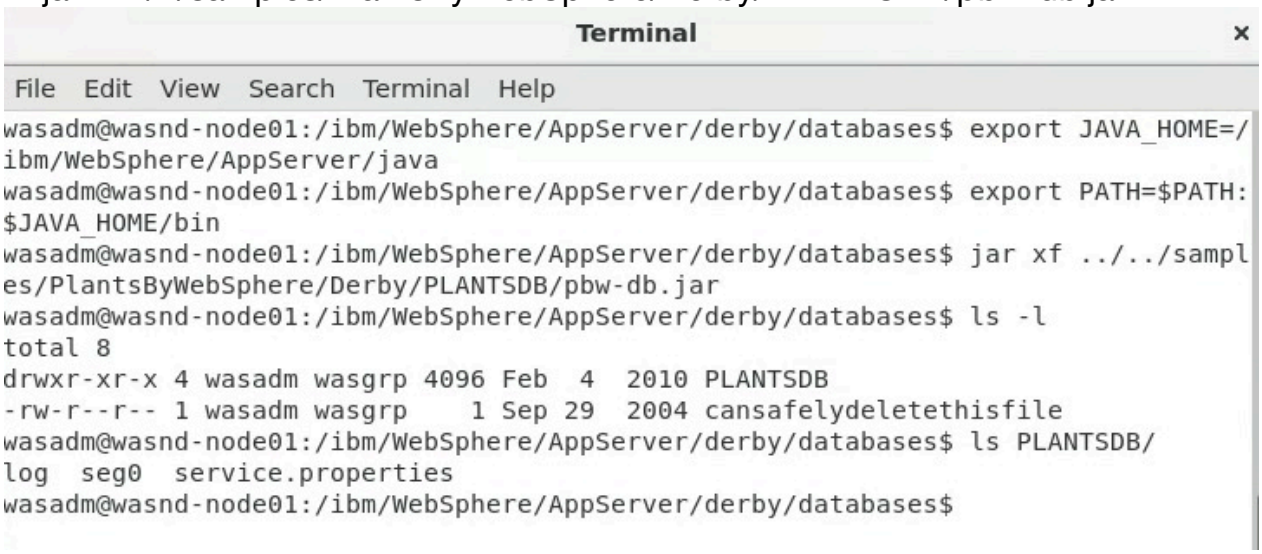
Exercise 6 – Installing an Application

At the end of this exercise, you should be able to:• Use the administrative console to install an application• Use a web browser to test the application• Use the drag-and-drop function to deploy an application

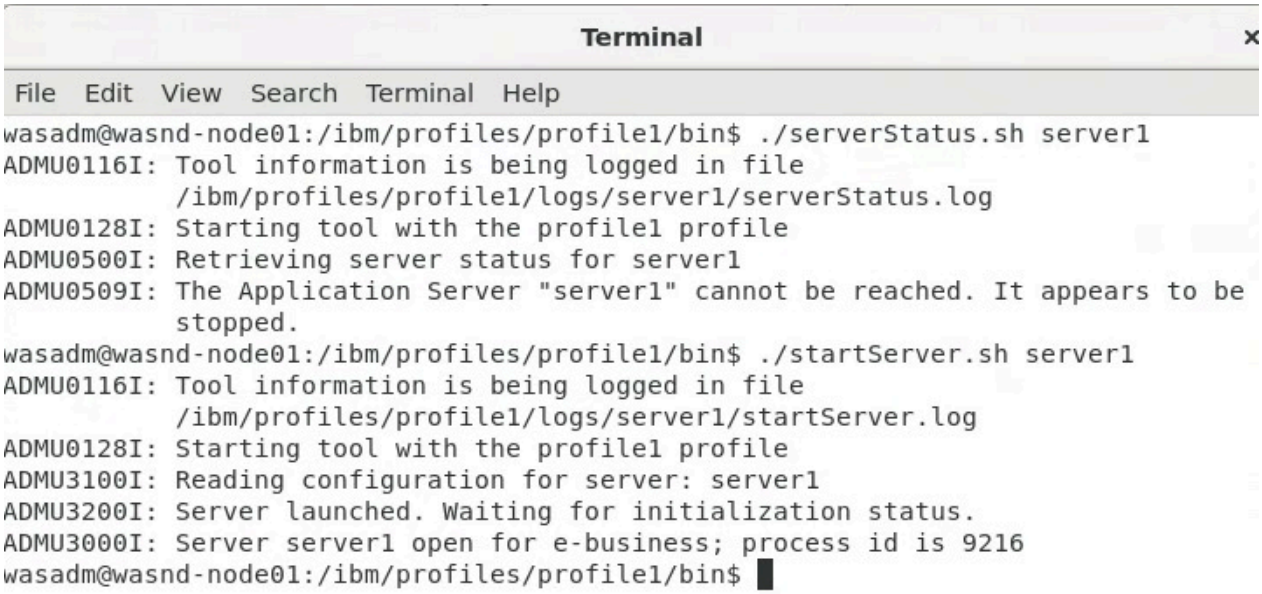
The Plants By WebSphere sample uses a Derby database, which must be setup before running the application. The application assumes the Derby database will be installed in install_root/Derby/databases. Use the following commands to setup the Derby database before installing and running the Plants by WebSphere sample application:

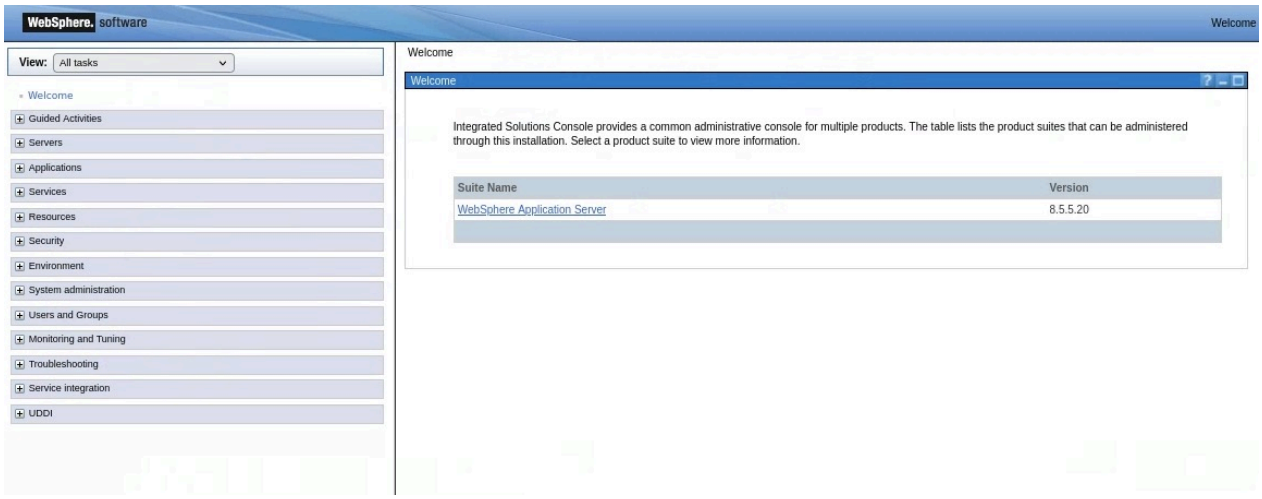
cd install_root/Derby/databases
jar xf ../../samples/PlantsByWebSphere/Derby/PLANTSDB/pbw-db.jar



Section 1: Start the server and the administrative console

Use the WebSphere Application Server administrative console to install the PlantsByWebSphere application. Since the administrative console is an application that is running on the server, the server must be running before the administrative console is started.



