

Pharmacy Reengineering
Medication Order Check Healthcare Application
(MOCHA) Server
Installation Guide



Version 2.0

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Revision History

Each time this manual is updated, the Title Page lists the new revised date and this page describes the changes. No Change Pages document is created for this manual. Replace any previous copy with this updated version.

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1. Introduction

1.1. Overview of PRE MOCHA Server

MOCHA (Medication Order Check Healthcare Application) Server is a J2EE Application which is used by the VistA MOCHA Pharmacy Application to conduct enhanced order checks using First Databank's (FDB) MedKnowledge Framework¹. FDB is a drug data product that provides the latest identification and safety information on medications. Additionally, FDB provides the latest algorithms used to perform order checks. The order checks performed by MOCHA include:

- **Enhanced Drug-Drug Interactions Order Checks** –provides the clinician with more information by displaying a short description of the clinical effects of the drug interaction and providing an optional view of a detailed professional drug interaction monograph. It checks interactions between two or more drugs.
- **Enhanced Duplicate Therapy Order Checks** –uses FDB's Enhanced Therapeutic Classification (ETC) System, which allows checking for duplicated drug classifications between two or more drugs.
- **Drug Dose Order Check** – checks if the prescribed dose for an ordered drug is within the proper dosing parameters based on the patient's age, weight, and body surface area. This includes both maximum single dose checking and daily dose range checking. General dosing information for a drug will be provided when the other dosing checks cannot be performed.

1.2. Scope of this Document

MOCHA server is comprised of four logical deployment components: Application Server, Database Server, Failover Server, and Legacy Interface.

The purpose of this Installation Guide is to provide instructions for the deployment of the PRE MOCHA Server application build on a WebLogic (application) Server and provide an overview of the Database Server component.

¹ At the time of development, this product was known as FDB Drug Information Framework (commonly abbreviated as FDB-DIF). The references to FDB-DIF in this manual are necessary due to previously completed code and instructions that could not be changed to match the new product name.

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2. Installation Prerequisites

For successful deployment of the MOCHA Server software at a site, the following assumptions must be met:

- The Deployment Server is configured and running.
- WebLogic is configured to run with the Java™ Standard Edition Development Kit, Version 1.6+.
- Access to the WebLogic console is by means of any valid administrative user name and password.
- The proper Caché database driver libraries for the chosen deployment environment are present on the class path for the respective Deployment Servers.
- Red Hat Enterprise Linux 5.2 operating system is properly installed.
- Domain Name Server (DNS) resolution is configured for the Deployment server for MOCHA Server.
- The installation instructions are followed in the order that the sections are presented within this Installation Guide.
- FDB-DIF v3.3 database is installed on the Database Server. Installation instructions are provided in FDB-DIF Installation/Migration guide. Contact the PRE Configuration Manager who should be identified on the project's Technical Services Project Repository (TSPR) site for a copy of the guide and installations/migration scripts.

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3. Database Tier Overview

The FDB-DIF database used by MOCHA Server requires Caché to be successfully installed. The Caché database has specific installation procedures and files for each operating system. Red Hat Linux must be successfully installed prior to installing the Caché database. A successful installation of a Caché database instance is one in which the installation guide procedures are followed, resulting in an error-free installation.

The installation of the Caché database is described in the Caché Installation Guide, Version 2008.2, Section 4, Installing Caché on UNIX and Linux. The standard installation should be used to install the Caché database server software.

For successful deployment of the MOCHA Server 2.0 software at a site, the FDB-DIF v3.3 database must be installed. Installation instructions are provided in FDB-DIF Installation/Migration guide. Contact the PRE Configuration Manager who should be identified on the project's Technical Services Project Repository (TSPR) site for a copy of the guide and installations/migration scripts.

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4. WebLogic Application Server Configuration

The following instructions detail the steps required to perform an installation of a release for the MOCHA software when an existing release is already deployed. These steps assume a fresh installation has been completed, and there is an existing MOCHA Server Application up and running which will be replaced by the WebLogic Build.

This is a two-step process: first, remove the old release (build), and then deploy the new PRE MOCHA Server application build. The server must not be in-use while this operation is taking place.

4.1. Un-Deploy Old MOCHA Server Build

The following steps detail how to un-deploy the MOCHA Server build:

1. Open and log into the WebLogic console. This is located at: `http://<Deployment Machine>:7001/console`.
2. Within the Domain Structure panel in the left column of the WebLogic console, click the Deployments node. For reference, see Figure 4-1.

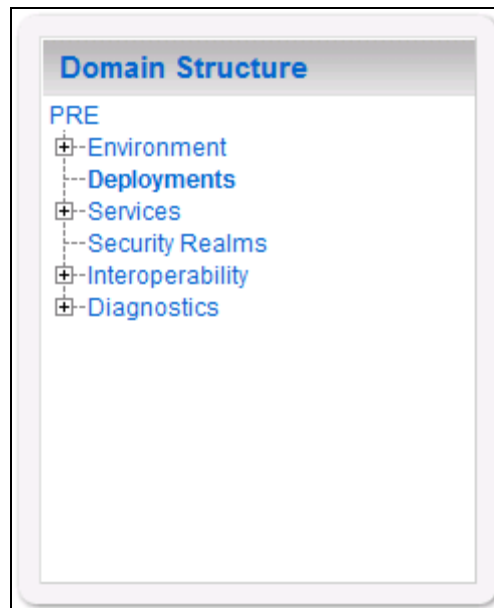


Figure 4-1: Domain Structure

3. Within the Change Center panel in the left column of the WebLogic console, click Lock & Edit. For reference, see Figure 4-2.

