'DMS Application', 'em', 'emagentb2kimplrvr', 'emagentb2kimpl', 'emas', 'emcore', 'emcoreclient_jar', 'emcorecommon_jar', 'emcoreconsole_jar', 'emcoresetd_jar', 'emcorespb_jar', 'emcoresdimpl_jar', 'emcoresd_jar', 'emcore_jar', and 'em_common'.

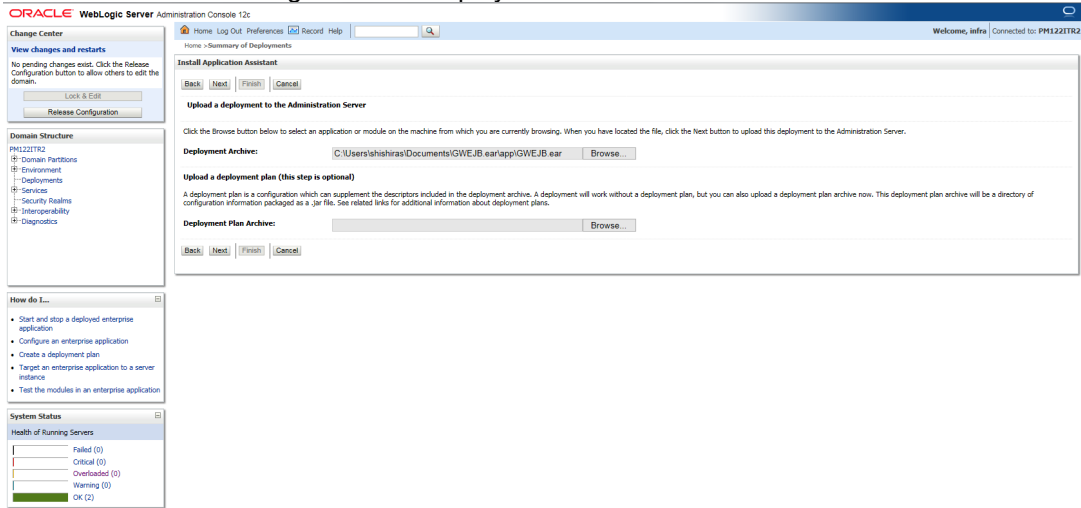
Name	State	Health	Type	Targets	Scope	Domain Partitions	Deployment Order
adf.oracle.businesseditor(1.0,12.2.1.0.0)	Active		Library	AdminServer_payments, pm_server1	Global		100
adf.oracle.domain(1.0,12.2.1.0.0)	Active		Library	AdminServer_payments, pm_server1	Global		100
adf.oracle.domain.webapp(1.0,12.2.1.0.0)	Active		Library	AdminServer_payments, pm_server1	Global		100
coherence-transaction-rar	Active	OK	Resource Adaptor	AdminServer_payments, pm_server1	Global		100
DMS Application (12.2.1.0.0)	Active	OK	Web Application	AdminServer_payments, pm_server1	Global		5
em	Active	OK	Enterprise Application	AdminServer_payments	Global		400
emagentb2kimplrvr(12.4,12.1.0.4.0)	Active		Library	AdminServer_payments	Global		100
emagentb2kimpl(12.4,12.1.0.4.0)	Active		Library	AdminServer_payments	Global		100
emagentb2k(12.4,12.1.0.4.0)	Active		Library	AdminServer_payments	Global		100
emas	Active		Library	AdminServer_payments	Global		100
emcore	Active		Library	AdminServer_payments	Global		100
emcoreclient_jar	Active		Library	AdminServer_payments	Global		100
emcorecommon_jar	Active		Library	AdminServer_payments	Global		100
emcoreconsole_jar	Active		Library	AdminServer_payments	Global		100
emcoresetd_jar(11.2.0.1.0,12.1.0.0.0)	Active		Library	AdminServer_payments	Global		100
emcorespb_jar	Active		Library	AdminServer_payments	Global		100
emcoresdimpl_jar(11.2.0.1.0,12.1.0.0.0)	Active		Library	AdminServer_payments	Global		100
emcoresd_jar(11.2.0.1.0,12.1.0.0.0)	Active		Library	AdminServer_payments	Global		100
emcore_jar	Active		Library	AdminServer_payments	Global		100
em_common(12.4,12.1.0.4.0)	Active		Library	AdminServer_payments	Global		100
em_core_rpc_p2p_jar	Active		Library	AdminServer_payments	Global		100

- Click 'Install' button. The following screen is displayed:

The screenshot shows the 'Install Application Assistant' dialog in the Oracle WebLogic Server Administration Console. The dialog has a 'Path' field set to 'D:\'. Below the field, a file browser view shows the contents of the D:\ drive, including folders like '11.0', '9NT 1272', 'APPOINT SOFTWARE SOLUTIONS', 'backup', 'bea', 'bea11g', 'bea_100', 'BrdDbgs', 'ClearCase', 'CRC', 'Desktop', and 'Documents and Settings'. The 'Current Location' is 'ddhp0520.i-flex.com D:\'. The dialog also has 'Back', 'Next', 'Finish', and 'Cancel' buttons.