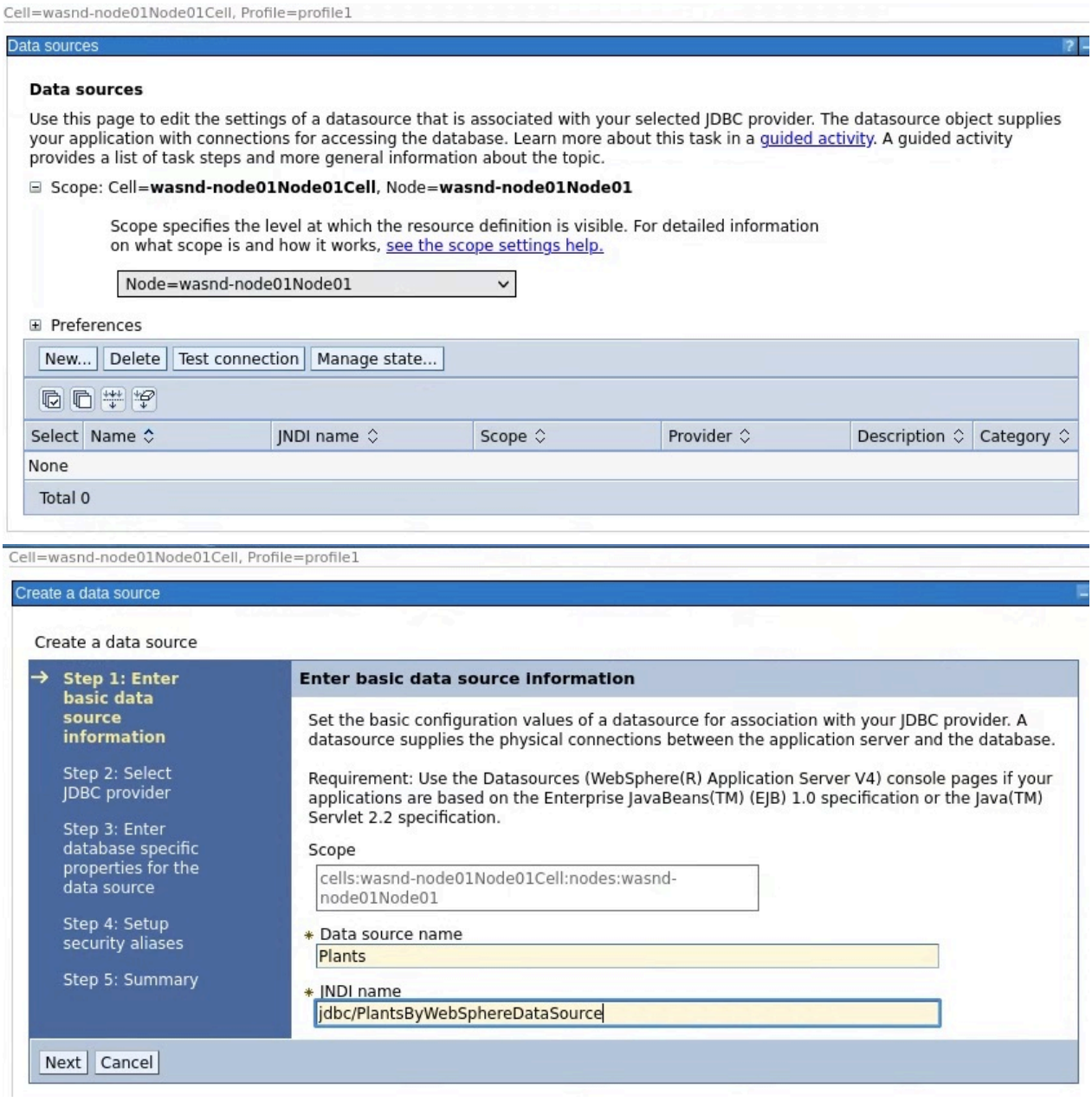


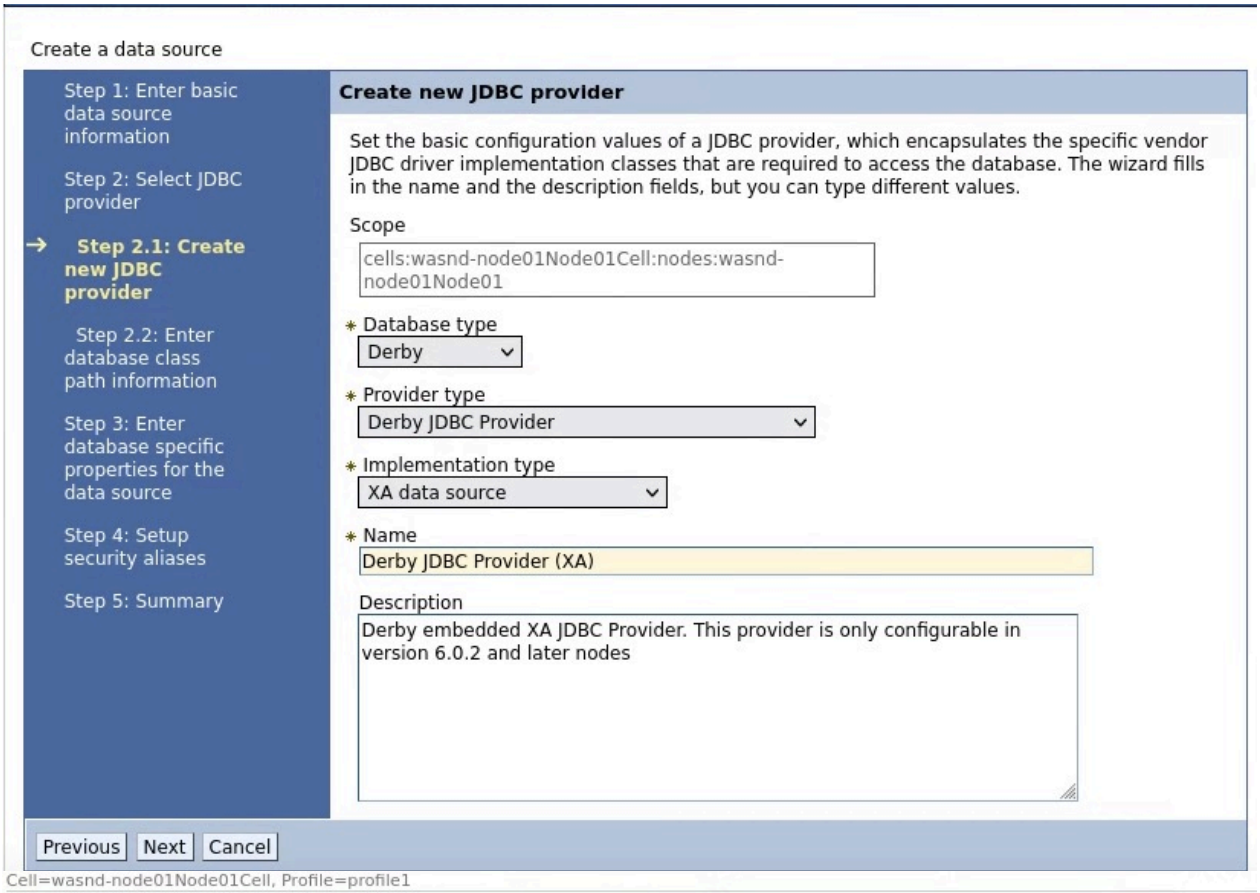
Section 2: Create J2C authentication aliases

Most system resources must be able to authenticate to a registry. Data sources must be able to authenticate to the database server. Here the database is set up to use the local OS user registry.

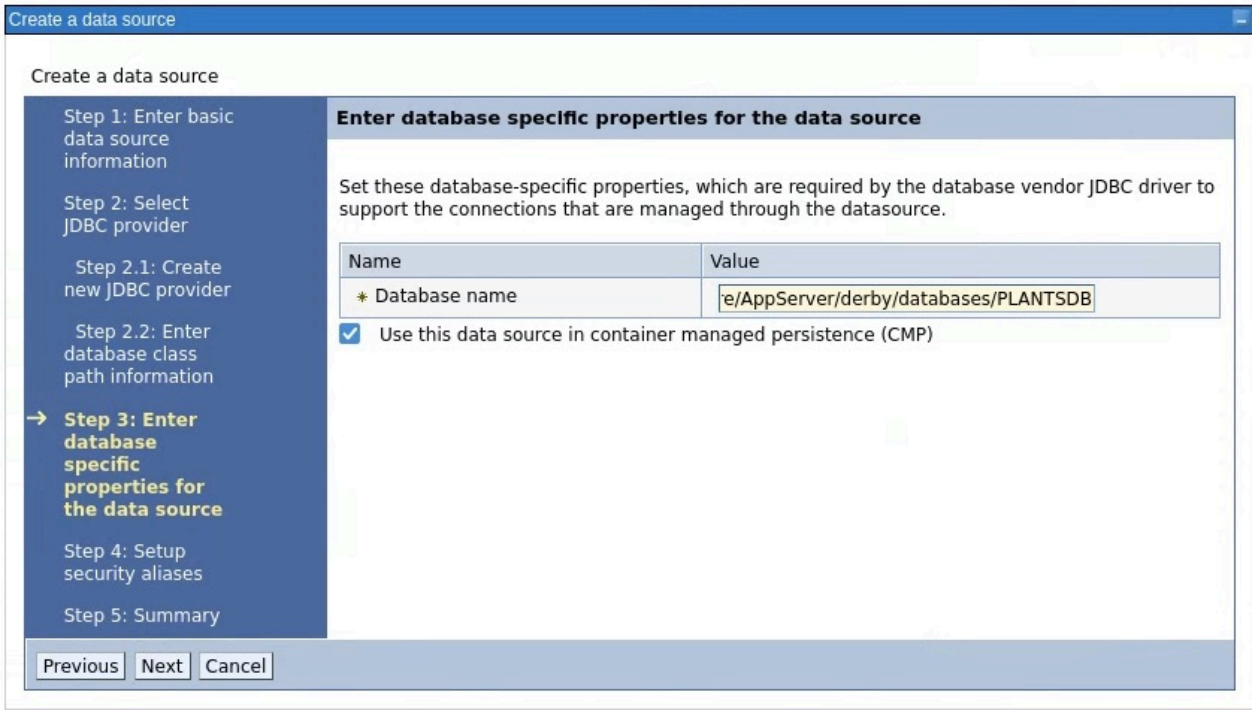
Section 3: Create a JDBC provider and data sources for the application

If any resources that the application uses are not defined in the EAR file, you must define them. You can use the administrative console to define the resources. In this section, you create the data sources that the PlantsByWebSphere application requires. These data sources define how the application accesses the PLANTS database. You also create the JDBC provider under which the data source exists.