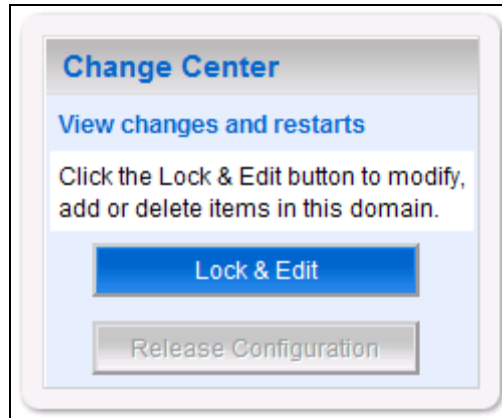


Figure 4-2: Change Center

4. WebLogic will now display the panel Summary of Deployments in the right column of the console, where all deployments for the WebLogic domain are listed. For reference, see Figure 4-3.

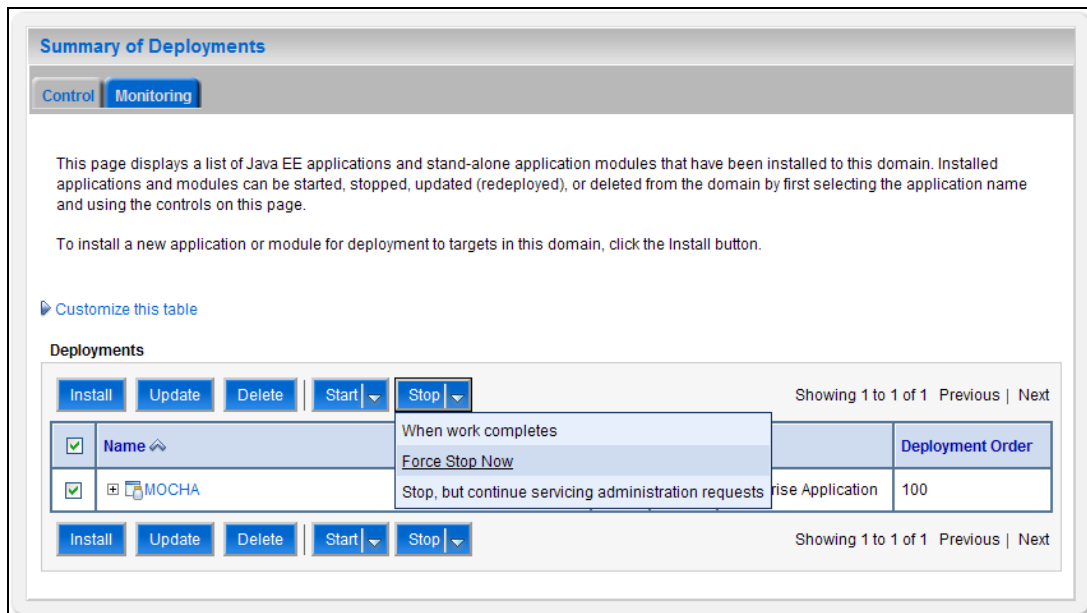


Figure 4-3: Summary of Deployments – Stopping MOCHA

5. Select the previously deployed MOCHA (Server) deployment, click Stop, and then select Force Stop Now from the drop-down list box.

- WebLogic will now display the panel Force Stop Application Assistant in the right column of the console for confirmation to start servicing requests. For reference, see Figure 4-4.

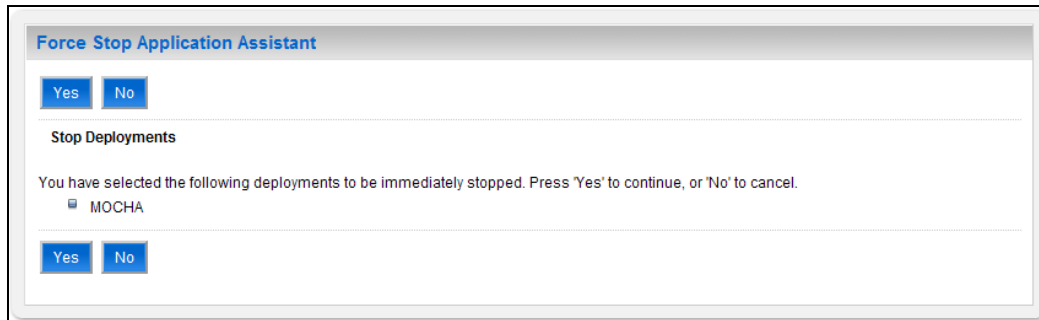


Figure 4-4: Force Stop Application Assistant

- Click Yes in the Force Stop Application Assistant panel in the right column of the WebLogic console.
- WebLogic now returns to the Summary of Deployments panel in the right column of the console. For reference, see Figure 4-5.

