

WebSphere Application Server v9 Administration and Configuration





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1. System management: Technical overview



System management: Technical overview

In this lesson, we cover the following topics:

- System management overview
- New features for administrators
- Java Management Extensions
- System management in a stand-alone server environment
- System management in a distributed server environment
- Advanced system management of multiple stand-alone servers
- Advanced management of distributed and stand-alone servers

WebSphere Application Server profiles

- WebSphere Application Server v9 provides two runtime profiles. Every WebSphere Application Server package includes both profile types.
- The run time traditionally available with the WebSphere Application Server packages is referred to as the full profile.
- The application serving run time (application server) provided with this profile is composed of a wide spectrum of runtime components that are always available when the server is started.

System management overview

- WebSphere Application Server v9 provides easy-to-use administration tools and powerful features to make system management simple to understand and operate.
- The system management functionality of WebSphere Application Server is based on the use of Java Management Extensions (JMX).

Terminology

There are differences in how WebSphere Application Server handles administration, depending on the environment that you have set up. As you go through this course, you will see the following terms used:

- Stand-alone server environment refers to a single server that is not managed as part of a cell.
- (The server was not federated to the cell.) With the Base and Express offerings of WebSphere Application Server, this is your only option

Directory conventions

- ▶ *install_root* is used to denote the installation directory for a product. The default installation directory locations are at the following website:
http://www14.software.ibm.com/webapp/wsbroker/redirect?version=phil&product=was-nd-dist&topic=rins_dircon
- ▶ *profile_root* denotes the home profile for a directory. This is equivalent to:
install_root/profiles/profile_name
Special instances of *profile_root* are used to denote the profile home for the following processes:
 - Deployment manager:
dmgr_profile_root
 - Administrative agent:
adminAgnt_profile_root
 - Job manager:
jmgr_profile_root

Core concepts of system management

The core concepts of system management are:

- Profiles
- Application server
- Node
- Deployment manager
- Node agent
- Cell
- Administrative agent
- Job Manager

System management tools

WebSphere Application Server provides a variety of administrative tools to configure and manage your runtime environment, including:

- WebSphere Customization Toolbox (WCT)
- Integrated Solutions Console, also called the administrative console
- WebSphere scripting client (wsadmin)
- Another Neat Tool (ANT)
- Administrative applications
- Command-line utilities

New features for administrators

WebSphere Application Server Network Deployment v9 provide the following enhanced capabilities to extend application development and deployment:

- Support for Java 7
- Comprehensive programming model support
- WebSphere Batch
- Monitored directory

New features for administrators

Service mapping

- The new service mapping feature is designed to shield applications from minor changes in the services they use.
- This feature gives administrators the ability to define a mapping service that can intercept service client invocations bound for a particular service.

New features for administrators

WebSphere Application Server provides consolidated workload management, operational scaling efficiency, and high resiliency. The latest version adds the following enhanced features to help reduce operational costs and minimize the likelihood of lost business opportunities due to failure:

- Intelligent management
- Improved high availability
- Messaging infrastructure resiliency
- Enhanced memory leak detection and protection

New features for administrators

- (New in v9) WebSphere Application Server (base edition), WebSphere Application Server Network Deployment, and WebSphere Application Server for z/OS now include WebSphere eXtreme Scale in the package and entitlements to its use.
- Both the Liberty profile and the full profile can take advantage of the advanced caching abilities of WebSphere eXtreme Scale.

New features for administrators

(New in v9) The Load Balancer for IPV4 and IPV6 has been enhanced in v9 to improve flexibility in configuration and to improve workload balancing. The following features are new:

- The load balancer can now be run on the same machine as the servers it is balancing.
- This feature is supported on Linux and IBM AIX® only.

New features for administrators

(New in v9) Serviceability and troubleshooting enhancements to Session Initiation Protocol (SIP) support enable more resilient processing of SIP sessions:

- New PMI counters at the SIP container and proxy have been added to monitor and trigger on key performance indicators (KPIs):
- New counters for the SIP container allow you to monitor for thread and message congestion issues, the number of replicated and non-replicated SIP sessions, the number of rejected requests, and SIP timers.

New features for administrators

WebSphere Application Server provides numerous features to help administrators work productively so they have more time to focus on critical tasks and problem determination. These features include the following items:

- Centralized Installation Manager (CIM)
- Cross Component Trace (XCT)
- Configuration repository checkpoint and audit report
- High performance extensible logging (HPEL)
- IBM Support Assistant

Java Management Extensions

The following WebSphere Application Server administration tools use JMX:

1. WebSphere administrative console
2. wsadmin scripting client
3. Administration client Java API

JMX architecture

The JMX architecture is structured in three layers:

- Instrumentation layer
- Agent layer
- Management layer

JMX architecture

The use of JMX opens the door for third parties to provide management tools to administer WebSphere Application Server, for example:

- Programs written to control the WebSphere Application Server runtime and its resources by programmatically accessing the JMX API
- Applications that include custom JMX MBeans as part of their deployed code, allowing their components and resources to be managed through the JMX API

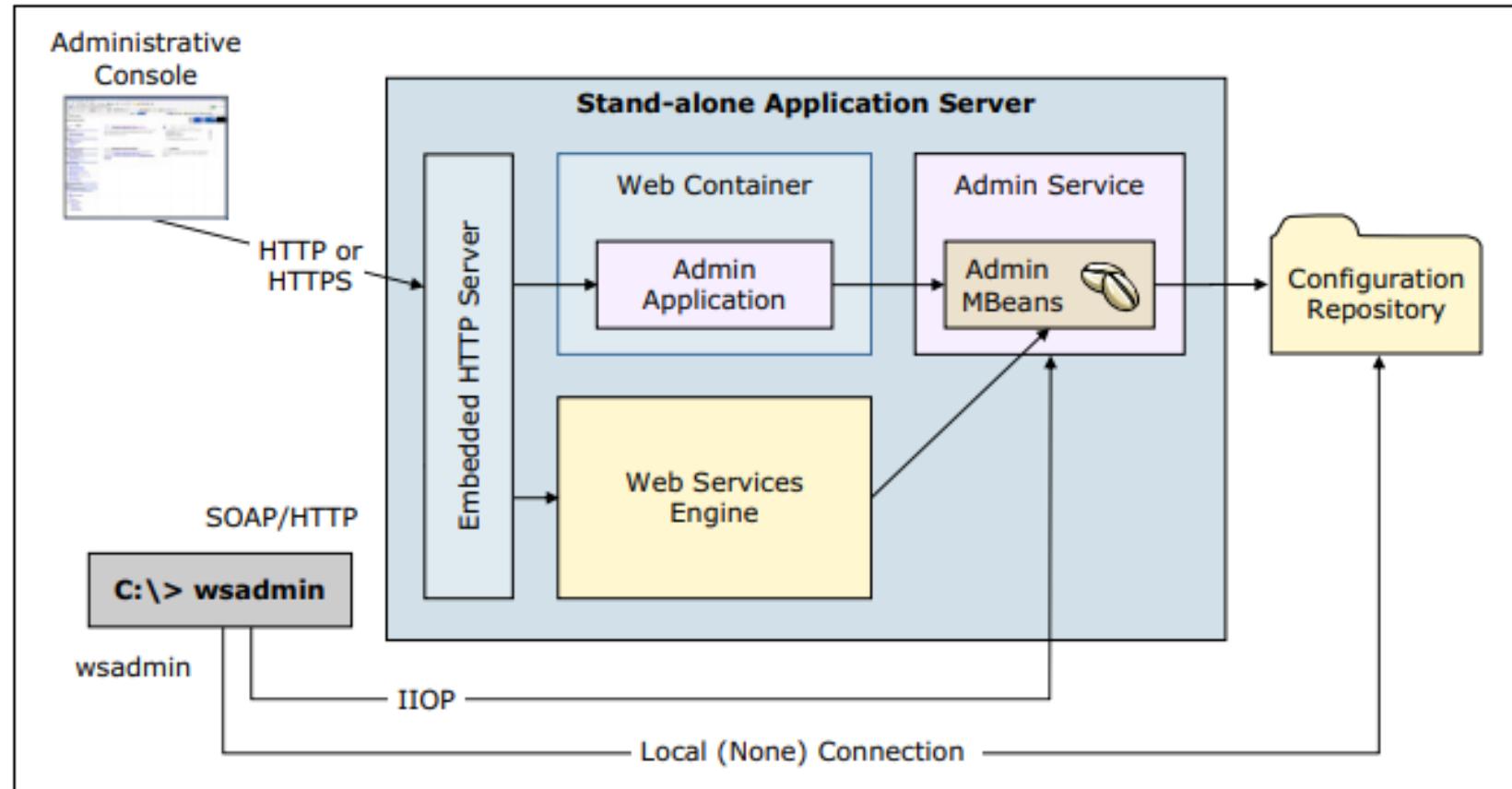
JMX MBeans

WebSphere Application Server provides a number of MBeans, each of which can have different functions and operations available, for example:

- An application server MBean can expose operations, such as start and stop.
- An application MBean can expose operations, such as install and uninstall.