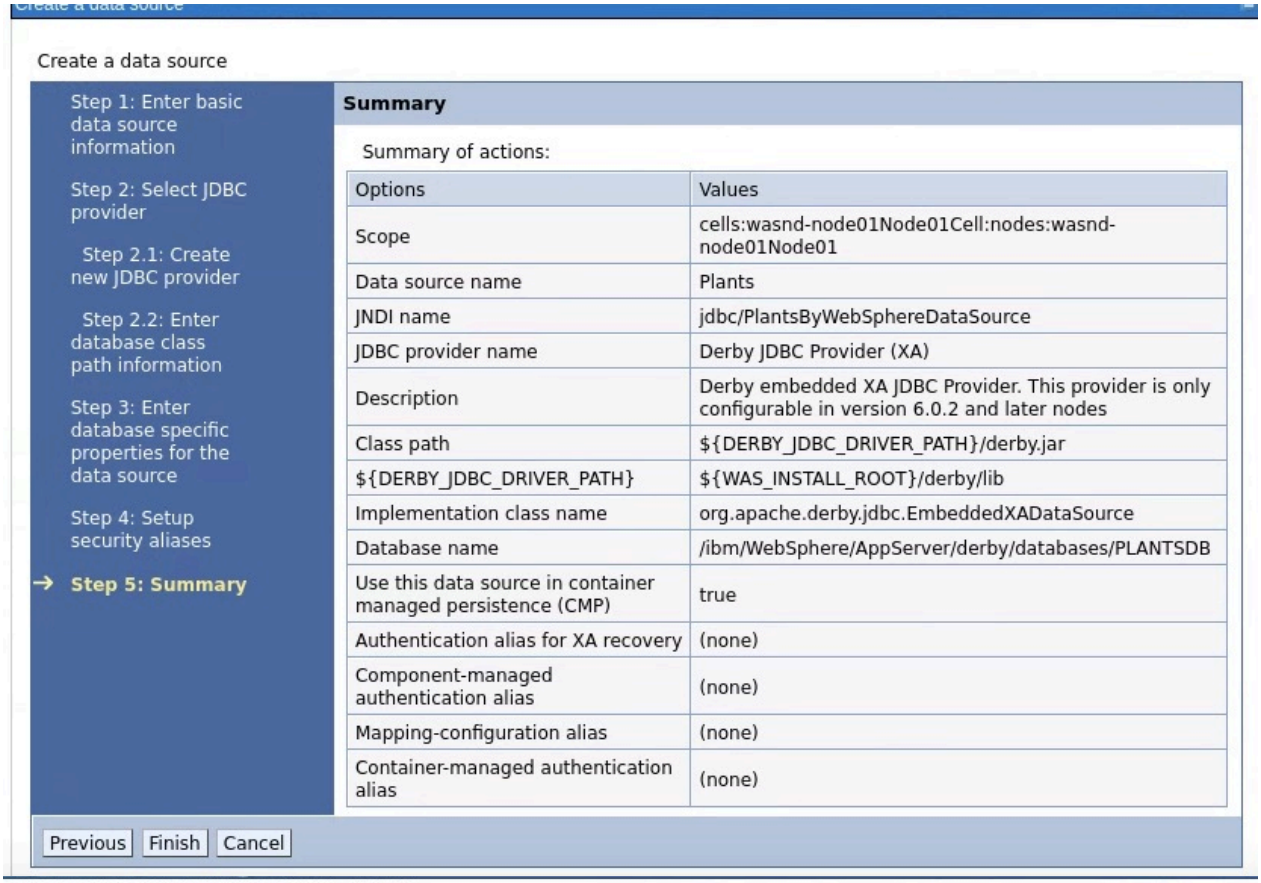

Cell=wasnd-node01Node01Cell, Profile=profile1
Data sources
Data sources
Use this page to edit the settings of a datasource that is associated with your selected JDBC provider. The datasource object supplies your application with connections for accessing the database. Learn more about this task in a guided activity. A guided activity provides a list of task steps and more general information about the topic.
Scope: Cell=wasnd-node01Node01Cell, Node=wasnd-node01Node01
Scope specifies the level at which the resource definition is visible. For detailed information on what scope is and how it works, see the scope settings help.
Node=wasnd-node01Node01
Preferences
New... Delete Test connection Manage state...
Select Name JNDI name Scope Provider Description Category
None
Total 0
Cell=wasnd-node01Node01Cell, Profile=profile1
Create a data source
Create a data source
Step 1: Enter basic data source information
Step 2: Select JDBC provider
Step 3: Enter database specific properties for the data source
Step 4: Setup security aliases
Step 5: Summary
Enter basic data source information
Set the basic configuration values of a datasource for association with your JDBC provider. A datasource supplies the physical connections between the application server and the database.
Requirement: Use the Datasources (WebSphere(R) Application Server V4) console pages if your applications are based on the Enterprise JavaBeans(TM) (EJB) 1.0 specification or the Java(TM) Servlet 2.2 specification.
Scope
cells:wasnd-node01Node01Cell:nodes:wasnd-node01Node01
* Data source name
Plants
* JNDI name
jdbc/PlantsByWebSphereDataSource
Next Cancel

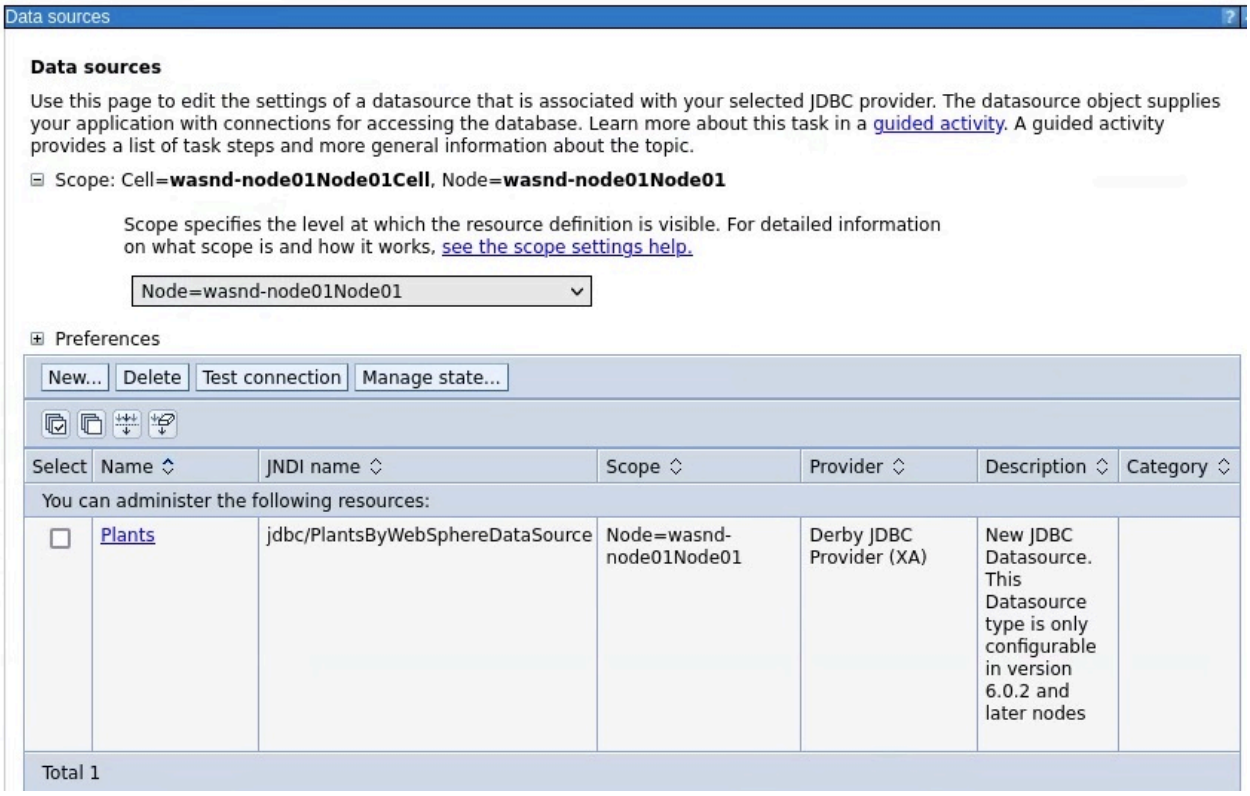


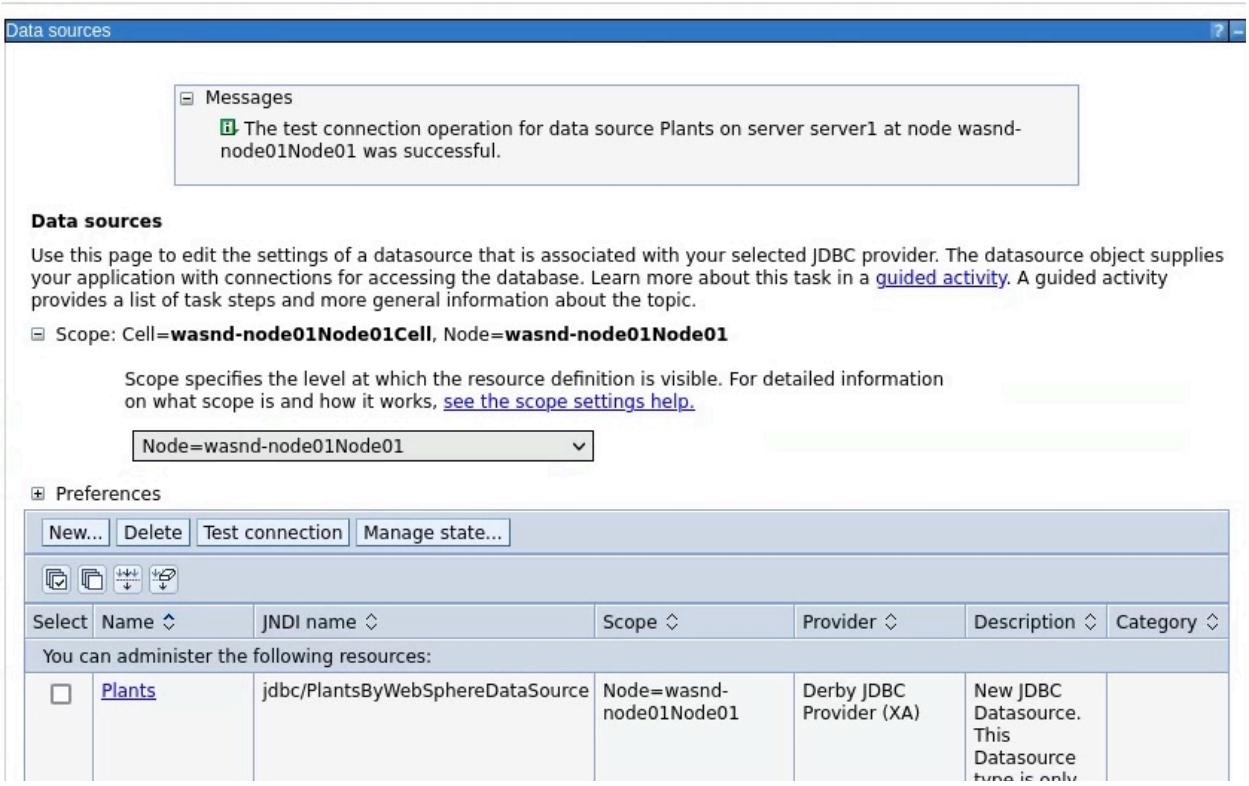
Cell=wasnd-node01Node01Cell, Profile=profile1



The **Component-managed authentication alias** involves creating a mapping from an alias name to the user name and password. This alias name is then specified administratively on the connection factory or data source. As the alias can be resolved in the application server only, the alias restricts authenticated access to applications that are running in the application server.
The **Container-managed authentication alias** works in much the same way as the component-managed alias, but the connection factory or data source must be looked up by using a resource-reference that specifies a resource-auth of container. As a consequence, for an application to retrieve the authenticated resource, the administrator must explicitly bind the resource-reference to the resource on deployment of the application.


Create a data source
Step 1: Enter basic data source information
Step 2: Select JDBC provider
Step 2.1: Create new JDBC provider
Step 2.2: Enter database class path information
Step 3: Enter database specific properties for the data source
Step 4: Setup security aliases
Step 5: Summary
Summary
Summary of actions:
Options
Values
Scope
cells:wasnd-node01Node01Cell:nodes:wasnd-node01Node01
Data source name
Plants
JNDI name
jdbc/PlantsByWebSphereDataSource
JDBC provider name
Derby JDBC Provider (XA)
Description
Derby embedded XA JDBC Provider. This provider is only configurable in version 6.0.2 and later nodes
Class path
${DERBY_JDBC_DRIVER_PATH}/derby.jar
${DERBY_JDBC_DRIVER_PATH}
${WAS_INSTALL_ROOT}/derby/lib
Implementation class name
org.apache.derby.jdbc.EmbeddedXADataSource
Database name
/ibm/WebSphere/AppServer/derby/databases/PLANTSDB
Use this data source in container managed persistence (CMP)
true
Authentication alias for XA recovery
(none)
Component-managed authentication alias
(none)
Mapping-configuration alias
(none)
Container-managed authentication alias
(none)
Previous
Finish
Cancel


Data sources
Data sources
Use this page to edit the settings of a datasource that is associated with your selected JDBC provider. The datasource object supplies your application with connections for accessing the database. Learn more about this task in a guided activity. A guided activity provides a list of task steps and more general information about the topic.
Scope: Cell=wasnd-node01Node01Cell, Node=wasnd-node01Node01
Scope specifies the level at which the resource definition is visible. For detailed information on what scope is and how it works, see the scope settings help.
Node=wasnd-node01Node01
Preferences
New...
Delete
Test connection
Manage state...
Select
Name
JNDI name
Scope
Provider
Description
Category
You can administer the following resources:
Plants
jdbc/PlantsByWebSphereDataSource
Node=wasnd-node01Node01
Derby JDBC Provider (XA)
New JDBC Datasource. This Datasource type is only configurable in version 6.0.2 and later nodes
Total 1



Section 4: Install the PlantsByWebSphere enterprise application

The EAR file that you are installing can be on either the client computer or the server computer. The client computer runs the browser, and the server computer is the computer to which the client is connected. If you specify an EAR file on the client computer, select **Local file system**. Then, the administrative console uploads the EAR file to the computer on which the console is running and proceeds with application installation.