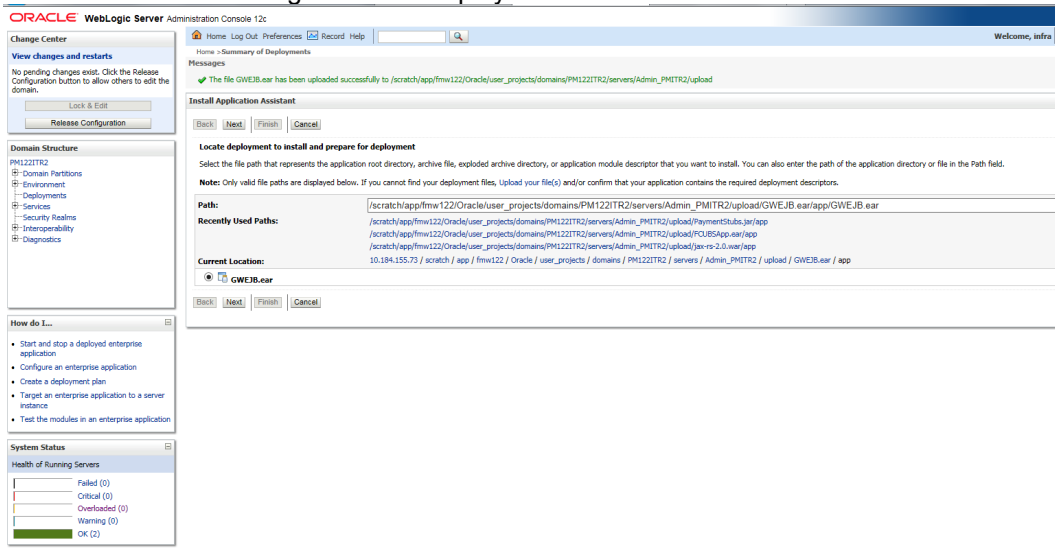
- In order to specify the path/location of the enterprise archive file, click the link 'upload your file(s)'.

7. Click 'Next'. The following screen is displayed:



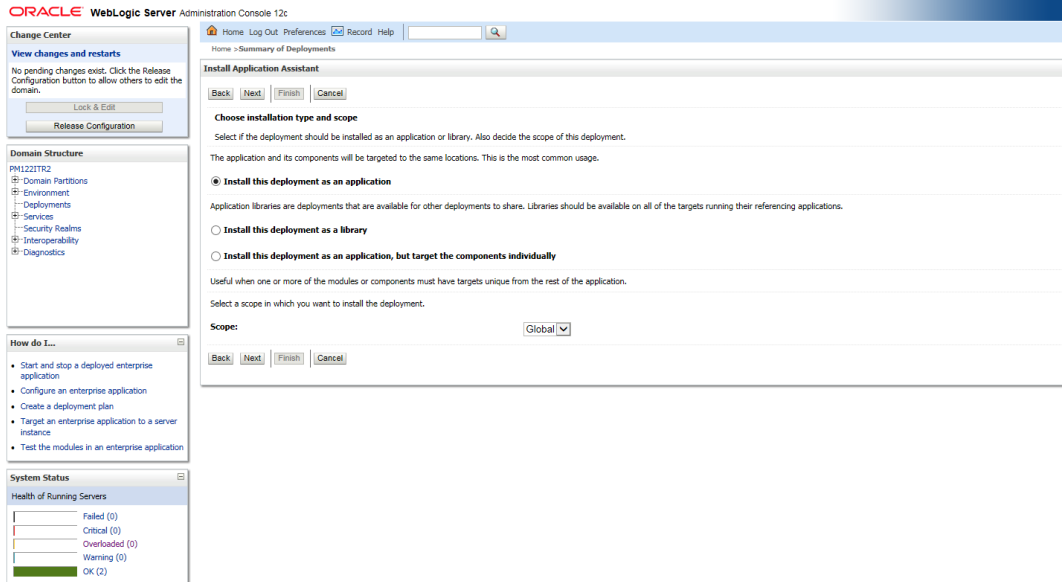
8. Specify the EAR file path. You can use the 'Browse' button to locate the file.