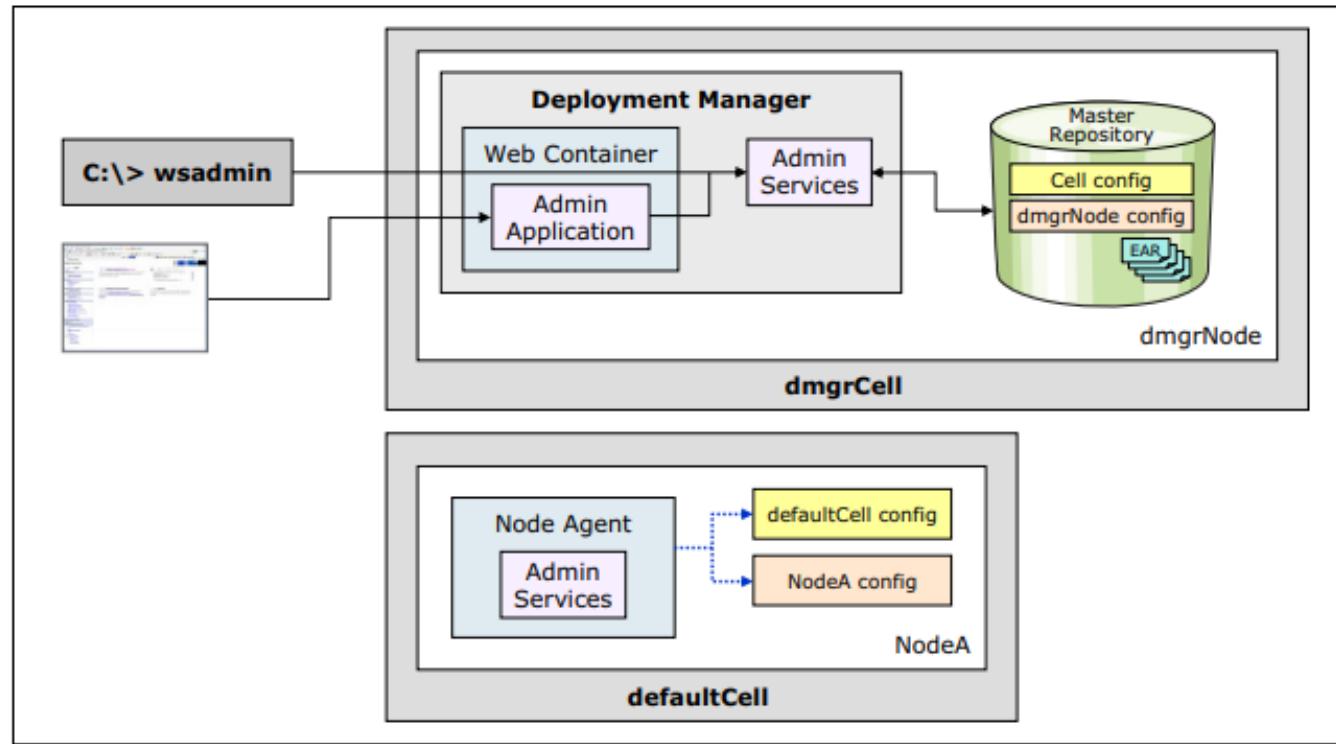
System management in a stand-alone server environment

- There are multiple levels of administration for different WebSphere Application Server environment types.
- In this section, and the next one, we introduce the common system management types and methods.
- A stand-alone application server provides the necessary capabilities to run J2EE-compliant applications

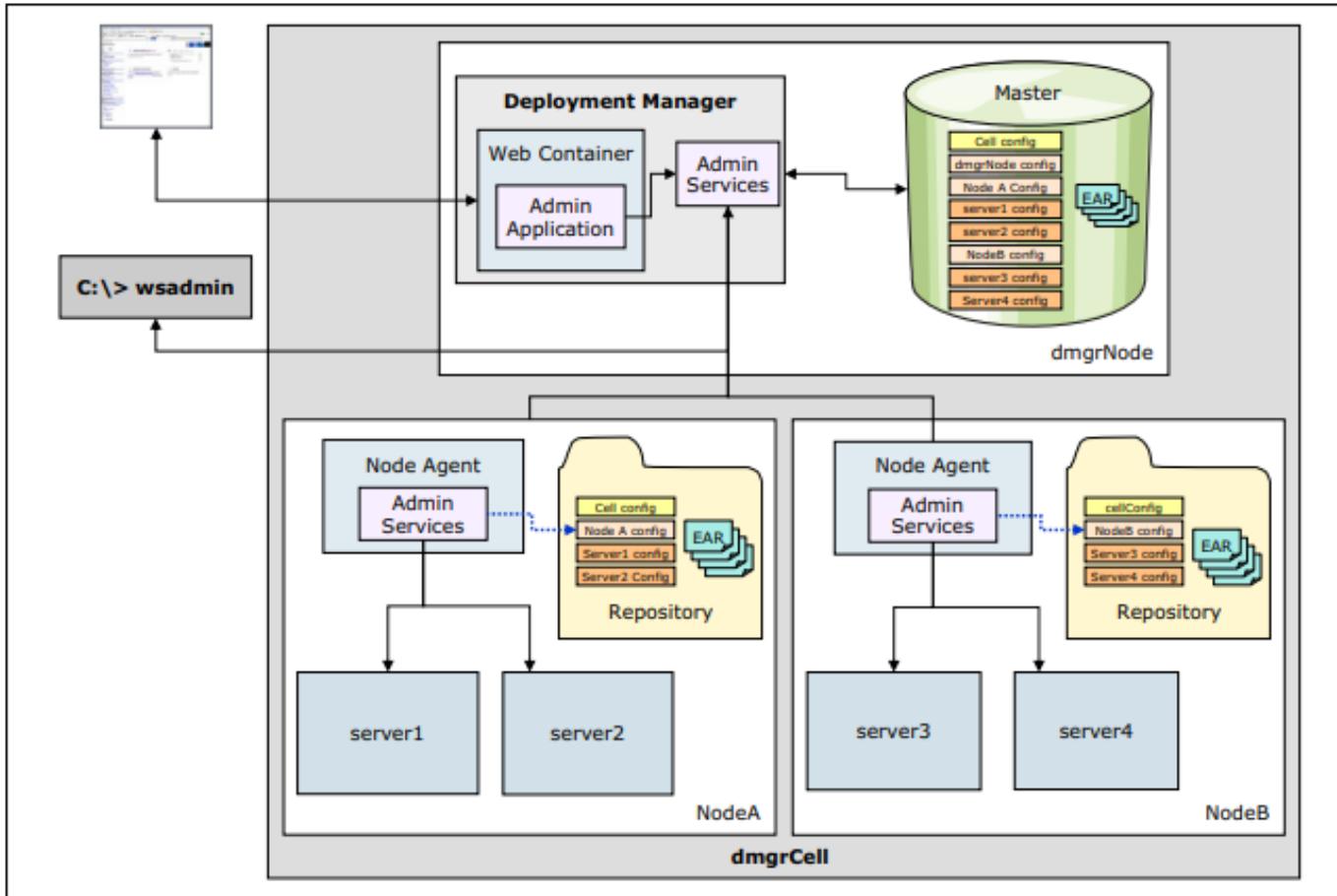


Stand-alone application server system management environment

System management in a distributed server environment



A deployment manager and unfederated custom profile



The distributed server environment

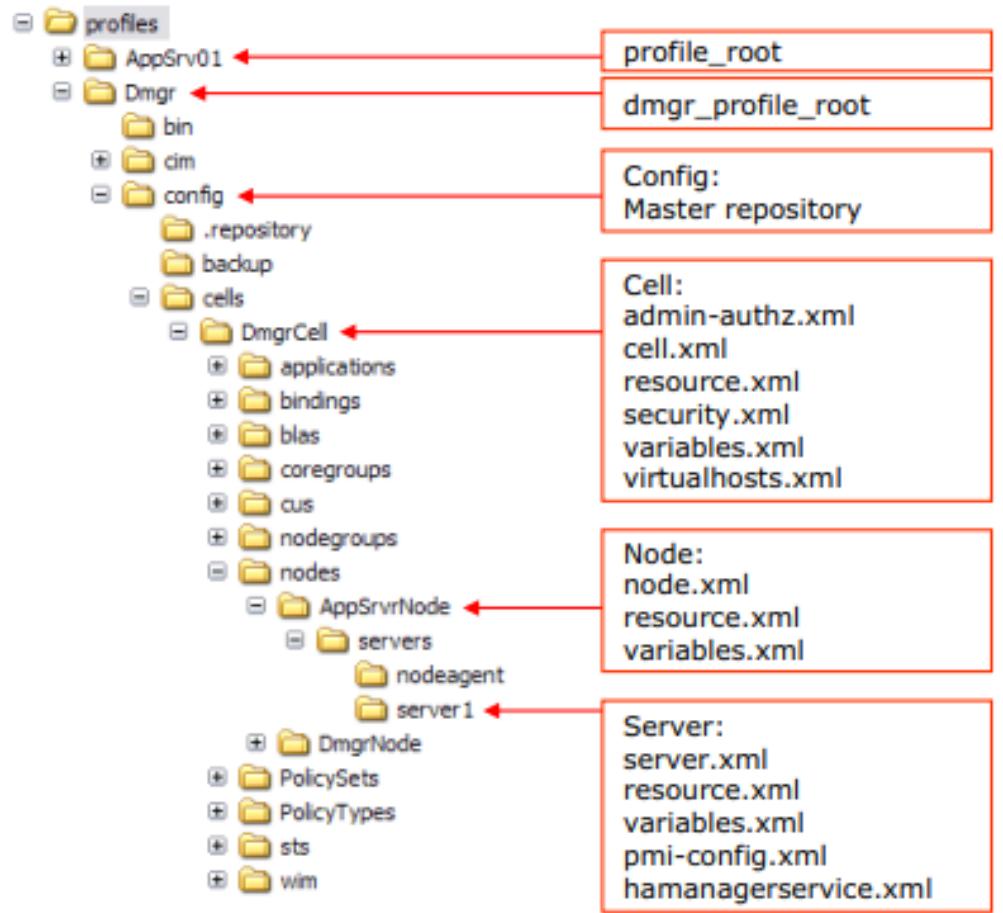
Centralized changes to configuration and application data

- The deployment manager maintains a master repository of all the configuration files for nodes and servers in the cell.
- When configuration changes are made with the deployment manager, the changes are first stored in the master repository.
- After that, automatic or manual synchronization pushes the changes down to the affected nodes.

Centralized changes to configuration and application data

Configuration repository directory structure

- Each node containing a deployment manager, application server, administrative agent, or job manager has its own profile directory under the `install_root/profiles` directory.
- The repository files are arranged in a set of cascading directories within each profile directory structure, with each directory containing a number of files relating to different components of the cell, as shown in Next Figure



Centralized changes to configuration and application data

Application data files

The profile_root/config directory of the master repository contains the following directory structure that holds application binaries and deployment settings:

cells/cell_name/applications/

- This directory contains a subdirectory for each application deployed in the cell. Names of the directories match the names of the deployed applications

Centralized changes to configuration and application data

cells/cell_name/applications/app_name.ear/deployments/app_name

- The deployment descriptors in this directory contain the bindings specified during application deployment.
- The deployment directory of each application contains these files: – deployment.xml contains configuration data for the application deployment, including the allocation of application modules to application servers and the module startup order.