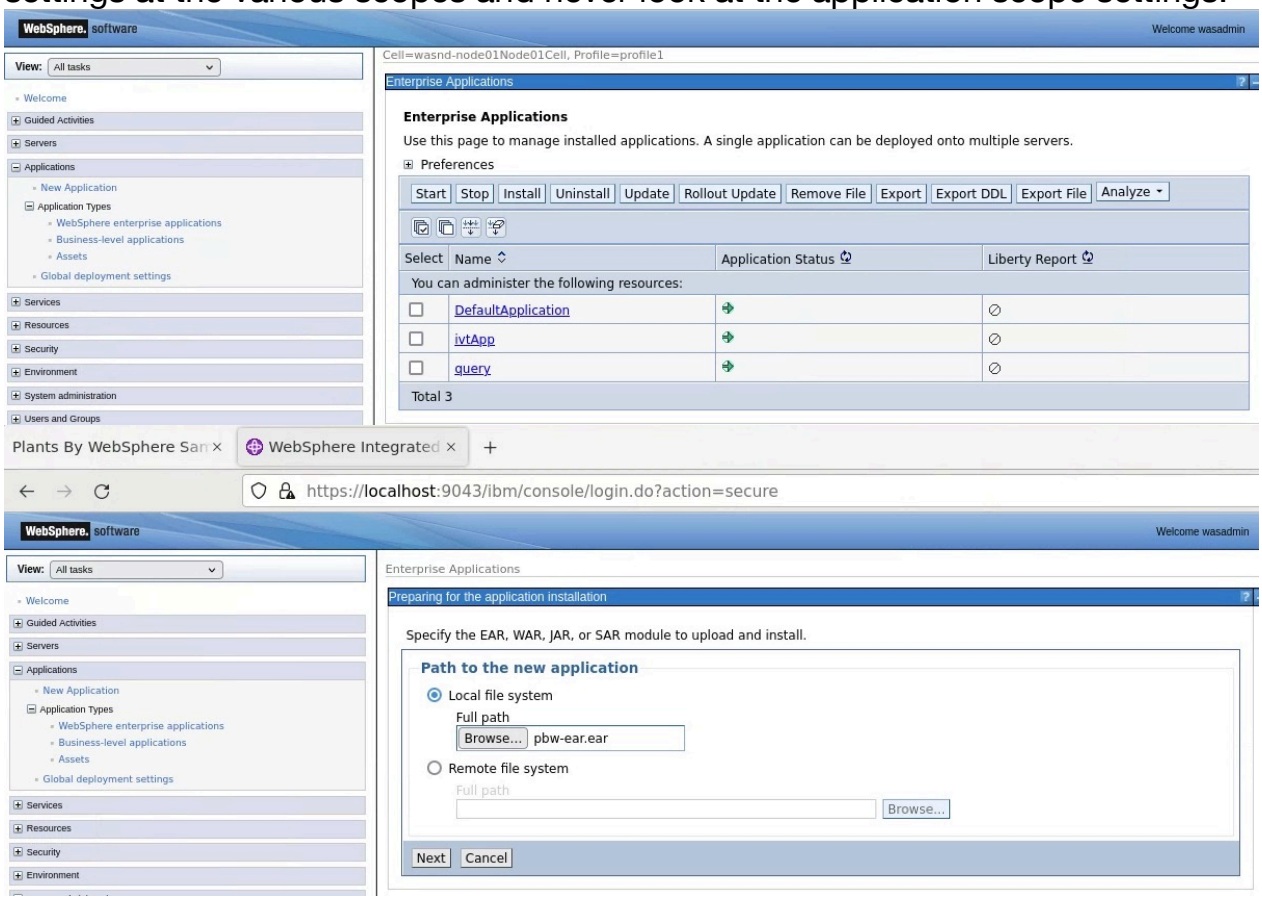
If you are using a browser on a remote location, select **Remote file system** and browse through the file system where the application server is running.

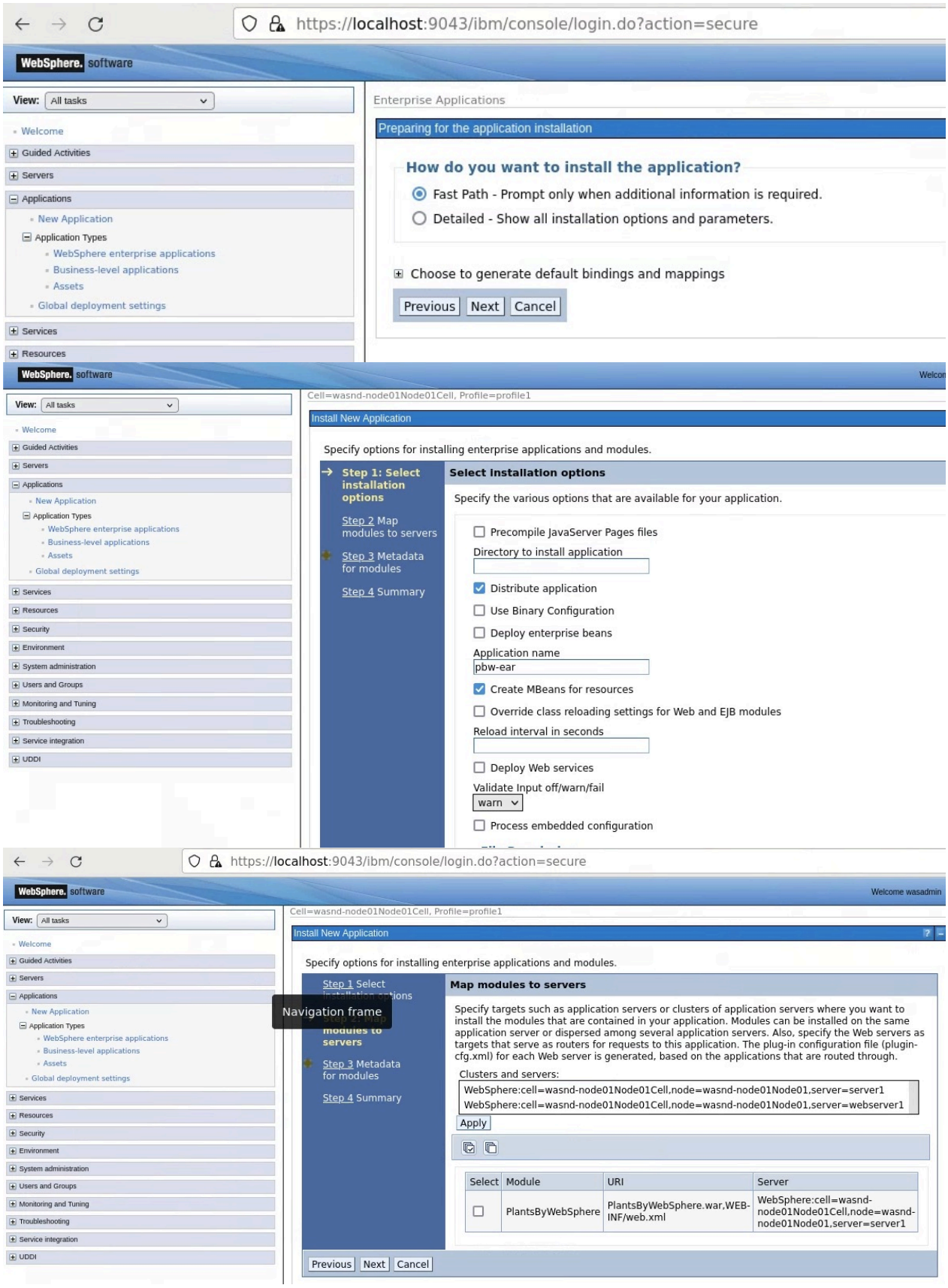
The **Fast Path** method limits the number of options that are shown, which simplifies the installation process. The **Detailed** method shows all the installation options, including the options with default values assigned.

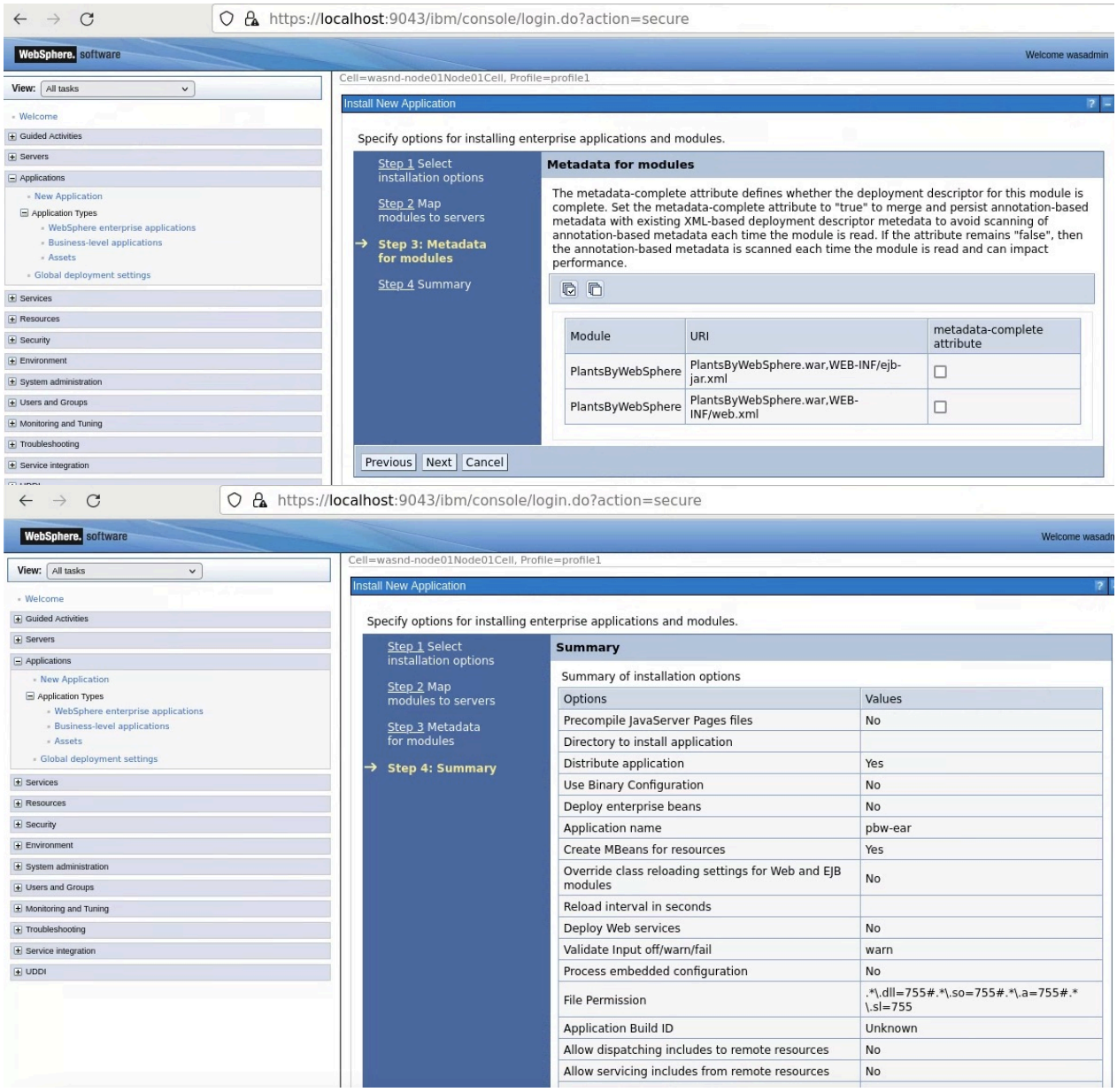
If an EAR file is enhanced, the **Process embedded configuration** check box is selected by default. To ignore the application-scoped resources, the **Process embedded configuration** option must not be selected.