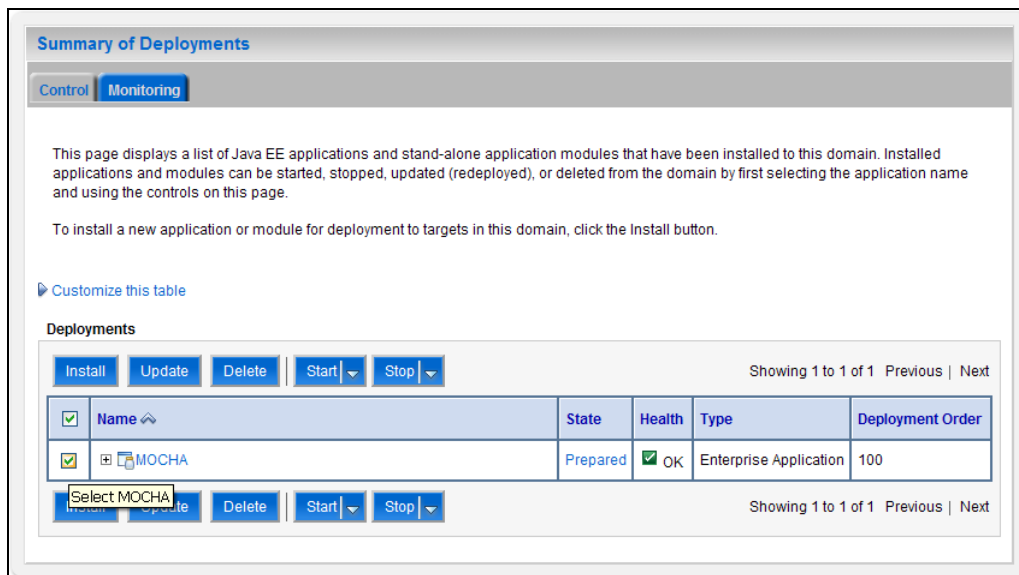


Figure 4-5: Summary of Deployments – MOCHA Deployment Prepared

- Verify that the State of the MOCHA deployment is Prepared.
- Select the previously deployed MOCHA deployment, and then click Delete.

11. WebLogic will now display the panel Delete Application Assistant in the right column of the console for confirmation to start servicing requests. For reference, see Figure 4-6.

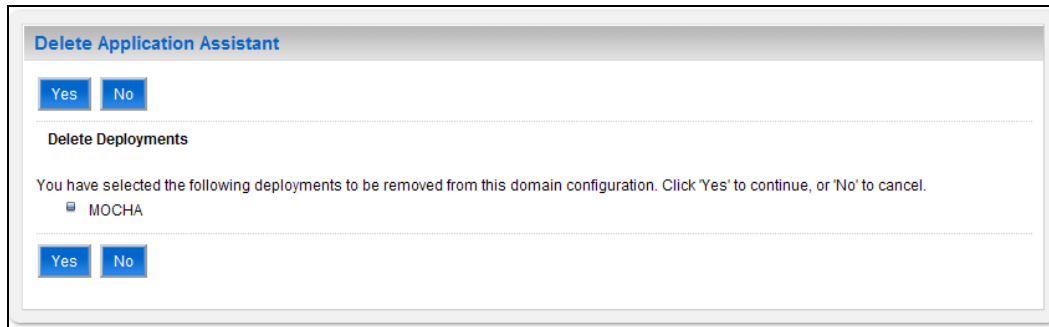


Figure 4-6: Delete Application Assistant

12. Click Yes in the Delete Application Assistant panel in the right column of the WebLogic console.
13. WebLogic now returns to the Summary of Deployments panel in the right column of the console. For reference, see Figure 4-7.

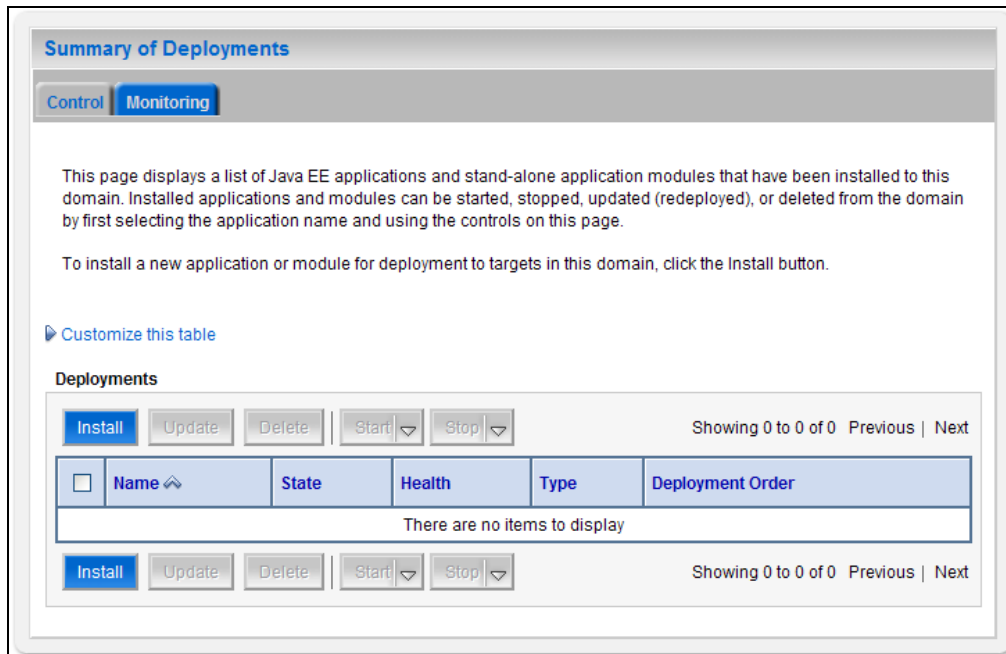


Figure 4-7: Summary of Deployments – MOCHA Deployment Deleted

14. Verify that the MOCHA deployment is deleted and no longer present.

15. Within the Change Center panel in the left column of the WebLogic console, click Activate Changes. For reference, see Figure 4-8.