9. Click 'Next'. The following screen is displayed.



10. Select the application from the list.

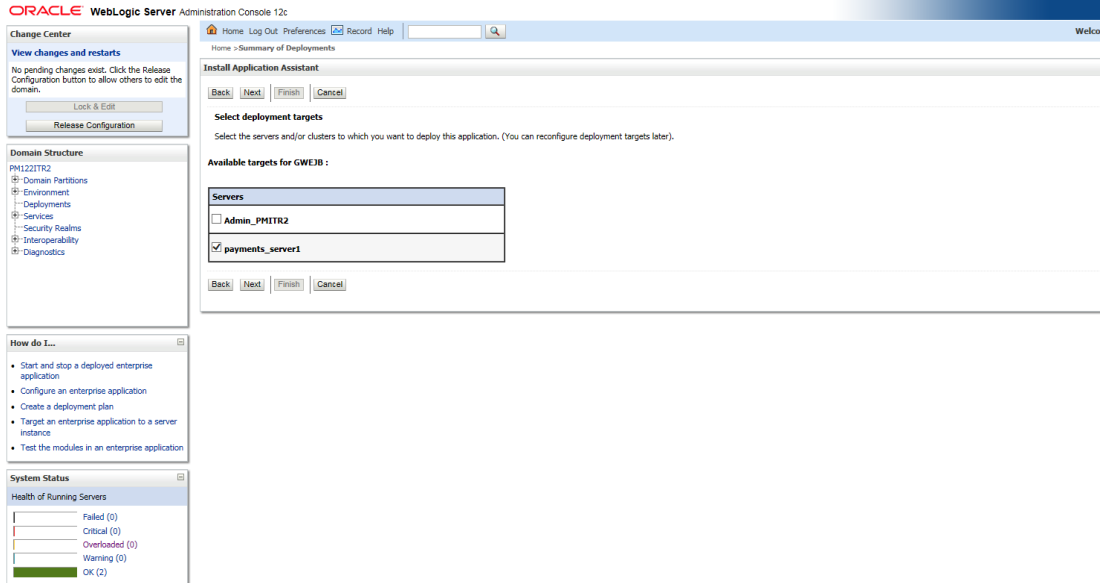
11. Click 'Next'. Following screen is displayed:



12. Choose the targeting style 'Install this deployment as an application'.

13. Click 'Next'.

The following screen is displayed



14. Select the target of the application. You can choose the server 'AdminServer' or 'Managed Server(s)'.

15. Click 'Next'. The following screen is displayed.

16. Check the deployment name.

The remaining portion of the screen is shown below:

17. Check whether the deployment location is accessible or not. The following screen is displayed.

The screenshot shows the Oracle WebLogic Server Administration Console. The main content area is titled "Review your choices and click Finish". It includes a "Summary" section with the following details:

- Deployment:** /scratch/app/fmw122/Oracle/user_projects/domains/PM1221TR2/servers/Admin_PM12R2/upload/GWEJB.ear/app/GWEJB.ear
- Name:** GWEJB
- Staging Mode:** Use the defaults defined by the chosen targets
- Plan Staging Mode:** Use the same accessibility as the application
- Security Model:** DDOOnly: Use only roles and policies that are defined in the deployment descriptors.
- Scope:** Global

Below the summary is a "Targets Summary" table:

Components	Targets
GWEJB.ear	payments_server1

Navigation buttons at the bottom include Back, Next, Finish, and Cancel.

18. Click 'Finish' button. The following screen is displayed.

The screenshot shows the "Settings for GWEJB(12.2.0.0.0)" configuration page. The "Overview" tab is selected, displaying the following configuration details:

- Name:** GWEJB
- Scopes:** Global
- Archive Version:** 12.2.0.0.0
- Path:** /scratch/app/fmw122/Oracle/user_projects/domains/PM1221TR2/servers/Admin_PM12R2/upload/GWEJB.ear/app/GWEJB.ear
- Deployment Plan:** (no plan specified)
- Staging Mode:** (not specified)
- Plan Staging Mode:** (not specified)
- Security Model:** DDOOnly
- Deployment Order:** 100
- Deployment Principal Name:** (empty field)

At the bottom, there is a "Modules and Components" section showing a list of components:

- GWEJB (12.2.0.0.0)
 - ERB
 - PCMainProcERB
 - PCSVRouterERB
 - GWEJB

Navigation buttons include Save and Cancel.