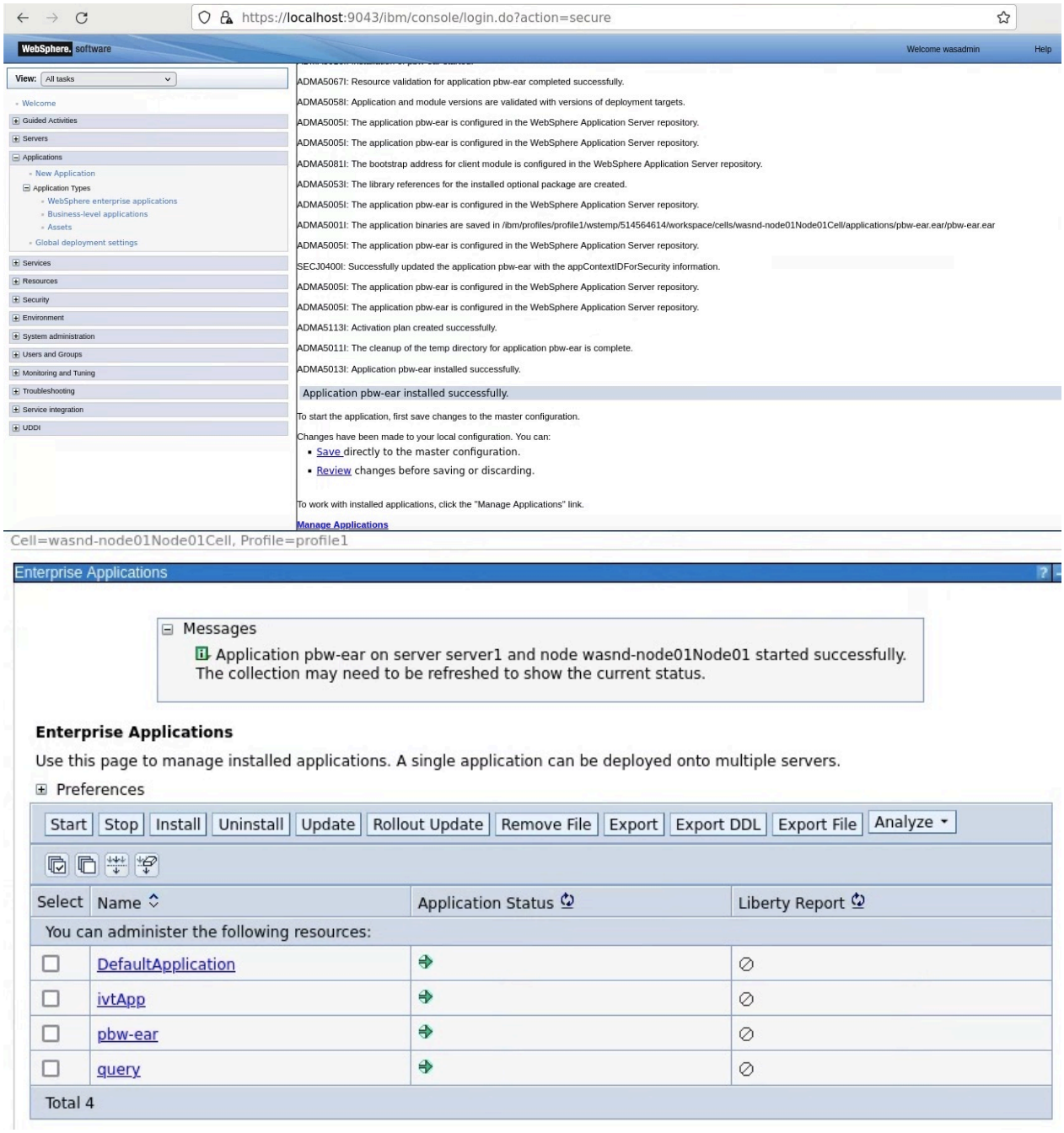
If this enhanced EAR file is installed with the **Process embedded configuration** checked, then various properties are set at the application scope level. Caution must be used when working with application scoped resources because they are not as clearly visible as resources set at higher level scopes.

• Application scoped resources are tied to a specific application. Enhanced EAR files include application resources.
• Settings that are made at the application scope level take precedence over the same settings that are set at a higher level scope, such as the cell or node levels.
• Application scoped resources are not available from scope selection menus.
It is problematic if an administrator is trying to troubleshoot a problem and is not aware that an application is enhanced. A setting at the application scope can cause a problem with the application. The administrator might review all the settings at the various scopes and never look at the application scope settings.




https://localhost:9043/ibm/console/login.do?action=secure
WebSphere. software
View: All tasks
Welcome
Guided Activities
Servers
Applications
New Application
Application Types
WebSphere enterprise applications
Business-level applications
Assets
Global deployment settings
Services
Resources
Security
Environment
System administration
Users and Groups
Monitoring and Tuning
Troubleshooting
Service integration
UDDI
Enterprise Applications
Preparing for the application installation
How do you want to install the application?
Fast Path - Prompt only when additional information is required.
Detailed - Show all installation options and parameters.
Choose to generate default bindings and mappings
Previous
Next
Cancel
Cell=wasnd-node01Node01Cell, Profile=profile1
Install New Application
Specify options for installing enterprise applications and modules.
Step 1: Select installation options
Step 2 Map modules to servers
Step 3 Metadata for modules
Step 4 Summary
Select installation options
Specify the various options that are available for your application.
Precompile JavaServer Pages files
Directory to install application
Distribute application
Use Binary Configuration
Deploy enterprise beans
Application name
pbw-ear
Create MBeans for resources
Override class reloading settings for Web and EJB modules
Reload interval in seconds
Deploy Web services
Validate Input off/warn/fail
warn
Process embedded configuration
Welcome wasadmin
Navigation frame
Map modules to servers
Specify targets such as application servers or clusters of application servers where you want to install the modules that are contained in your application. Modules can be installed on the same application server or dispersed among several application servers. Also, specify the Web servers as targets that serve as routers for requests to this application. The plug-in configuration file (plugin-cfg.xml) for each Web server is generated, based on the applications that are routed through.
Clusters and servers:
WebSphere:cell=wasnd-node01Node01Cell,node=wasnd-node01Node01,server=server1
WebSphere:cell=wasnd-node01Node01Cell,node=wasnd-node01Node01,server=webserver1
Apply
Select
Module
URI
Server
PlantsByWebSphere
PlantsByWebSphere.war,WEB-INF/web.xml
WebSphere:cell=wasnd-node01Node01Cell,node=wasnd-node01Node01,server=server1


https://localhost:9043/ibm/console/login.do?action=secure
WebSphere. software
Welcome wasadmin
View: All tasks
Welcome
Guided Activities
Servers
Applications
New Application
Application Types
WebSphere enterprise applications
Business-level applications
Assets
Global deployment settings
Services
Resources
Security
Environment
System administration
Users and Groups
Monitoring and Tuning
Troubleshooting
Service integration
Cell=wasnd-node01Node01Cell, Profile=profile1
Install New Application
Specify options for installing enterprise applications and modules.
Step 1 Select installation options
Step 2 Map modules to servers
Step 3: Metadata for modules
Step 4 Summary
Metadata for modules
The metadata-complete attribute defines whether the deployment descriptor for this module is complete. Set the metadata-complete attribute to "true" to merge and persist annotation-based metadata with existing XML-based deployment descriptor metedata to avoid scanning of annotation-based metadata each time the module is read. If the attribute remains "false", then the annotation-based metadata is scanned each time the module is read and can impact performance.
Module
URI
metadata-complete attribute
PlantsByWebSphere
PlantsByWebSphere.war,WEB-INF/ejb-jar.xml
PlantsByWebSphere
PlantsByWebSphere.war,WEB-INF/web.xml
Previous
Next
Cancel
https://localhost:9043/ibm/console/login.do?action=secure
WebSphere. software
Welcome wasadm
View: All tasks
Welcome
Guided Activities
Servers
Applications
New Application
Application Types
WebSphere enterprise applications
Business-level applications
Assets
Global deployment settings
Services
Resources
Security
Environment
System administration
Users and Groups
Monitoring and Tuning
Troubleshooting
Service integration
UDDI
Cell=wasnd-node01Node01Cell, Profile=profile1
Install New Application
Specify options for installing enterprise applications and modules.
Step 1 Select installation options
Step 2 Map modules to servers
Step 3 Metadata for modules
Step 4: Summary
Summary
Summary of installation options
Options
Values
Precompile JavaServer Pages files
No
Directory to install application
Distribute application
Yes
Use Binary Configuration
No
Deploy enterprise beans
No
Application name
pbw-ear
Create MBeans for resources
Yes
Override class reloading settings for Web and EJB modules
No
Reload interval in seconds
Deploy Web services
No
Validate Input off/warn/fail
warn
Process embedded configuration
No
File Permission
.*\.dll=755#.*\.so=755#.*\.a=755#.*\.sl=755
Application Build ID
Unknown
Allow dispatching includes to remote resources
No
Allow servicing includes from remote resources
No



Section 5: Test the enterprise application

Test the application by accessing it with the WebSphere Application Server HTTP transport.