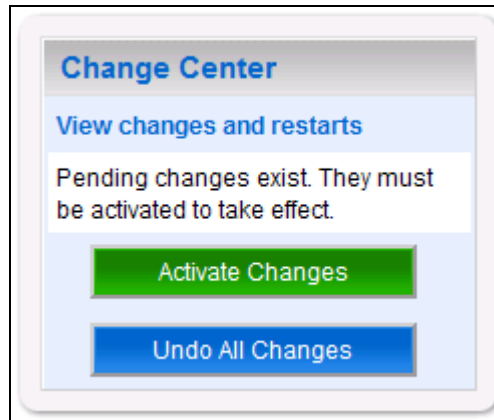


Figure 4-8: Activate Changes

4.2. Deploy New MOCHA Server Build

The following steps detail the deployment of the MOCHA Server application Build on WebLogic application Server.

1. Open and log into the WebLogic console. This is located at: `http://<Deployment Machine>:7001/console`.
2. Within the Domain Structure panel in the left column of the WebLogic console, click the Deployments node. For reference, see Figure 4-9.

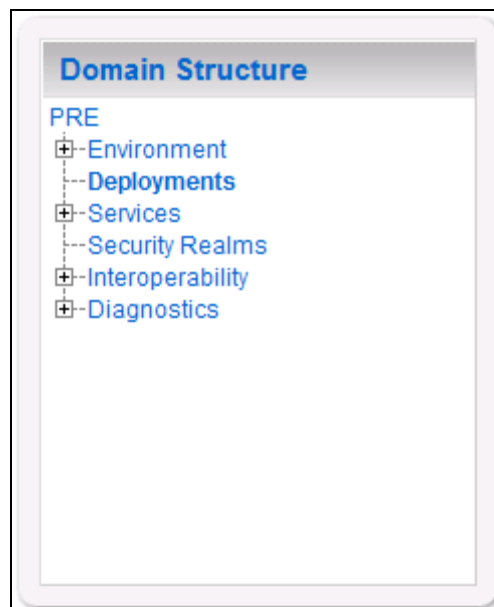


Figure 4-9: Domain Structure

3. Within the Change Center panel in the left column of the WebLogic console, click Lock & Edit. For reference, see Figure 4-10.

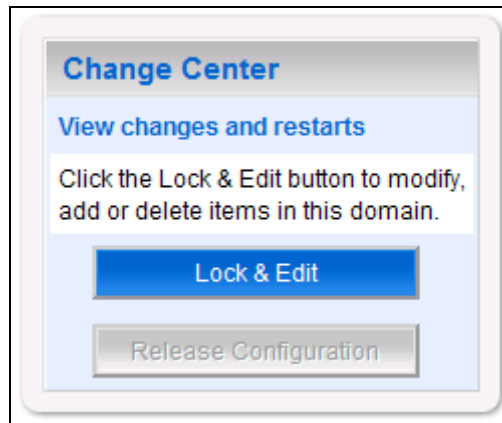


Figure 4-10: Change Center

4. Click Install found in the Deployments panel in the right column of the WebLogic console. For reference, see Figure 4-11.

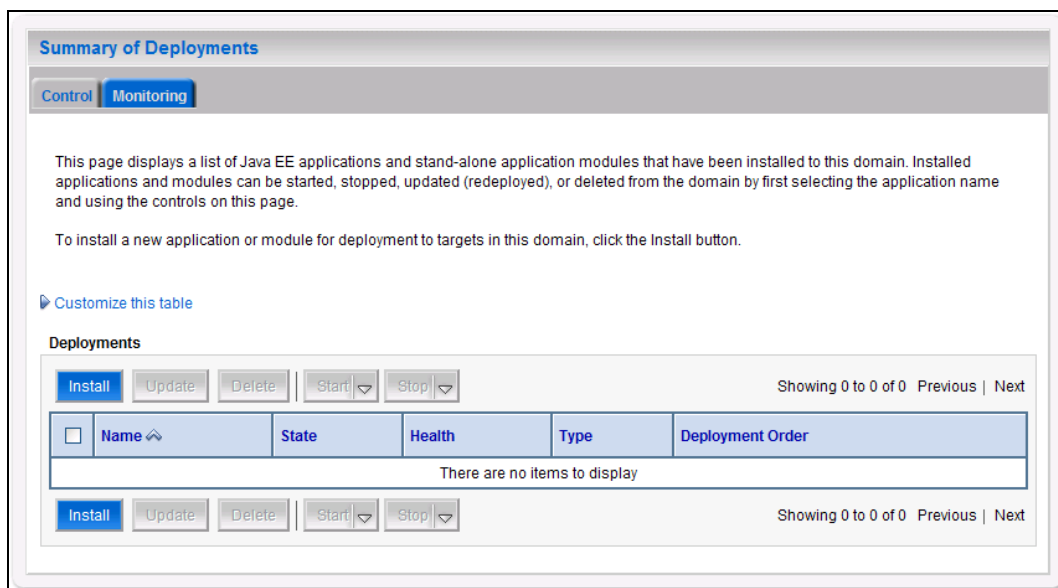


Figure 4-11: Deployments

- WebLogic will now display the panel `Install Application Assistant` in the right column of the console, where the location of the MOCHA Server deployment will be found. For reference, see Figure 4-12.