Configuration file location during application installation

Several things occur upon installation of an application onto WebSphere Application Server:

- The application binaries and deployment descriptors are stored within the master repository.
- The application binaries and deployment descriptors are published to each node that will host the application.
- These files are stored in the local copy of the repository on each node.

Configuration file location during application installation

Variable scoped files

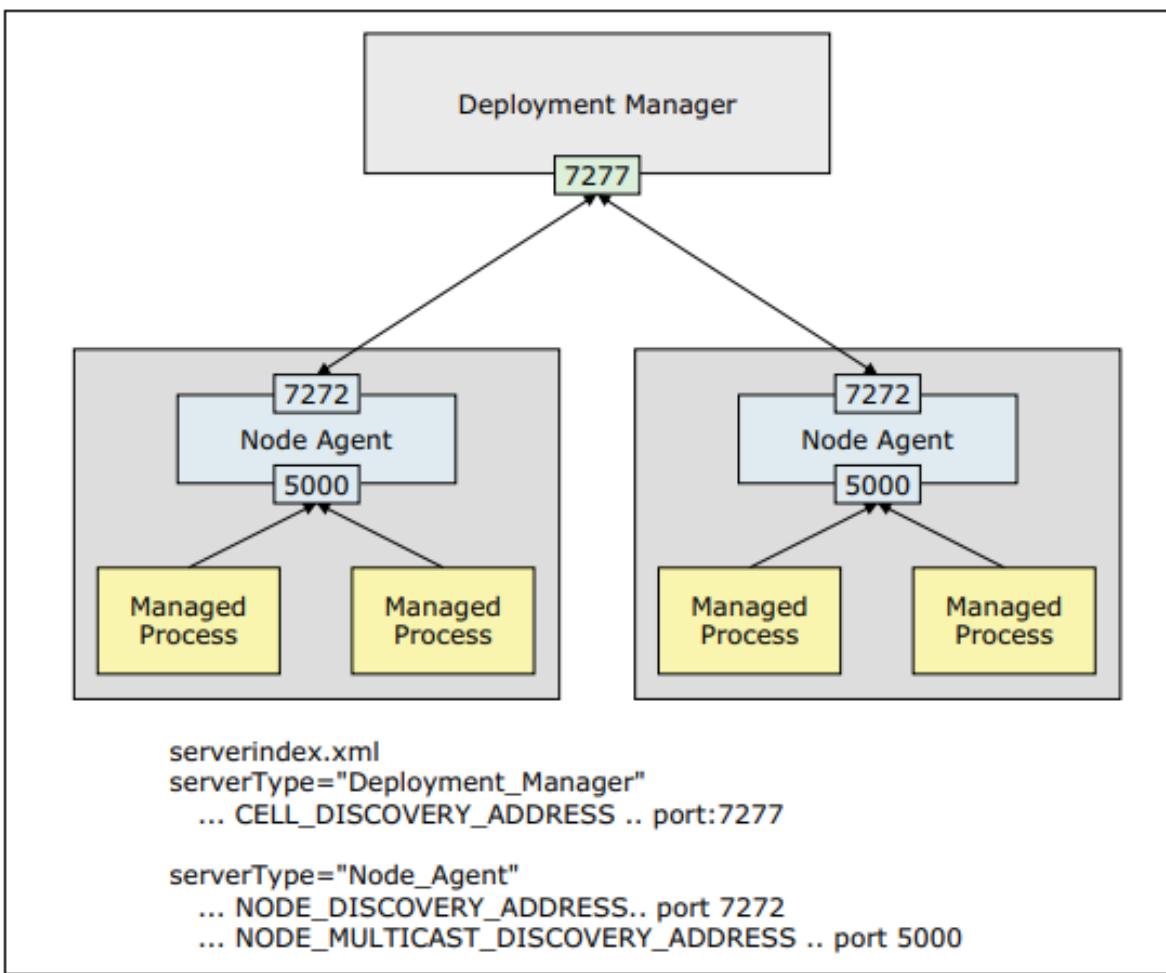
- Identically named files that exist at different levels of the configuration hierarchy are called variable scoped files.
- There are two uses for variable scoped files:
Configuration data contained in a document at one level of the configuration hierarchy is logically combined with data from documents at other levels.

Rules for process startup

- When a managed server is starting up, it sends a discovery request message that allows other processes to discover its existence and establish communication channels with it.
- This action makes it possible to start the processes in a distributed server environment without following a strict order for startup, for example, a node agent can be running while the deployment manager is not active, and vice versa

Distributed process discovery

- Each node agent and deployment manager maintains status and configuration information by using discovery addresses or ports.
- On startup, processes use these discovery addresses to discover other running components and to create communication channels between them.
- Next Figure shows an example of the distributed discovery process for a topology containing two nodes that are located on different machines.



File synchronization in distributed server environments

- The file synchronization service is the administrative service that is responsible for keeping the configuration and application data files that are distributed across the cell up to date.
- The service runs in the deployment manager and node agents, and ensures that changes made to the master repository are propagated out to the nodes, as necessary.

Synchronization scheduling

You can schedule file synchronization using the administrative console. Click System administration → Node agents → node_agent_name → File synchronization service to choose from the available options, which are shown in next Figure.

- Details of each option are: Enable synchronization at server startup
- Automatic synchronization etc

Synchronization scheduling

[Node agents](#) > [nodeagent](#) > File synchronization service

Use this page to configure the file synchronization service. The file synchronization service runs in the deployment manager and node agent. It ensures that configuration changes made to the cell repository are propagated to the appropriate node repositories.

Configuration

General Properties

Enable service at server startup

+ Synchronization interval
1 minutes

Automatic synchronization

Startup synchronization

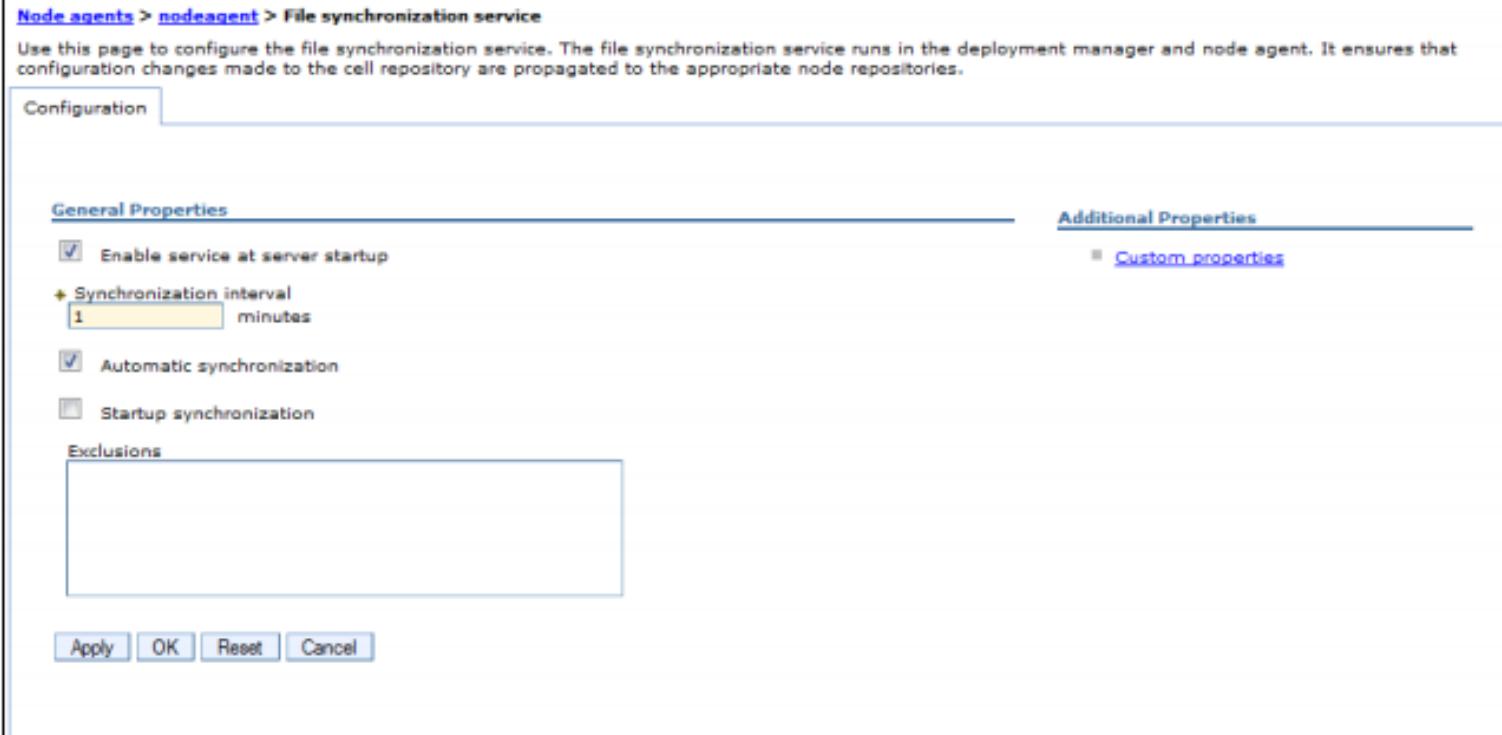
Exclusions

Additional Properties

+ Custom properties

Buttons

Apply OK Reset Cancel



How files are identified for synchronization

As part of synchronization, WebSphere Application Server must be able to identify the files that changed and therefore must be synchronized. To do this, it uses the following scheme:

- A calculated digest is kept by both the node agent and the deployment manager for each file in the configuration that they manage.