19. Click 'Save' button. The message 'Settings updated successfully' is displayed.

The screenshot shows the Oracle WebLogic Server Administration Console. The main content area displays the 'Settings for GWEJB(12.2.0.0.0)' page. A message at the top states 'Settings updated successfully'. The left-hand navigation pane shows the 'Change Center' section with the 'Activate Changes' button highlighted. Below this, there are sections for 'Domain Structure', 'How do I...', 'System Status', and 'Modules and Components'. The 'Modules and Components' section lists several modules including GWEJB(12.2.0.0.0), EJBs, PCMainProcEJB, and PCSrvRouterEJB.

20. Click 'Activate Changes' button on the left pane. The message 'All the changes have been activated. No restarts are necessary' is displayed.

The screen is given below:

The screenshot shows the Oracle WebLogic Server Administration Console. The main content area displays the 'Settings for GWEJB(12.2.0.0.0)' page. A message at the top states 'All changes have been activated. No restarts are necessary'. The left-hand navigation pane shows the 'Change Center' section with the 'Release Configuration' button highlighted. Below this, there are sections for 'Domain Structure', 'How do I...', 'System Status', and 'Modules and Components'. The 'Modules and Components' section lists several modules including GWEJB(12.2.0.0.0), EJBs, PCMainProcEJB, and PCSrvRouterEJB.

21. Click 'Deployment' on the left pane. Switch to Control tab. The following screen is displayed.

Summary of Deployments

This page displays the list of Java EE applications and standalone application modules installed to this domain.

You can start and stop applications and modules from the domain by selecting the checkbox next to the application name and then using the controls on this page.

Customize this table

Deployments

Start	Stop	State	Health	Type	Targets	Scope	Domain Partition
[Start] [Stop]		Active	OK	Resource Adapter	Admin_PMTIR2	Global	
[Start] [Stop]		Active	OK	Web Application	Admin_PMTIR2	Global	
<input type="checkbox"/>		Active	OK	Enterprise Application	Admin_PMTIR2	Global	
<input type="checkbox"/>		Active	Warning	Enterprise Application	payments_server1	Global	
<input checked="" type="checkbox"/>		Prepared	OK	Enterprise Application	payments_server1	Global	
<input type="checkbox"/>		Active	OK	Web Application	Admin_PMTIR2	Global	
<input type="checkbox"/>		Active	OK	EJB	payments_server1	Global	
<input type="checkbox"/>		Active	OK	Resource Adapter	Admin_PMTIR2	Global	

Showing 1 to 8 of 8 Prev

22. Click 'Start' drop-down button and select 'Servicing all requests'.

The following screen is displayed.

Start Application Assistant

Yes No

Start Deployments

You have selected the following deployments to be started. Click 'Yes' to continue, or 'No' to cancel.

- GWEJB(12.2.0.0.0)

Yes No

23. Click 'Yes'. The following screen is displayed.

The screenshot shows the Oracle WebLogic Server Administration Console interface. The main content area is titled "Summary of Deployments" and contains a table of installed applications. The table has the following data:

Name	State	Health	Type	Targets	Scope	Domain Partitions
coherence-transaction-rar	Active	OK	Resource Adapter	Admin_PMTIR2	Global	
DMS Application (12.2.1.0.0)	Active	OK	Web Application	Admin_PMTIR2	Global	
em	Active	OK	Enterprise Application	Admin_PMTIR2	Global	
FCLBApp (12.2.0.0.0)	Active	Warning	Enterprise Application	payments_server1	Global	
GWESB (12.2.0.0.0)	Active	OK	Enterprise Application	payments_server1	Global	
app-vst	Active	OK	Web Application	Admin_PMTIR2	Global	
PaymentClub	Active	OK	EJB	payments_server1	Global	
state-management-provider-memory-rar	Active	OK	Resource Adapter	Admin_PMTIR2	Global	

The interface also includes a left-hand navigation pane with sections like "Change Center", "Domain Structure", "How do I...", and "System Status". The "System Status" section shows "Health of Running Servers" with a bar chart indicating 0 Failed, 0 Critical, 0 Overloaded, 0 Warning, and 2 OK servers.

This completes the deployment process.

24. Repeat the same steps from 1.3.3 for deploying GWWS(gateway webservice), Gateway MDB & Gateway HTTP servlet



Deploying Oracle FLEXCUBE Application on WebLogic
[November] [2022]
Version 14.6.2.0.0

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
<https://www.oracle.com/industries/financial-services/index.html>

Copyright © [2007], [2022], Oracle and/or its affiliates. All rights reserved.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate failsafe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

This software or hardware and documentation may provide access to or information on content, products and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services.