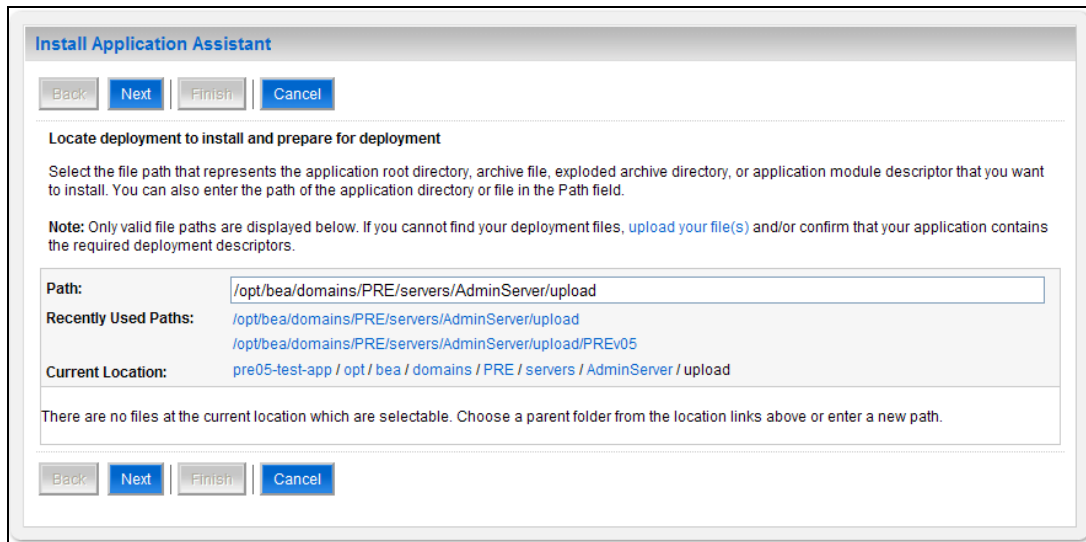


Figure 4-12: Install Application Assistant

- Select the MOCHA deployment; select MOCHA Server-> `mocha-server-x.x.xx.xxx.ear` file. (version # will depend on the current MOCHA Server version #. E.g. for MOCHA Server 2.0 -> **mocha-server-2.0.00.009.ear**).
- If the MOCHA Server build for deployment has already been transferred to the Deployment Machine, navigate to the deployment file location using the links and file structure displayed within the Location panel within the Install Application Assistant in the right column of the console. (version # will depend on the current MOCHA Server version #. E.g., for MOCHA Server 2.0 -> **mocha-server-2.0.00.009.ear**).

a)

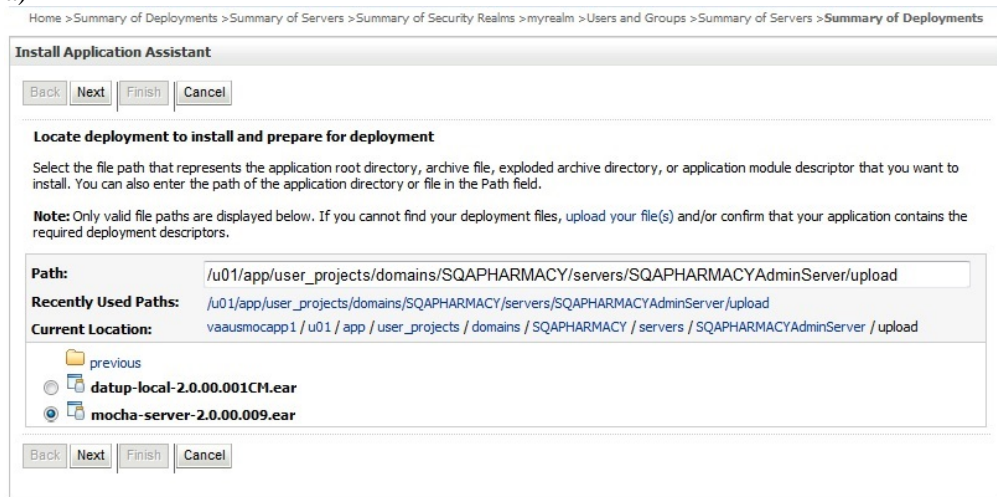


Figure 4-13: Locate Deployment to Install and Prepare for Deployment

- b) If the MOCHA Server build for deployment has not been transferred to the Deployment Machine:
- (1) Click on the upload your file(s) link in the Install Application Assistant panel in the right section of the console.
 - (2) Click the Deployment Archive Browse to see the Choose file dialogue used to select the Deployment Archive.
 - (3) Click Next in the Upload a Deployment to the admin server panel in the right column of the WebLogic console to return to the Locate deployment to install and prepare for deployment panel within the Install Application Assistant. For reference, see Figure 4-14.(version # will depend on the current MOCHA Server version # e.g. for MOCHA Server 2.0 -> **mocha-server-2.0.00.009.ear**).

Install Application Assistant

Back Next Finish Cancel

Upload a Deployment to the admin server

Click the Browse button below to select an application or module on the machine from which you are currently browsing. When you have located the file, click the Next button to upload this deployment to the Administration Server.

Deployment Archive: C:\MOCHA.v1.0.00.001.ear Browse...