Ensuring that manual changes are synchronized

- Manually changing configuration files is not recommended. It must only be done as a diagnostic measure or on the rare occasion that you must modify a configuration setting that is not exposed by the administration clients.
- For a list of the configuration files that have settings not exposed in the administration tools

Resetting the master cell repository

- To perform a reset of the master cell repository, complete the following steps:
 1. Make sure that the deployment manager is running.
 2. Open a command prompt, change to the dmgr_profile_root/bin directory, and start a wsadmin session.

```
cd dmgr_profile_root\bin  
wsadmin
```

Ensuring that manual changes are synchronized

- 3. Enter the following statements:

```
wsadmin>set config [$AdminControl queryNames  
*.*,type=ConfigRepository,process=dmgr]
```

```
wsadmin>$AdminControl invoke $config  
refreshRepositoryEpoch
```

- 4. If the commands can be executed successfully, you can see a number returned by the refreshRepositoryEpoch operation.

Ensuring that manual changes are synchronized

```
[root@saw211-RHEL2 profiles]# cd Dmgr/bin/  
[root@saw211-RHEL2 bin]# ./wsadmin.sh  
WASX7209I: Connected to process "dmgr" on node was85Dmgr01 using SOAP connector; The  
type of process is: DeploymentManager  
WASX7029I: For help, enter: "$Help help"  
wsadmin>set config [$AdminControl queryNames *:*,type=ConfigRepository,process=dmgr]  
WebSphere:name=repository,process=dmgr,platform=common,node=was85Dmgr01,version=5.0,t  
ype=ConfigRepository,mbeanIdentifier=repository,cell=was85DmgrCell01,spec=1.0  
wsadmin>$AdminControl invoke $config refreshRepositoryEpoch  
1339541712734  
wsadmin>■
```

Resetting the master node repository

- To perform a reset of the master node repository, complete the following steps:
 1. Make sure that the deployment manager is running.
 2. Open a command prompt, change to the profile_root/bin directory, and start a wsadmin session, as shown in the next example.

```
cd profile_root\bin  
wsadmin
```

Resetting the master node repository

3. Enter the following statements:

```
wsadmin>set config [$AdminControl queryNames  
*.*,type=ConfigRepository,process=nodeagent]  
wsadmin>$AdminControl invoke $config  
refreshRepositoryEpoch
```

4. If the commands can be executed successfully, you can see a number returned by the refreshRepositoryEpoch operation.

Resetting the master node repository

```
[root@saw211-RHEL2 profiles]# cd Node01/bin/
[root@saw211-RHEL2 bin]# ./wsadmin.sh -port 8878
WASX7209I: Connected to process "nodeagent" on node was85Node01 using SOAP connector;
The type of process is: NodeAgent
WASX7029I: For help, enter: "$Help help"
wsadmin>set config [$AdminControl queryNames *:*,type=ConfigRepository,process=nodeagent]
WebSphere:name=repository,process=nodeagent,platform=common,node=was85Node01,version=5.0,type=ConfigRepository,mbeanIdentifier=repository,cell=was85DmgrCell01,spec=1.0
wsadmin>$AdminControl invoke $config refreshRepositoryEpoch
1339541564049
wsadmin>
```

Explicit or forced synchronization

Synchronization can be explicitly forced at any time using the administrative console, the syncNode command, or the wsadmin scripting tool. Here are details of each option:

Administrative console

- Click System administration Nodes, select the check box beside the node whose configuration files you want to synchronize, and click Synchronize or Full Resynchronize

Explicit or forced synchronization

Node synchronization on administrative console

Nodes

Use this page to manage nodes in the application server environment. A node corresponds to a physical computer system with a distinct IP following table lists the managed and unmanaged nodes in this cell. The first node is the deployment manager. Add new nodes to the cell clicking Add Node.

Preferences

Add Node Remove Node Force Delete Synchronize Full Resynchronize Stop

Select	Name	Host Name	Version	Discovery Protocol
<input type="checkbox"/>	was85Dmgr01	saw211-RHEL2	ND 8.5.0.0	TCP
<input type="checkbox"/>	was85Node01	saw211-RHEL2	ND 8.5.0.0	TCP
Total 2				

Explicit or forced synchronization

- The syncNode command resides in the bin directory under the base install or the node profile directory.
- To begin synchronization using this option, give the following commands:

```
cd profile_root\bin  
syncNode cell_host
```

Explicit or forced synchronization

```
[root@saw211-RHEL2 profiles]# cd Node01/bin/
[root@saw211-RHEL2 bin]# ./stopNode.sh
ADMU0116I: Tool information is being logged in file
          /home/opt/IBM/WebSphere/AppServer/profiles/Node01/logs/nodeagent/stopSe
r.log
ADMU0128I: Starting tool with the Node01 profile
ADMU3100I: Reading configuration for server: nodeagent
ADMU3201I: Server stop request issued. Waiting for stop status.
ADMU4000I: Server nodeagent stop completed.

[root@saw211-RHEL2 bin]# ./syncNode.sh saw211-RHEL2
ADMU0116I: Tool information is being logged in file
          /home/opt/IBM/WebSphere/AppServer/profiles/Node01/logs/syncNode.log
ADMU0128I: Starting tool with the Node01 profile
ADMU0401I: Begin syncNode operation for node was85Node01 with Deployment
          Manager saw211-RHEL2: 8879
ADMU0016I: Synchronizing configuration between node and cell.
ADMU0402I: The configuration for node was85Node01 has been synchronized with
          Deployment Manager saw211-RHEL2: 8879
[root@saw211-RHEL2 bin]#
```

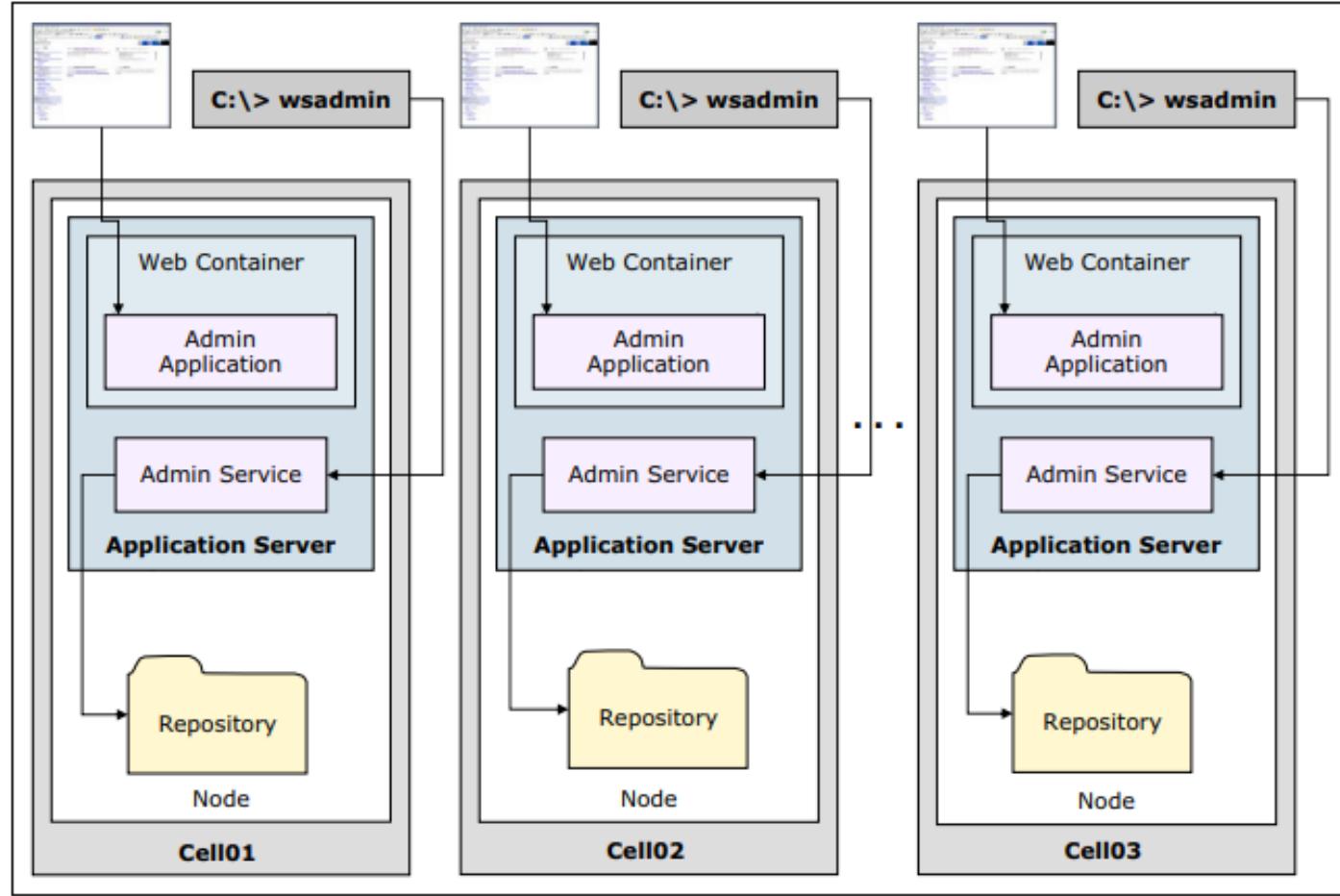
Advanced system management of multiple stand-alone servers