Not Secure | 34.141.79.132/PlantsByWebSphere/promo.jsf

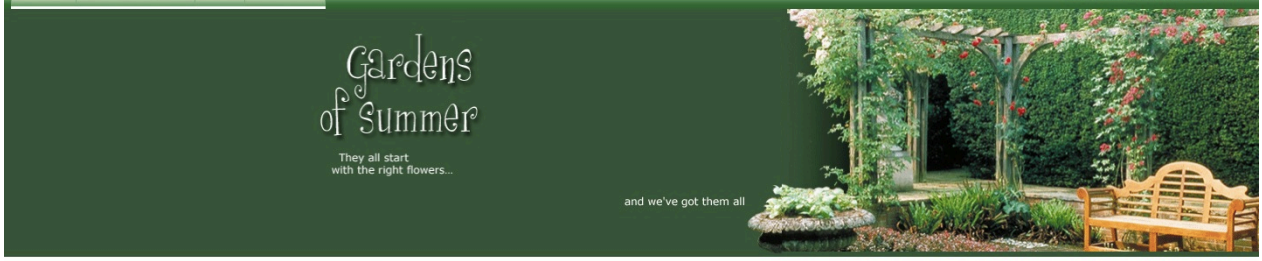
Error

PLANTS BY WEBSPHERE

Your shopping cart is currently empty

Flowers | Fruits & Vegetables | Trees | Accessories

HOME : SHOPPING CART : LOGIN : HELP



Tips

Preserve extra grass seed by keeping it dry. Tape boxes and bags closed, or seal them into plastic bags. Be sure to remove extra air from the bags. Store all seed in a cool, dry area such as a garage or basement.

Specials


Bonsai Tree
$30.00 each


Red Delicious Strawberries
$3.50 (50 seeds)


Tulips
$17.00 (10 bulbs)

Powered by IBM WebSphere e-business software

Flowers : Fruits & Vegetables : Trees : Accessories : Home : Shopping Cart : My Account : Login : Help

PLANTS BY WEBSPHERE

Flowers | Fruits & Vegetables | Trees | Accessories

Home

Login or Register

If you are a returning customer and previously set up an account, please enter your e-mail address and password below.

E-mail address:

Password:

Sign in

If you are a *New* customer you can register for your own account here.

PLANTS BY WEBSPHERE

Flowers | Fruits & Vegetables | Trees | Accessories

Home >Sign in

Registration

Enter the information below to set up your account. This information will not be shared without your permission. With your permission we will only share your name and email address with our trusted business partners.

Required fields are denoted with a red asterisk (*).

Login Information

E-mail address	*	themulker@gmail.com
Password	*	••••••
Verify Password	*	••••••

Contact Information

First Name	*	Murat
Last Name	*	Ülker
Address Line 1	*	Çekmeköy
Address Line 2		Taşdelen
City	*	Çekmeköy
State	*	İstanbul
ZIP Code	*	34788
Phone (daytime)	*	5325549947

Register

PLANTS BY WEBSPHERE

Flowers | Fruits & Vegetables | Trees | Accessories

Home >Sign in

Registration

Enter the information below to set up your account. This information will not be shared without your permission. With your permission we will only share your name and email address with our trusted business partners.

Required fields are denoted with a red asterisk (*).

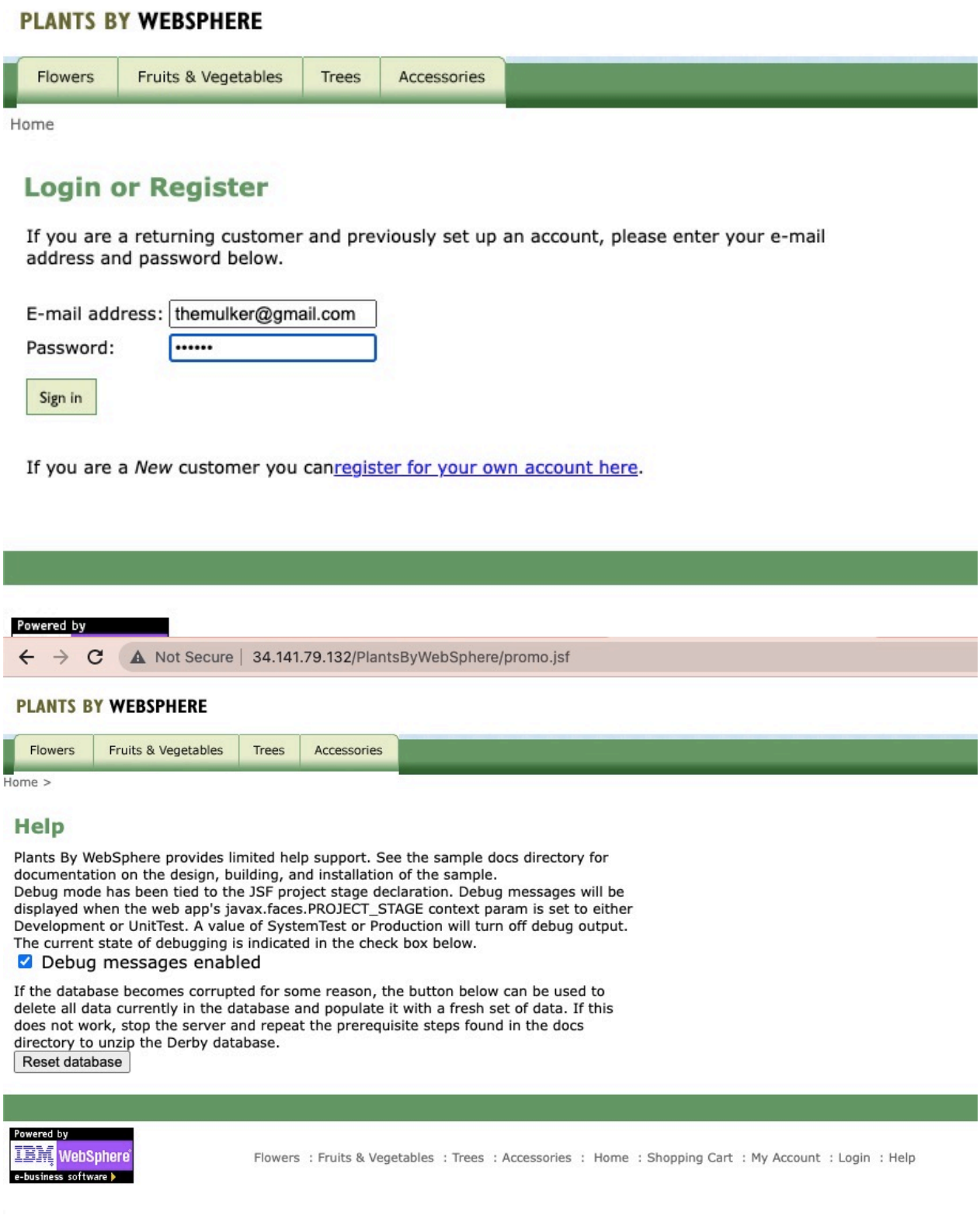
Login Information

E-mail address	*	themulker@gmail.com
Password	*	
Verify Password	*	

Contact Information

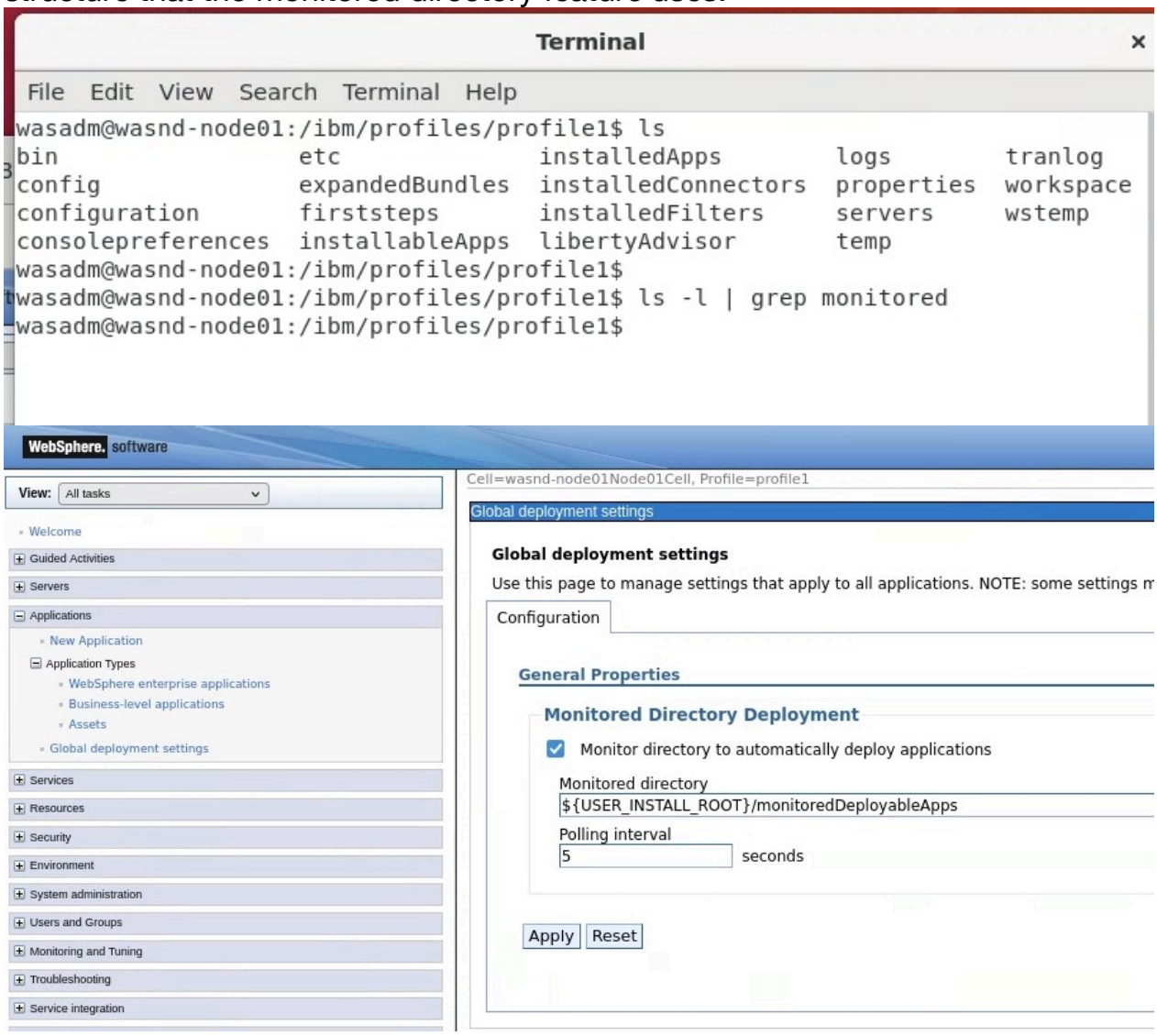
First Name	*	Murat
Last Name	*	Ülker
Address Line 1	*	Çekmeköy
Address Line 2		Taşdelen
City	*	Çekmeköy
State	*	İstanbul
ZIP Code	*	34788
Phone (daytime)	*	532-554-9947 **register:phone: Phone number does not match xxx-xxx-xxxx.**