Upload a deployment plan (this step is optional)

A deployment plan is a configuration which can supplement the descriptors included in the deployment archive. A deployment will work without a deployment plan, but you can also upload a deployment plan archive now. This deployment plan archive will be a directory of configuration information packaged as a .jar file. See related links for additional information about deployment plans.

Deployment Plan Archive: Browse...

Back Next Finish Cancel

Figure 4-14: Upload a Deployment to the Admin Server

8. Once the MOCHA Server build for deployment is located and selected, click Next.

9. WebLogic will now display the panel Choose targeting style within the Install Application Assistant in the right column of the console. Leave the default value selected, Install this deployment as an application, and click Next. For reference, see Figure 4-15 .

The screenshot shows the 'Install Application Assistant' dialog box with the 'Choose targeting style' panel. At the top, there are four buttons: 'Back', 'Next', 'Finish', and 'Cancel'. Below the buttons, the text reads: 'Choose targeting style' and 'Targets are the servers, clusters, and virtual hosts on which this deployment will run. There are several ways you can target an application.' There are three radio button options: 'Install this deployment as an application' (selected), 'Install this deployment as a library', and 'Install this deployment as an application, but target the components individually'. Below the third option, there is a note: 'Useful when one or more of the modules or components must have targets unique from the rest of the application.' At the bottom, there are four buttons: 'Back', 'Next', 'Finish', and 'Cancel'.

Figure 4-15: Choose Targeting Style

10. Within the Install Application Assistant in the right column of the console, WebLogic will now display the panel Select deployment targets, where the Deployment Server will be selected as the target in the next step. For reference, see Figure 4-16.

The screenshot shows the 'Install Application Assistant' dialog box with the 'Select deployment targets' panel. At the top, there are four buttons: 'Back', 'Next', 'Finish', and 'Cancel'. Below the buttons, the text reads: 'Select deployment targets' and 'Select the servers and/or clusters to which you want to deploy this application. (You can reconfigure deployment targets later).' Below this, it says 'Available targets for PREv05 :'. There is a table with two rows: 'AdminServer' and 'LocalPharmacyServer'. The 'LocalPharmacyServer' row has a checked checkbox. At the bottom, there are four buttons: 'Back', 'Next', 'Finish', and 'Cancel'.

Figure 4-16: Select Deployment Targets

NOTE: Select part of cluster and select mocha1, 2, 3,

11. For the Target, select the Deployment Server. For example, LocalPharmacyServer.

12. Click Next.
13. Within the Install Application Assistant, WebLogic will now display the panel Optional Settings in the right column of the console, where the name of the deployment and the copy behavior are chosen. For reference, see Figure 4-17 .

Install Application Assistant

Back Next Finish Cancel

Optional Settings

You can modify these settings or accept the defaults

General

What do you want to name this deployment?

Name: MOCHA

Security

What security model do you want to use with this application?

☒ DD Only: Use only roles and policies that are defined in the deployment descriptors.

☐ Custom Roles: Use roles that are defined in the Administration Console; use policies that are defined in the deployment descriptor.

☐ Custom Roles and Policies: Use only roles and policies that are defined in the Administration Console.

☐ Advanced: Use a custom model that you have configured on the realm's configuration page.

Source accessibility

How should the source files be made accessible?

☒ Use the defaults defined by the deployment's targets

☐ Copy this application onto every target for me

Recommended selection.

☐ Copy this application onto every target for me

During deployment, the files will be copied automatically to the managed servers to which the application is targeted.

☐ I will make the deployment accessible from the following location

Location: /opt/boa/domains/PRE/servers/AdminServer/upload/MOC

Provide the location from where all targets will access this application's files. This is often a shared directory. You must ensure the application files exist in this location and that each target can reach the location.

Back Next Finish Cancel

Figure 4-17: Optional Settings

14. Enter the Name for the deployment. For example, MOCHA.
15. Verify that the following default option for Security is selected:
DD Only: Use only roles and policies that are defined in the deployment descriptors.

16. Verify that the following default option for Source accessibility is selected:
Use the defaults defined by the deployment's targets.
17. Click Next.
18. Within the Install Application Assistant in the right column of the console WebLogic will now display the panel Review your choices and click Finish, which summarizes the steps completed above. For reference, see Figure 4-18.(version # will depend on the current MOCHA Server version #. E.g., for MOCHA Server 2.0 -> **mocha-server-2.0.00.009.ear**).

Install Application Assistant

Back Next Finish Cancel

Review your choices and click Finish

Click Finish to complete the deployment. This may take a few moments to complete.

— Additional configuration —

In order to work successfully, this application may require additional configuration. Do you want to review this application's configuration after completing this assistant?

☒ Yes, take me to the deployment's configuration screen.

☐ No, I will review the configuration later.

— Summary —

Deployment: /opt/bea/domains/PRE/servers/AdminServer/upload/MOCHA.v1.0.00.001.ear

Name: MOCHA

Staging mode: Use the defaults defined by the chosen targets

Security Model: DDOnly: Use only roles and policies that are defined in the deployment descriptors.

[Customize this table](#)

Target Summary

Components	Targets
MOCHA.v1.0.00.001.ear	LocalPharmacyServer

Back Next Finish Cancel

Figure 4-18: Review Your Choices and Click Finish

19. Verify that the values match those entered in Steps 6 through 18 and click Finish.

20. WebLogic will now display the panel Settings for MOCHA, in the right column of the console, where the values previously entered are available as well as a setting to change the deployment order. For reference, see Figure 4-19.