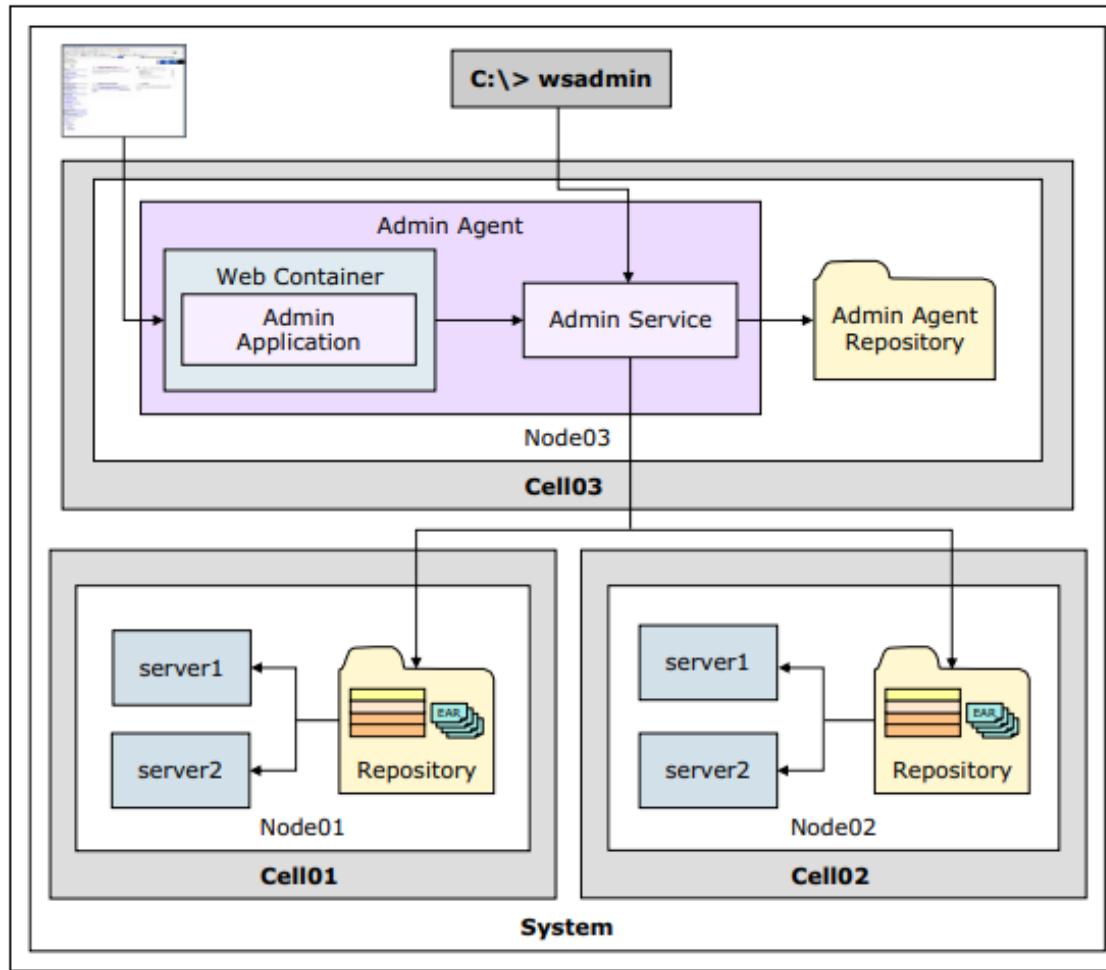
- A multiple stand-alone server environment can offer advantages when compared to a stand-alone server:
 1. Isolation for critical applications
 2. Dedicated resources
 3. Enhanced serviceability

Advanced system management of multiple stand-alone servers

- There are two options for administering the application servers in a multiple stand-alone server environment:
 1. Independent administration
 2. Administrative agent

	Independent administration	Administrative agent
Centralized control point	No. An administrator has to juggle multiple consoles.	Yes. An administrator can use an administrative agent as the central control point.
System resources used for administrative functions	Each application server runs its own administrative service and the administrative console application.	After a node containing a stand-alone server is registered with the administrative agent, the administrative console application and administrative service are stopped on that application server. The administrative agent is responsible for managing all of the servers on the registered node. System resources are dedicated to running applications.
Management capabilities when server is not running	The administrative application and administrative service are not available if the server is not running. An administrator must start the server locally.	The administrative agent modifies the stand-alone server's configuration repository directly using the administrative service. The administrative agent can also start, stop, and create new servers within the managed node.

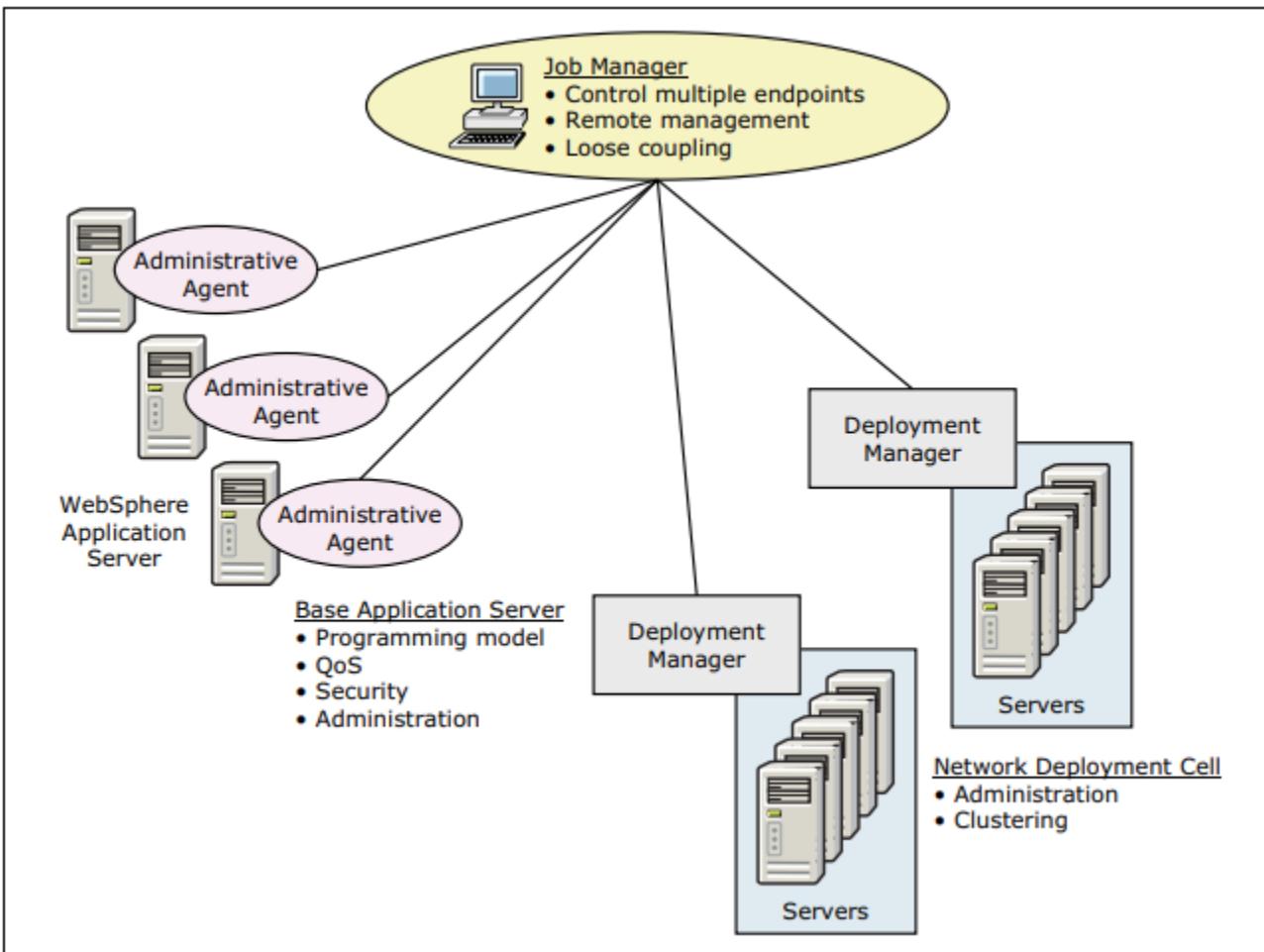


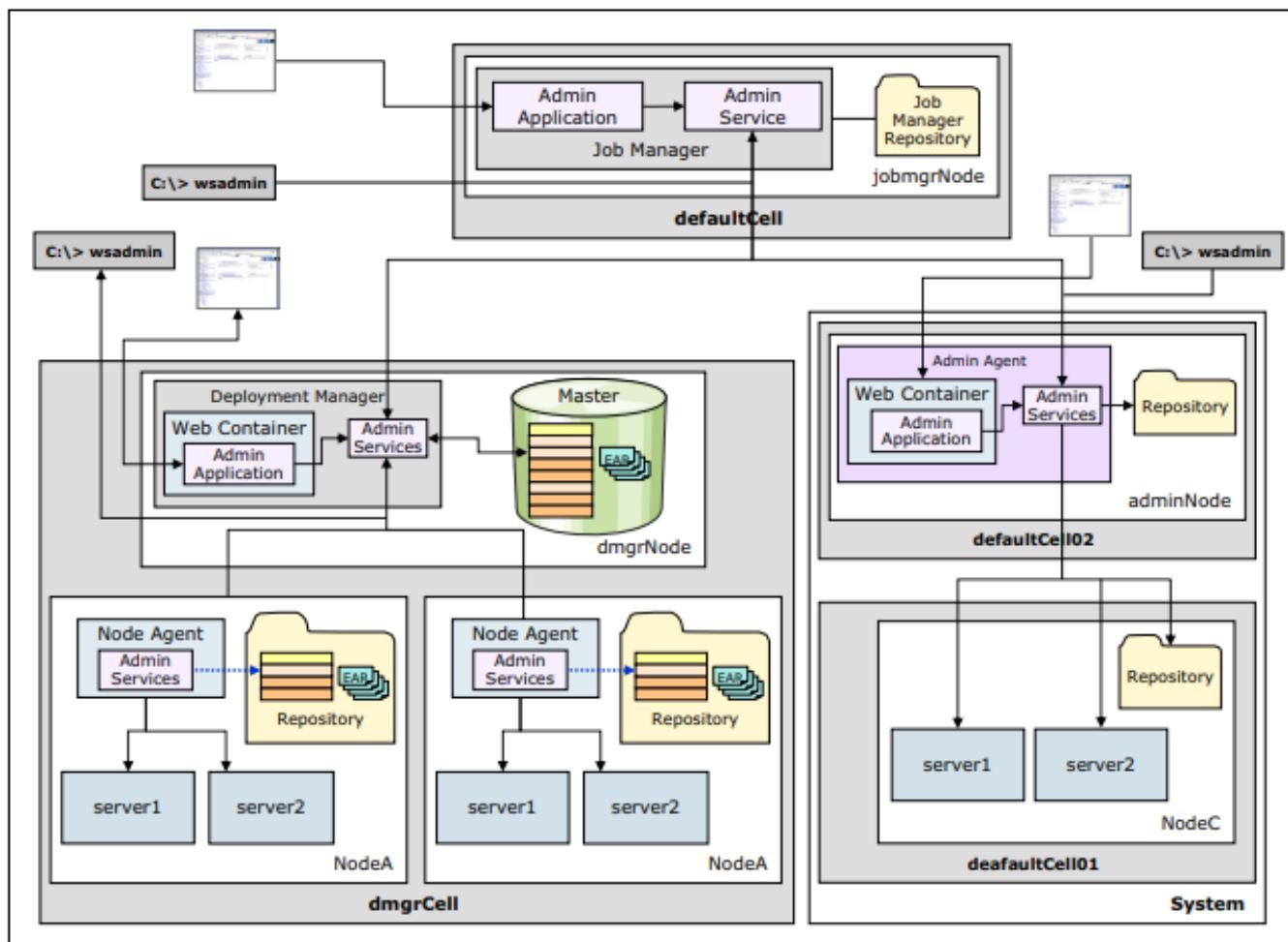


Advanced management of distributed and stand-alone servers

The job manager administers the registered environments by submitting jobs that perform tasks, for example:

- Start and stop servers
- Create and delete servers
- Install and uninstall applications
- Start and stop applications
- Run wsadmin scripts
- Distribute files





3. Working with profiles on distributed systems



Working with profiles on distributed systems

The purpose of this lesson is to help you build your initial WebSphere Application Server environment after you install the product. In this lesson, we cover the following topics:

- Types of profiles
- Planning for profiles
- Building systems with profiles
- Managing profiles with the command line

Types of profiles

- The WebSphere Application Server installation process simply lays down a set of core product files required for the runtime processes.
- After installation, you need to create one or more profiles that define the run time to have a functional system.
- The core product files are shared among the runtime components defined by these profiles.

Application server profile

The application server profile defines a single stand-alone application server. Using this profile gives you an application server that can be run in unmanaged (stand-alone) mode or managed mode (by federating it with the administrative agent profile). The environment has the following characteristics:

- The profile consists of one cell, one node, and one server.
- The cell and node are not relevant in terms of administration, but you see them when you administer the server through the administrative console scopes.
- The server uses a dedicated, built-in administrative console.

Deployment manager profile

- The deployment manager profile defines a deployment manager in a distributed server environment.
- Although you can conceivably have the Network Deployment edition and run only stand-alone servers, this action bypasses the primary advantages of Network Deployment, which is workload management, failover, and central administration.

Custom profile

- A custom profile is an empty node without any server instance that is intended for federation to a deployment manager.
- After federation, the deployment manager uses it as a target on which it can create, for example, application server profile instances.

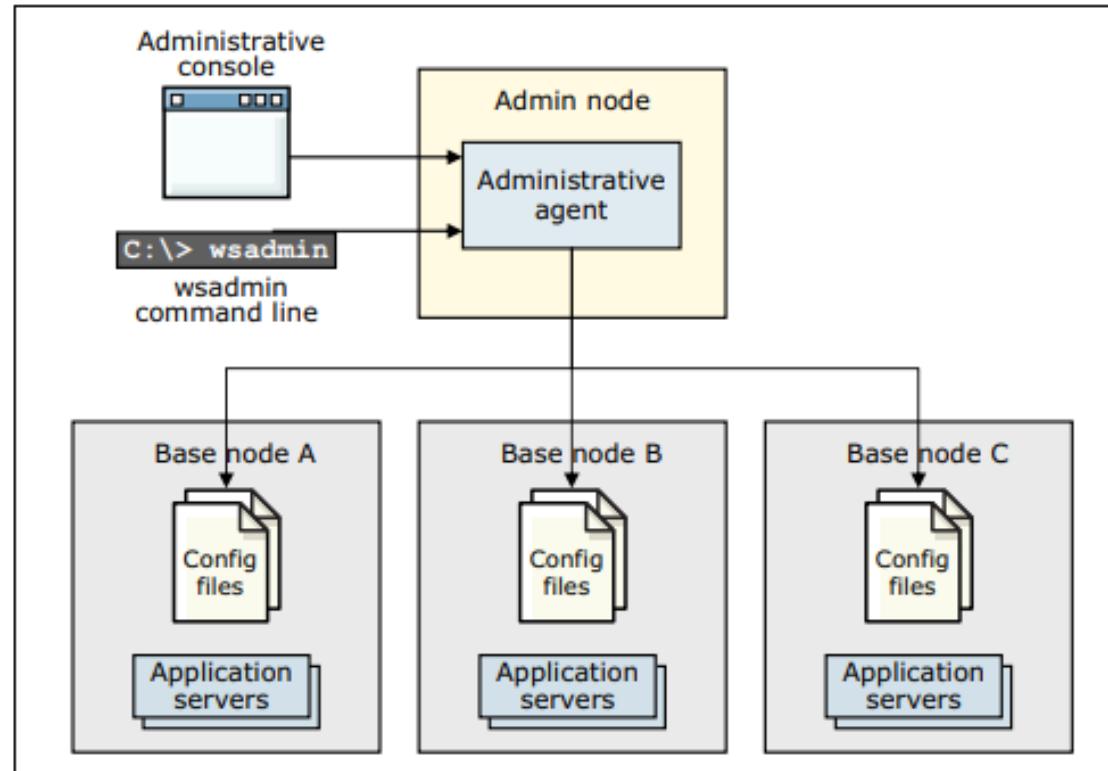
Cell profile

- A cell profile combines two profiles: a deployment manager profile and an application server profile.
- In this case, the deployment manager and application server reside on the same system, and the application server profile is already federated to the deployment manager cell.

Administrative agent profile

- The administrative agent profile provides enhanced management capabilities for stand-alone application servers.
- An administrative agent profile is created on the same node as the stand-alone servers and can manage only servers on that node.
- The node configuration for each stand-alone server is separate from any other servers on the system, but it is managed using the administrative console on the administrative agent, as illustrated in Next Figure.

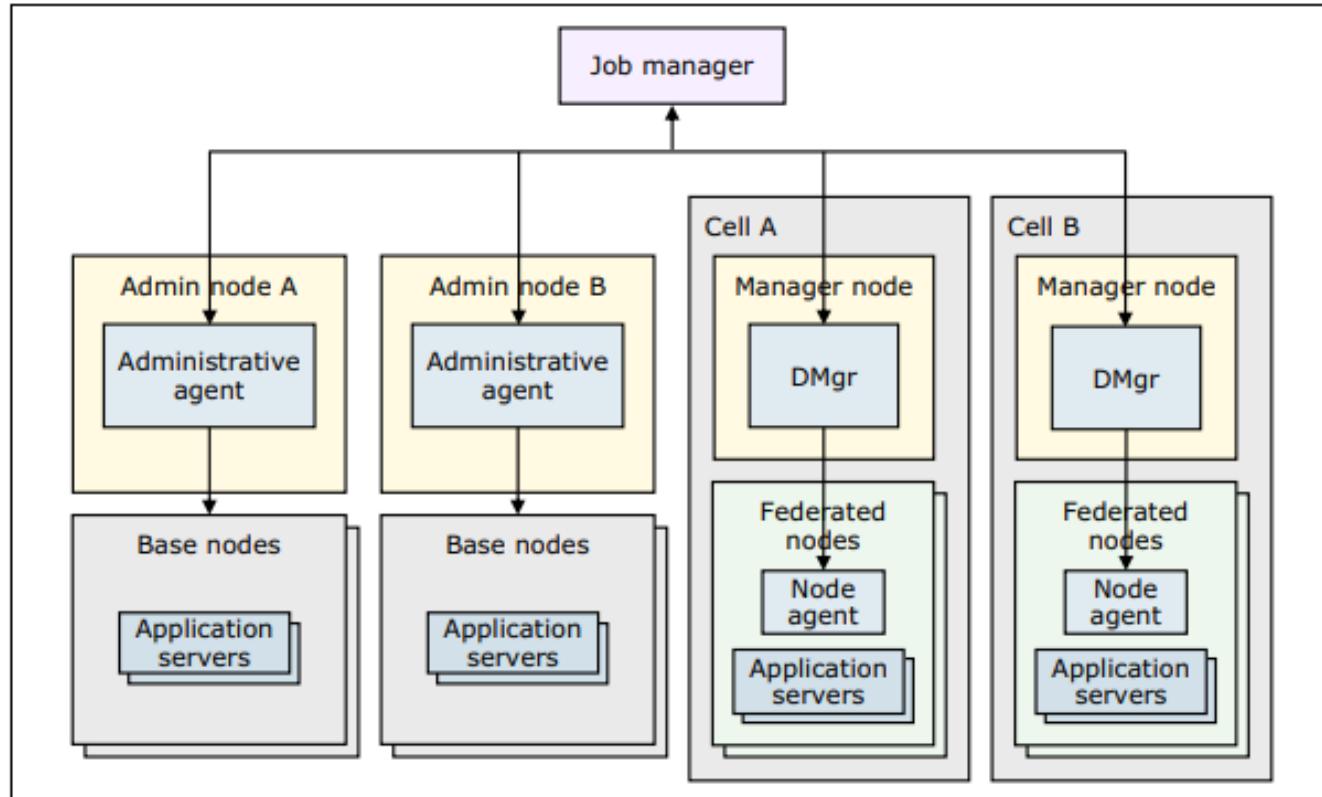
Administrative agent profile



Job manager profile

- A job manager is defined by a job manager profile.
- The job manager's primary purpose is to support flexible management of WebSphere Application Server profiles and to queue jobs to registered servers.
- For stand-alone application servers, to participate in flexible management, first they are registered with the administrative agent

Job manager profile



Planning for profiles

- Profiles grow when applications and associated log files are created, and therefore these increases must be considered at the planning stages.
- Errors can occur when you do not provide enough space to create a profile.
- Verify that you have file system reserves in addition to the minimum space required for a particular profile, for log files, and temporary files.
- The amount and size of these files can vary on your configuration and on used applications.