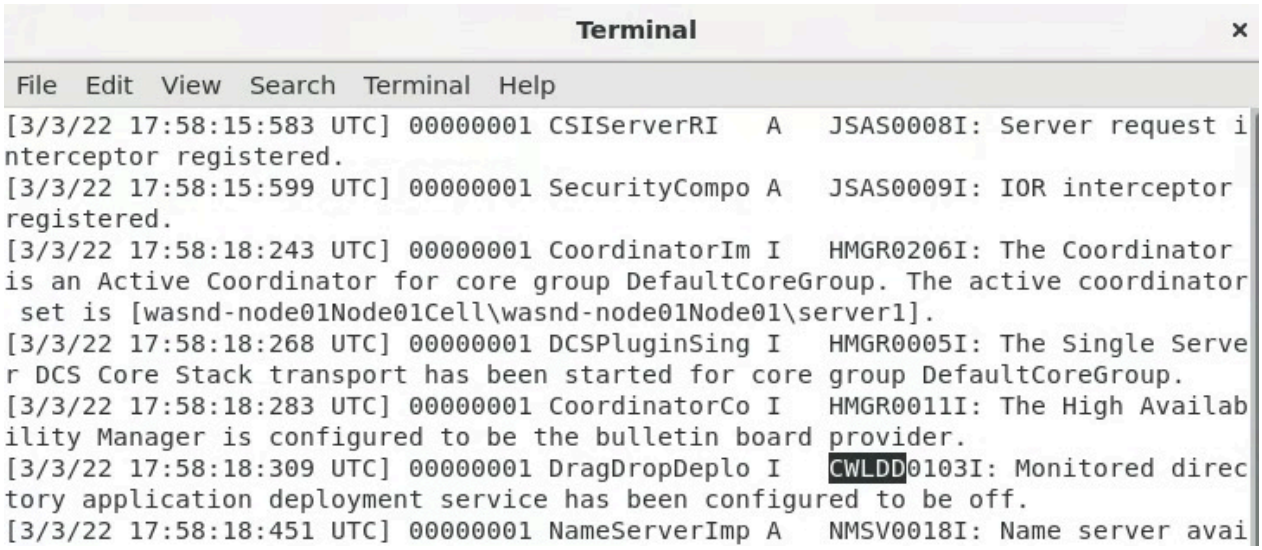
Register

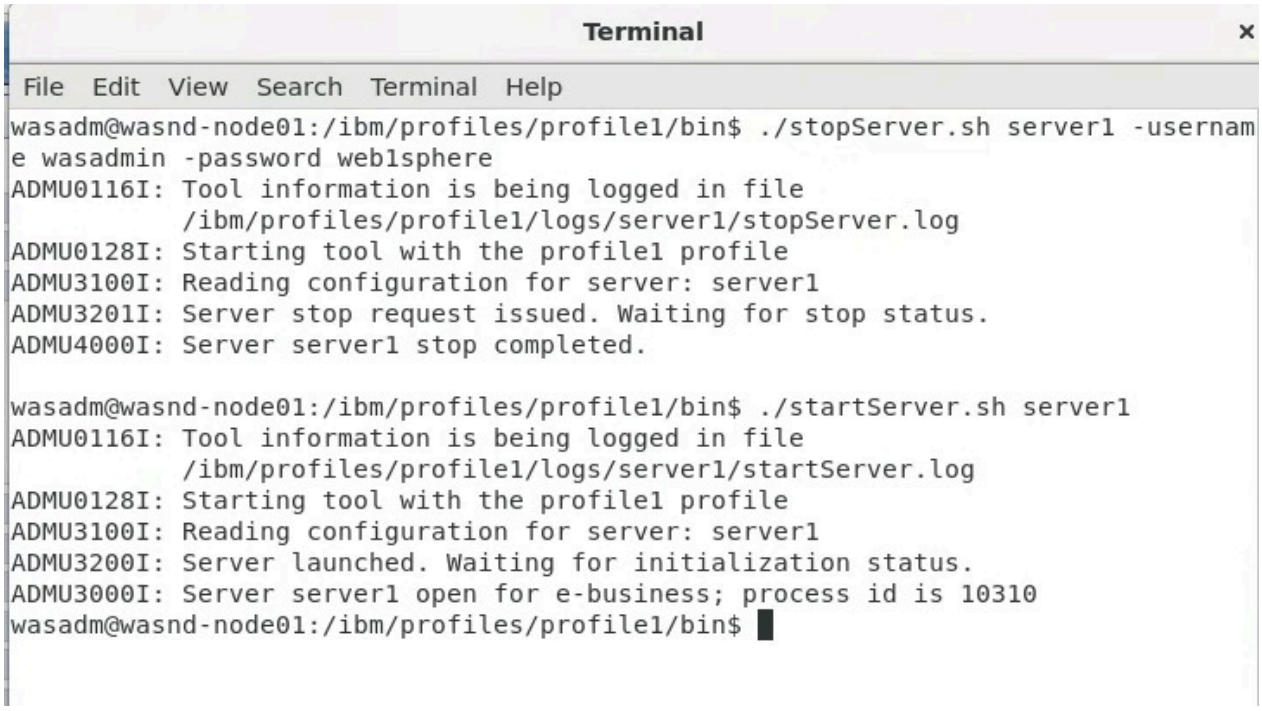


Section 6: Use a monitored directory to deploy an enterprise application

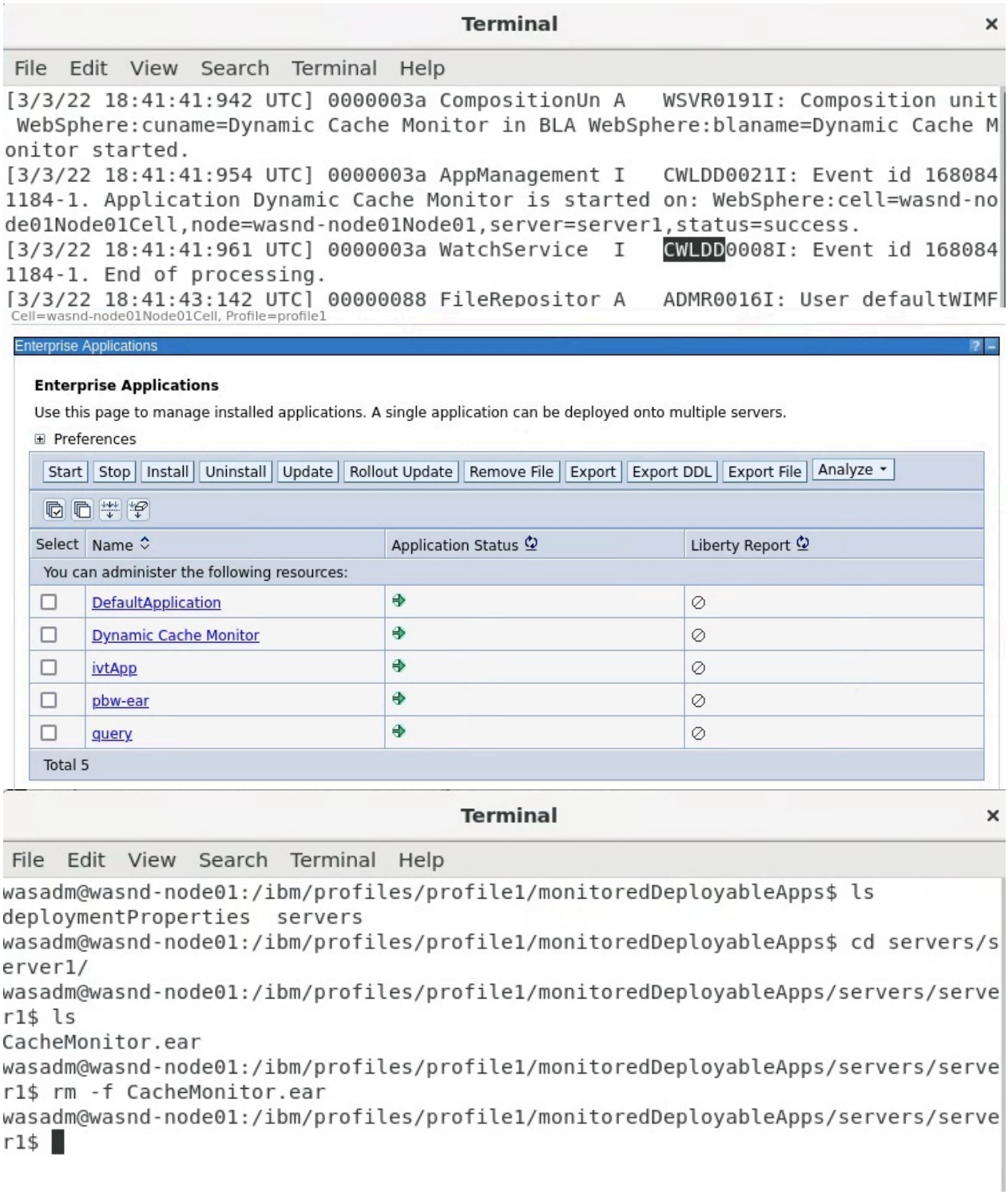
In this section, the new monitored directory feature is used to deploy an EAR file. This feature allows the deployment of an application by dragging, or copying, an EAR file into a monitored directory. The application is automatically installed and started.
The monitored directory feature is not enabled by default. The first step is to use the administrative console to enable the feature. This step creates the directory structure that the monitored directory feature uses.