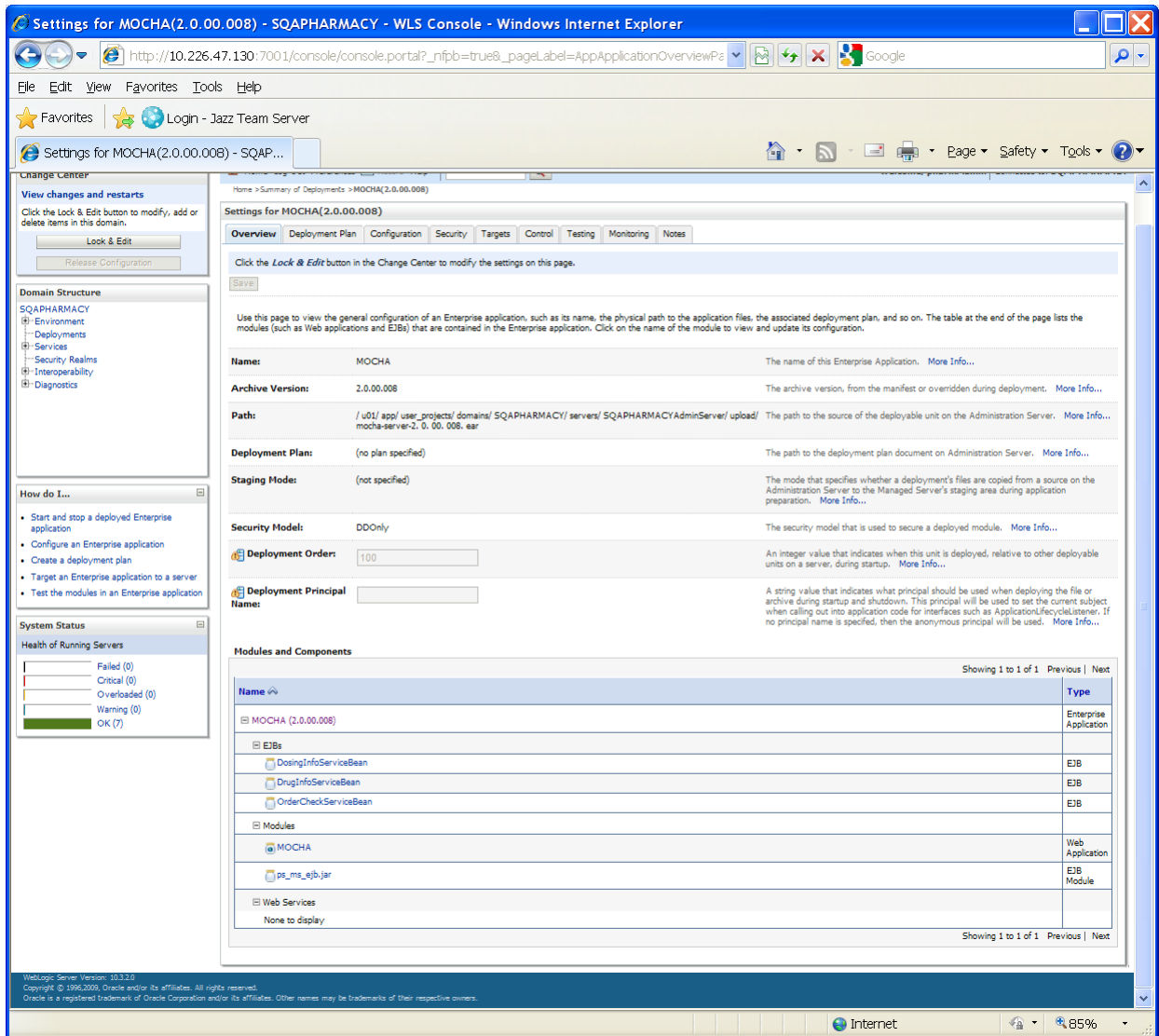


Figure 4-19: Settings for MOCHA

21. Leave all the values as defaulted by WebLogic and click Save.

22. Within the Change Center panel in the left column of the WebLogic console, click **Activate Changes**. For reference, see Figure 4-20.

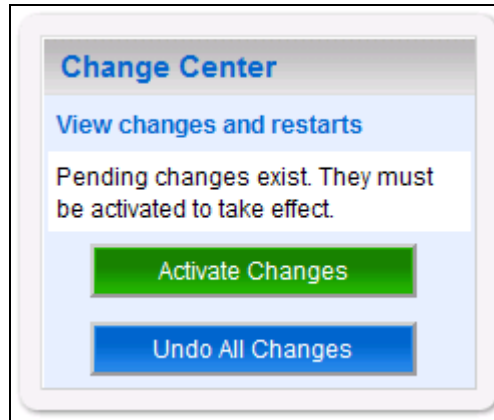


Figure 4-20: Activate Changes

23. Within the Domain Structure panel in the left column of the WebLogic console, click the **PRE > Deployments** node. For reference, see Figure 4-21.