Building systems with profiles

Profiles can be created at any time during or after installation using graphical or command-line tools. WebSphere Application Server provides the following profile management tools:

- The `manageprofiles` command: A command-line interface for profile management functions.
- Profile Management Tool (PMT): A GUI interface delivered by the WebSphere Customization Toolbox. This tool gathers user input and invokes the `manageprofiles` command-line tool to manage the profiles for you.

Starting the WebSphere Customization Toolbox Profile Management Tool

There are several ways to start the WebSphere Customization Toolbox:

- At the end of the installation process using the Installation Manager install wizard, select the option to start the Profile Management Tool to create a profile

Starting the WebSphere Customization Toolbox Profile Management Tool

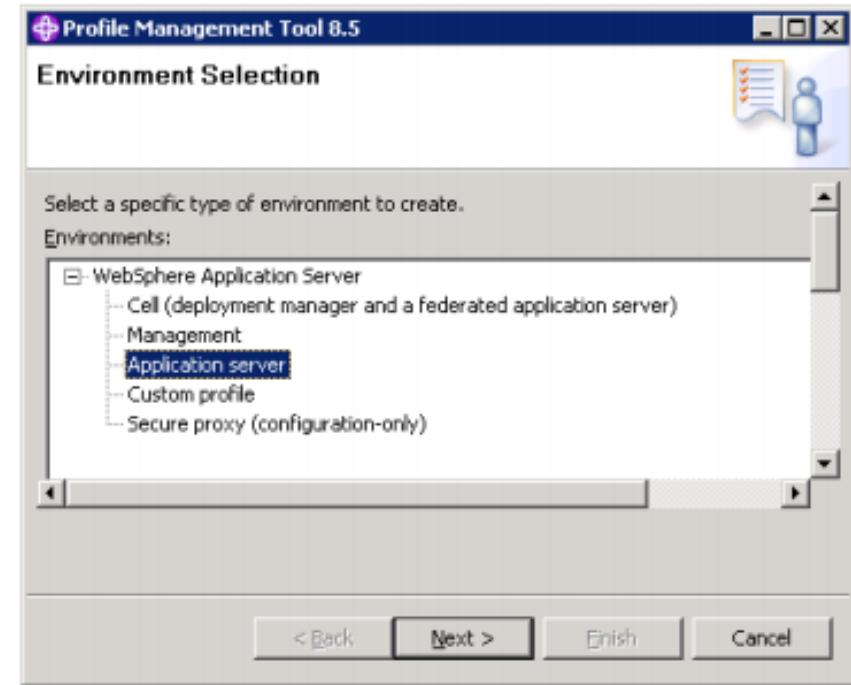
- Windows only:
From the Start menu, select **Start → Programs → IBM WebSphere → Application Server Network Deployment V8.5 → WebSphere Customization Toolbox.**
- For Linux only:
From the operating system menu to start programs, select **Applications → IBM WebSphere Application Server Network Deployment V8.5 → WebSphere Customization Toolbox → Profile Management Tool.**
- For all platforms:
Use the **wct.bat** or **wct.sh** command located in the
<install_root>/bin/ProfileManagement directory.

Common steps for all profiles

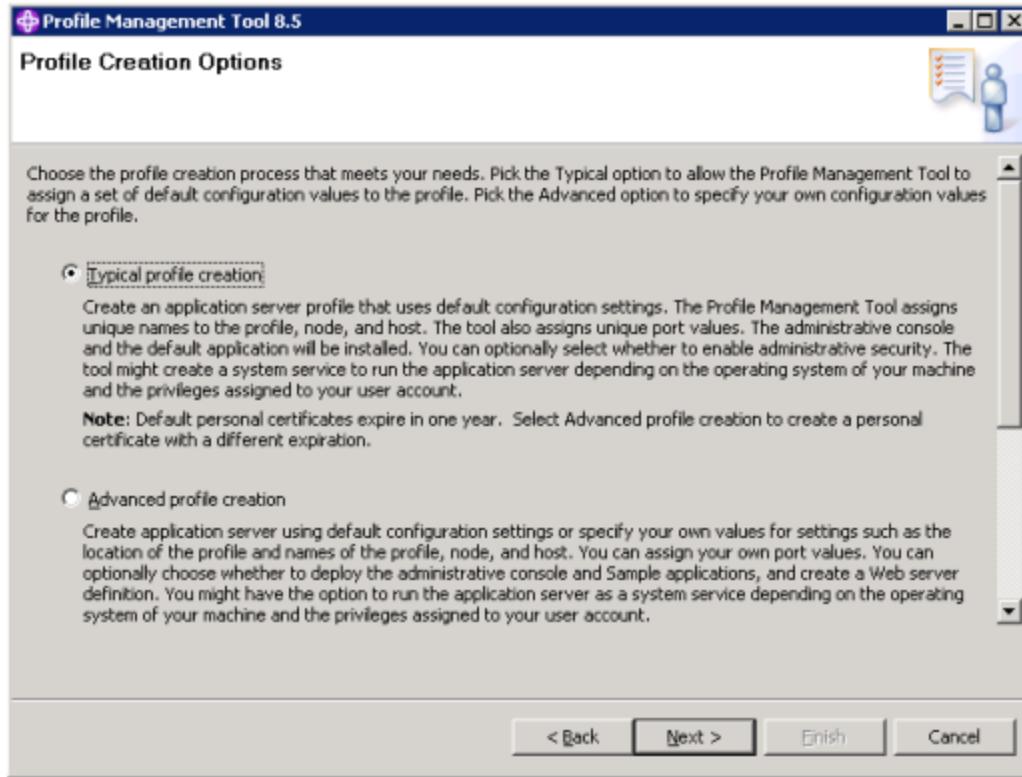
- Many of the options that are available when you create a profile are the same, regardless of the type of profile.
- This section introduces the common steps that are used while defining different profiles

Environment selection

- The Profile Management Tool provides multiple profile templates, including the cell template, which has the ability to create a cell in a single step.
- During profile creation, you are asked to select the type of profile to create, as shown in Figure

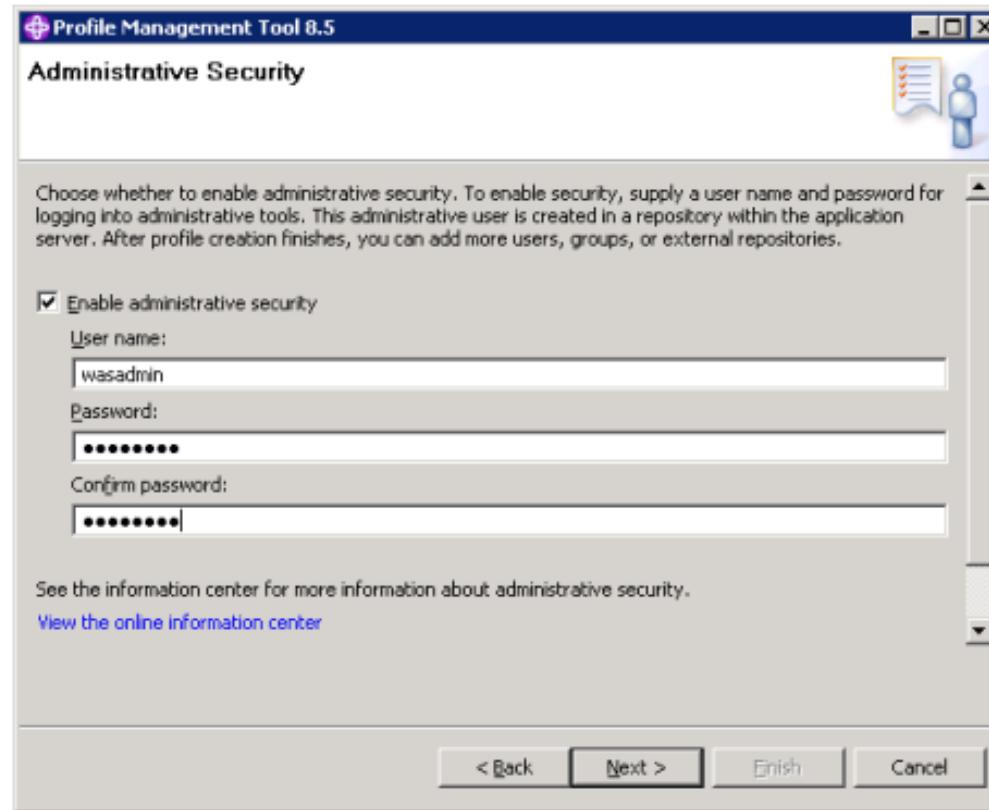


Profile creation options



- The Advanced path is preferred because it gives you additional control over names and settings