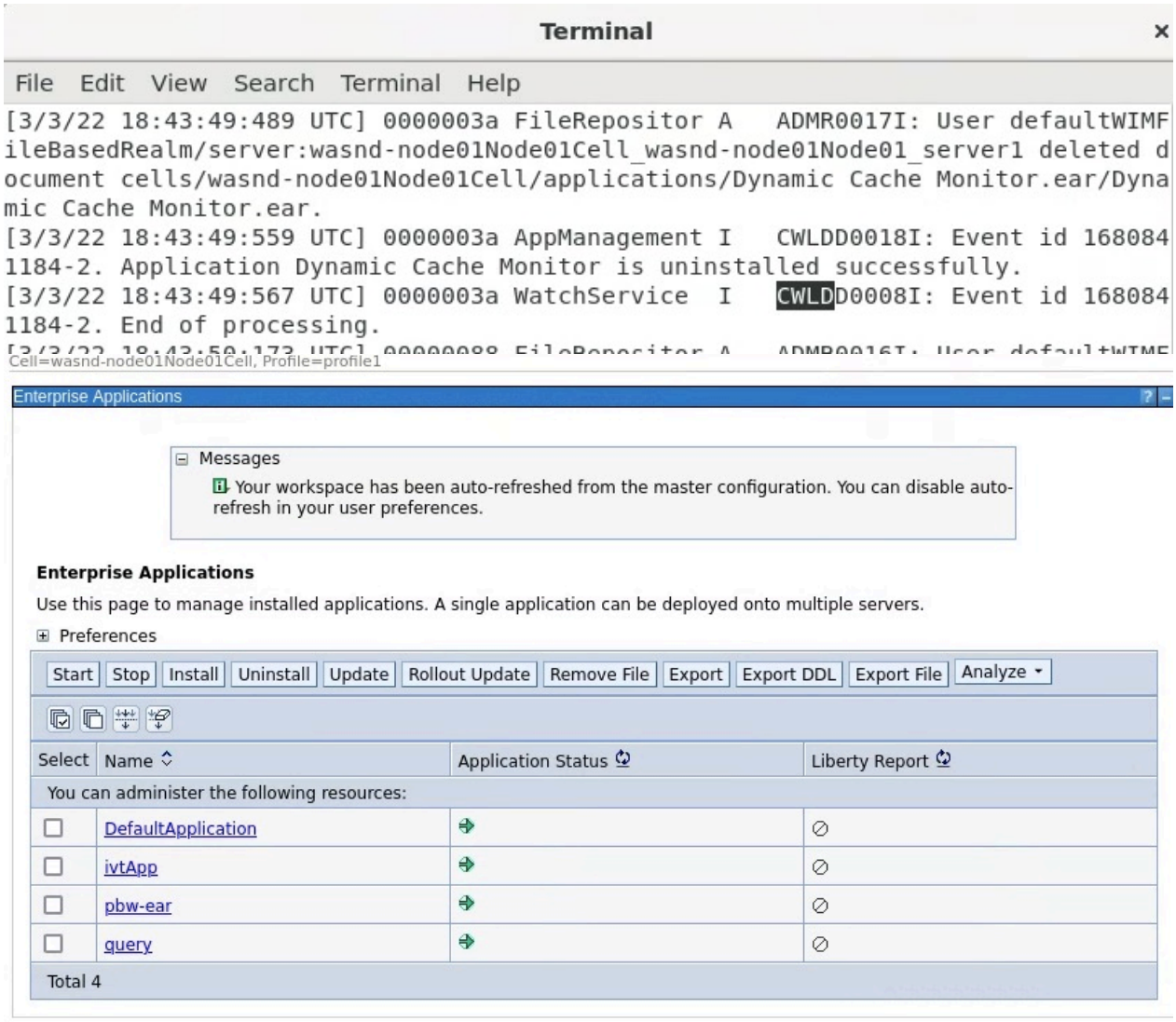



Terminal
File Edit View Search Terminal Help
[3/3/22 17:58:15:583 UTC] 00000001 CSIServerRI A JSAS0008I: Server request i
nterceptor registered.
[3/3/22 17:58:15:599 UTC] 00000001 SecurityCompo A JSAS0009I: IOR interceptor
registered.
[3/3/22 17:58:18:243 UTC] 00000001 CoordinatorIm I HMGR0206I: The Coordinator
is an Active Coordinator for core group DefaultCoreGroup. The active coordinator
set is [wasnd-node01Node01Cell\wasnd-node01Node01\server1].
[3/3/22 17:58:18:268 UTC] 00000001 DCSPluginSing I HMGR0005I: The Single Serve
r DCS Core Stack transport has been started for core group DefaultCoreGroup.
[3/3/22 17:58:18:283 UTC] 00000001 CoordinatorCo I HMGR0011I: The High Availab
ility Manager is configured to be the bulletin board provider.
[3/3/22 17:58:18:309 UTC] 00000001 DragDropDeplo I CWLDD0103I: Monitored direc
tory application deployment service has been configured to be off.
[3/3/22 17:58:18:451 UTC] 00000001 NameServerImp A NMSV0018I: Name server avai


Terminal
File Edit View Search Terminal Help
wasadm@wasnd-node01:/ibm/profiles/profile1/bin$ ./stopServer.sh server1 -usernam
e wasadmin -password web1sphere
ADMU0116I: Tool information is being logged in file
/ibm/profiles/profile1/logs/server1/stopServer.log
ADMU0128I: Starting tool with the profile1 profile
ADMU3100I: Reading configuration for server: server1
ADMU3201I: Server stop request issued. Waiting for stop status.
ADMU4000I: Server server1 stop completed.
wasadm@wasnd-node01:/ibm/profiles/profile1/bin$ ./startServer.sh server1
ADMU0116I: Tool information is being logged in file
/ibm/profiles/profile1/logs/server1/startServer.log
ADMU0128I: Starting tool with the profile1 profile
ADMU3100I: Reading configuration for server: server1
ADMU3200I: Server launched. Waiting for initialization status.
ADMU3000I: Server server1 open for e-business; process id is 10310
wasadm@wasnd-node01:/ibm/profiles/profile1/bin$


Terminal
File Edit View Search Terminal Help
[3/3/22 18:38:24:659 UTC] 00000001 CoordinatorIm I HMGR0206I: The Coordinator is an Active Coordinator for core group DefaultCoreGroup. The active coordinator set is [wasnd-node01Node01Cell\wasnd-node01Node01\server1].
[3/3/22 18:38:24:666 UTC] 00000001 DCSPluginSing I HMGR0005I: The Single Server DCS Core Stack transport has been started for core group DefaultCoreGroup.
[3/3/22 18:38:24:671 UTC] 00000001 CoordinatorCo I HMGR0011I: The High Availability Manager is configured to be the bulletin board provider.
[3/3/22 18:38:24:676 UTC] 00000001 DragDropDeplo I CWLDD0001I: Starting monitored directory application deployment service...
[3/3/22 18:38:24:684 UTC] 00000001 DragDropDeplo I CWLDD0002I: Monitored directory application deployment service is started and monitoring file changes in directory: /ibm/profiles/profile1/monitoredDeployableApps.
Terminal
File Edit View Search Terminal Help
wasadm@wasnd-node01:/ibm/profiles/profile1$ ls
bin expandedBundles installedFilters servers
config firststeps libertyAdvisor temp
configuration installableApps logs tranlog
consolepreferences installedApps monitoredDeployableApps workspace
etc installedConnectors properties wstemp
wasadm@wasnd-node01:/ibm/profiles/profile1$
wasadm@wasnd-node01:/ibm/profiles/profile1$ ls monitoredDeployableApps/
deploymentProperties servers
wasadm@wasnd-node01:/ibm/profiles/profile1$ ls monitoredDeployableApps/servers/
server1
wasadm@wasnd-node01:/ibm/profiles/profile1$ ls monitoredDeployableApps/servers/server1/
wasadm@wasnd-node01:/ibm/profiles/profile1$ ls monitoredDeployableApps/deploymentProperties/
wasadm@wasnd-node01:/ibm/profiles/profile1$
Terminal
File Edit View Search Terminal Help
wasadm@wasnd-node01:/ibm/profiles/profile1$ cp /ibm/WebSphere/AppServer/installableApps/CacheMonitor.ear /ibm/profiles/profile1/monitoredDeployableApps/servers/server1/
wasadm@wasnd-node01:/ibm/profiles/profile1$


Terminal
File Edit View Search Terminal Help
[3/3/22 18:41:41:942 UTC] 0000003a CompositionUn A WSVR0191I: Composition unit WebSphere:cuname=Dynamic Cache Monitor in BLA WebSphere:blaname=Dynamic Cache Monitor started.
[3/3/22 18:41:41:954 UTC] 0000003a AppManagement I CWLDD0021I: Event id 1680841184-1. Application Dynamic Cache Monitor is started on: WebSphere:cell=wasnd-node01Node01Cell,node=wasnd-node01Node01,server=server1,status=success.
[3/3/22 18:41:41:961 UTC] 0000003a WatchService I CWLDD0008I: Event id 1680841184-1. End of processing.
[3/3/22 18:41:43:142 UTC] 00000088 FileRepositor A ADMR0016I: User defaultWIMF
Cell=wasnd-node01Node01Cell, Profile=profile1
Enterprise Applications
Enterprise Applications
Use this page to manage installed applications. A single application can be deployed onto multiple servers.
Preferences
Start Stop Install Uninstall Update Rollout Update Remove File Export Export DDL Export File Analyze
Select Name Application Status Liberty Report
You can administer the following resources:
DefaultApplication
Dynamic Cache Monitor
ivtApp
pbw-ear
query
Total 5
Terminal
File Edit View Search Terminal Help
wasadm@wasnd-node01:/ibm/profiles/profile1/monitoredDeployableApps$ ls
deploymentProperties servers
wasadm@wasnd-node01:/ibm/profiles/profile1/monitoredDeployableApps$ cd servers/server1/
wasadm@wasnd-node01:/ibm/profiles/profile1/monitoredDeployableApps/servers/server1$ ls
CacheMonitor.ear
wasadm@wasnd-node01:/ibm/profiles/profile1/monitoredDeployableApps/servers/server1$ rm -f CacheMonitor.ear
wasadm@wasnd-node01:/ibm/profiles/profile1/monitoredDeployableApps/servers/server1$


Terminal
File Edit View Search Terminal Help
[3/3/22 18:43:49:489 UTC] 0000003a FileRepositor A ADMR0017I: User defaultWIMF
ileBasedRealm/server:wasnd-node01Node01Cell_wasnd-node01Node01_server1 deleted d
ocument cells/wasnd-node01Node01Cell/applications/Dynamic Cache Monitor.ear/Dyna
mic Cache Monitor.ear.
[3/3/22 18:43:49:559 UTC] 0000003a AppManagement I CWLDD0018I: Event id 168084
1184-2. Application Dynamic Cache Monitor is uninstalled successfully.
[3/3/22 18:43:49:567 UTC] 0000003a WatchService I CWLDD0008I: Event id 168084
1184-2. End of processing.
Cell=wasnd-node01Node01Cell, Profile=profile1
Enterprise Applications
Messages
Your workspace has been auto-refreshed from the master configuration. You can disable auto-refresh in your user preferences.
Enterprise Applications
Use this page to manage installed applications. A single application can be deployed onto multiple servers.
Preferences
Start Stop Install Uninstall Update Rollout Update Remove File Export Export DDL Export File Analyze
Select Name Application Status Liberty Report
You can administer the following resources:
DefaultApplication
ivtApp
pbw-ear
query
Total 4