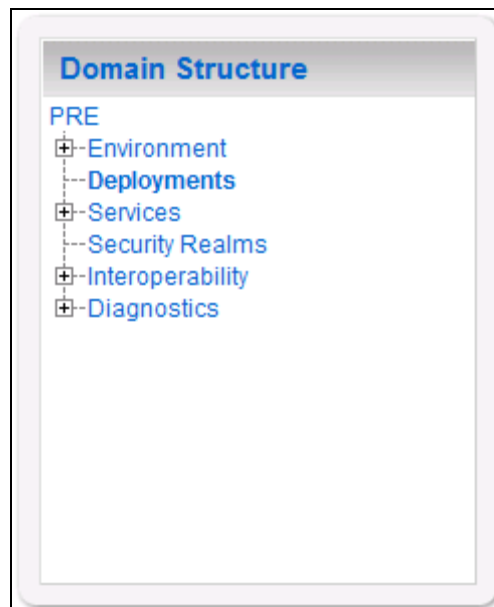


Figure 4-21: Domain Structure

24. WebLogic will now display the panel **Summary of Deployments** in the right column of the console, where all deployments for the WebLogic domain are listed. For reference, see Figure 4-22.

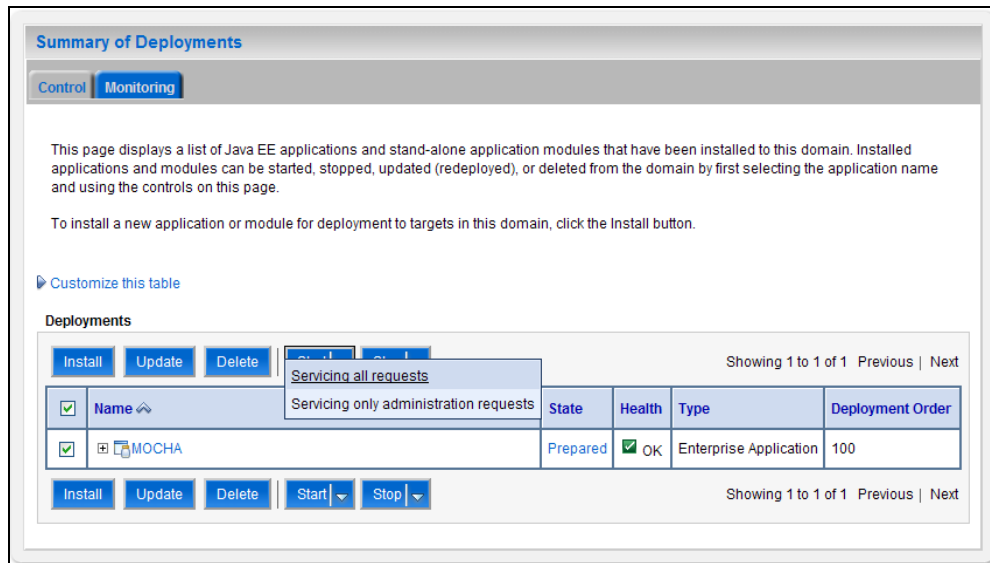


Figure 4-22: Summary of Deployments

25. Select the previously deployed MOCHA deployment, click **Start**, and then select **Servicing all requests** from the drop-down list box.
26. WebLogic will now display the panel **Start Application Assistant** in the right column of the console for confirmation to start servicing requests. For reference, see Figure 4-23.

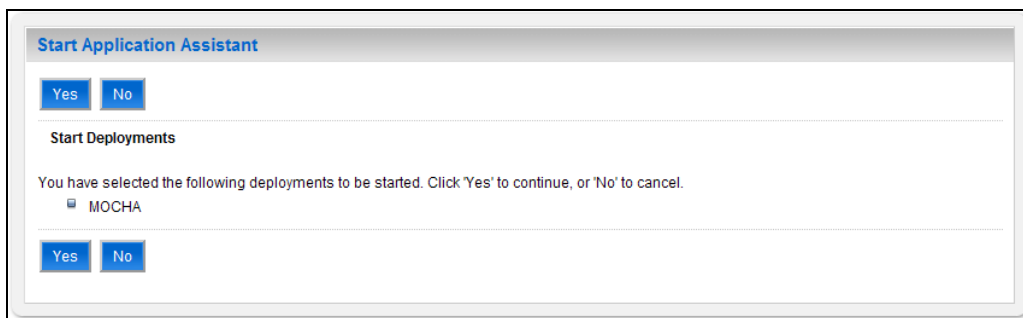


Figure 4-23: Start Application Assistant

27. Click **Yes** in the **Start Application Assistant** panel in the right column of the WebLogic console.

28. WebLogic now returns to the Summary of Deployments panel in the right column of the console. For reference, see Figure 4-24.

Summary of Deployments

Control | Monitoring

This page displays a list of Java EE applications and stand-alone application modules that have been installed to this domain. Installed applications and modules can be started, stopped, updated (redeployed), or deleted from the domain by first selecting the application name and using the controls on this page.

To install a new application or module for deployment to targets in this domain, click the Install button.

[Customize this table](#)

Deployments

Install | Update | Delete | Start ▾ | Stop ▾ | Showing 1 to 2 of 2 | Previous | Next

	Name ↕	State	Health	Type	Deployment Order
	datap-local (2.0.00.001CM)	Active	✓ OK	Enterprise Application	100
	MOCHA (2.0.00.009)	Active	✓ OK	Enterprise Application	100

Install | Update | Delete | Start ▾ | Stop ▾ | Showing 1 to 2 of 2 | Previous | Next

Figure 4-24: Summary of Deployments – MOCHA Deployment Active

29. Verify that the State of the MOCHA deployment is Active.