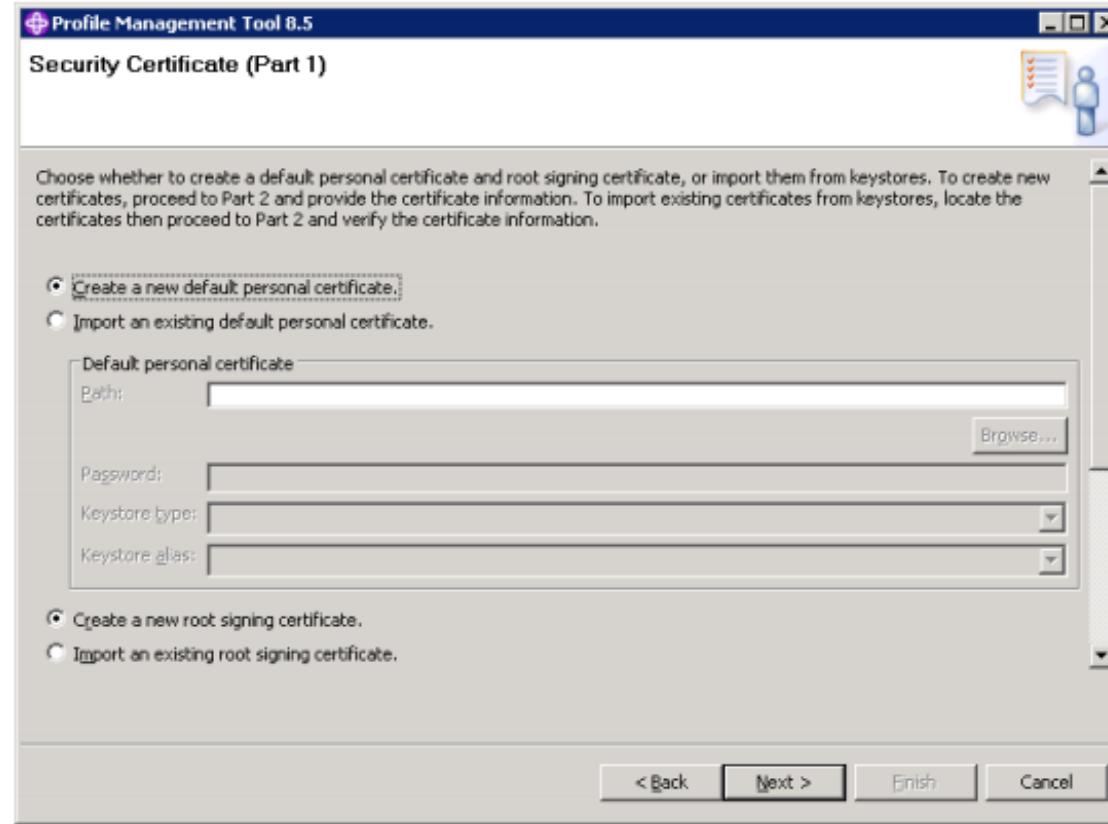
Administrative security

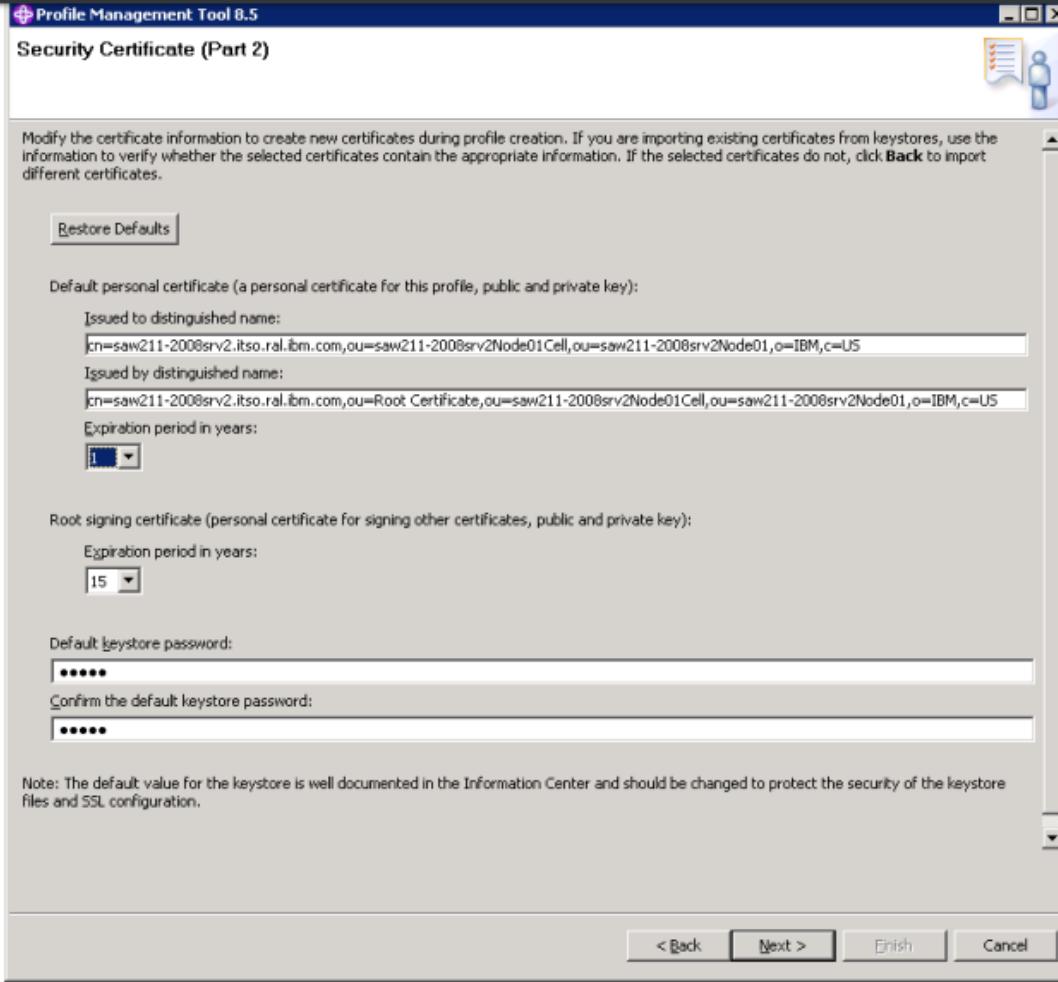


Certificates

- Each profile contains a unique chained certificate signed by a unique long-lived root certificate that is generated when the profile was created.
- When a profile is federated to a deployment manager, the signer for the root signing certificate is added to the common truststore for the cell, establishing trust for all certificates signed by that root certificate.

Certificates





Port assignments

Profile Management Tool 8.5

Port Values Assignment

The values in the following fields define the ports for the application server and do not conflict with other profiles in this installation. Another installation of WebSphere Application Server or other programs might use the same ports. To avoid run-time port conflicts, verify that each port value is unique.

Default Port Values Recommended Port Values

Administrative console port (Default 9060):	9060
Administrative console secure port (Default 9043):	9043
HTTP transport port (Default 9080):	9080
HTTPS transport port (Default 9443):	9443
Bootstrap port (Default 2809):	2809
SIP port (Default 5060):	5060
SIP secure port (Default 5061):	5061
SOAP connector port (Default 8880):	8880
Administrative interprocess communication port (Default 9633)(X):	9633
SAS SSL ServerAuth port (Default 9401):	9401
CSIV2 ServerAuth listener port (Default 9403):	9403

< Back Next > Finish Cancel

Port assignments

When you take the Advanced path through the profile wizard, you have three options:

- Default Port Values: Use the default set of port numbers.
- Recommended Port Values: Use the recommended set of port numbers. These are selected as unique to the WebSphere installation.
- Manually customize the port numbers.

Port assignments

After profile creation, you can obtain port numbers by looking in the following file:

- ▶ *profile_home/properties/portdef.props*
- ▶ *profile_home/logs/AboutThisProfile.txt*

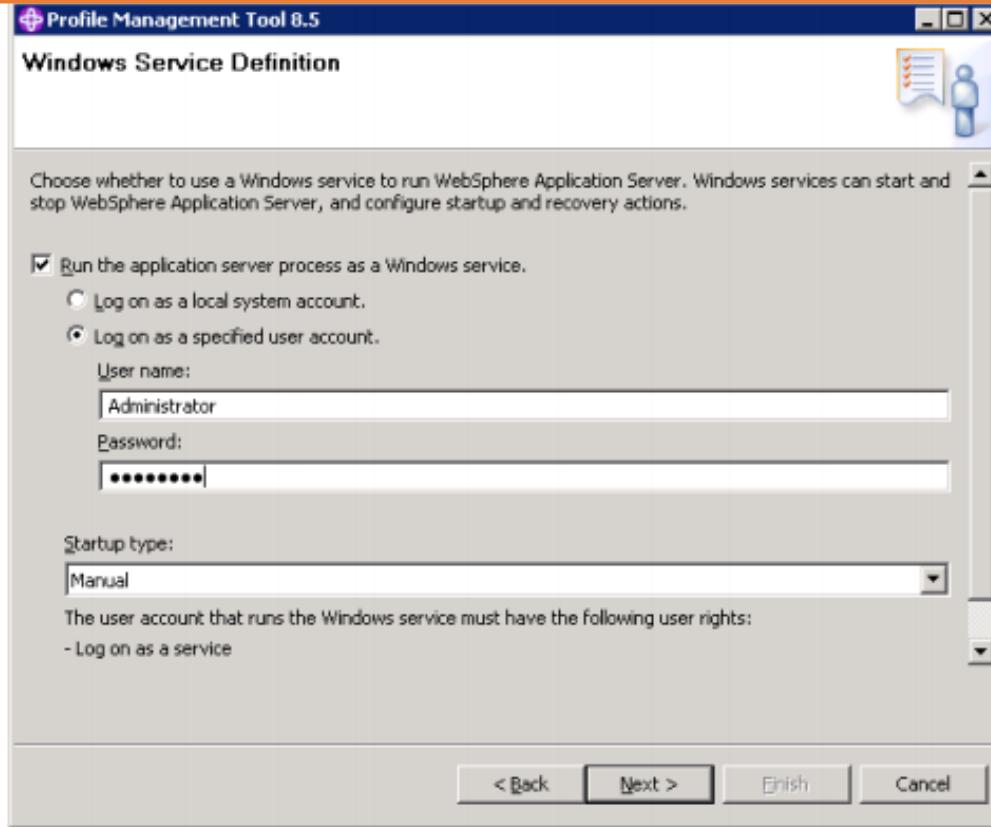
For example:

- ▶ *C:\IBM\WebSphere\AppServer\profiles\AppSrv01\properties\portdef.props*
- ▶ *C:\IBM\WebSphere\AppServer\profiles\AppSrv01\logs\AboutThisProfile.txt*

Running as a service

- When you create a profile on a Windows or Linux system, you have the option of running the application server as a Windows service.
- This action provides you with a simple way of automatically starting the server process with the system.
- If you want to run the process as a Windows service, select the check box, and enter the values for the logon and startup type.

Running as a service



Verification steps

WebSphere Application Server - First steps - AppSrv01

WebSphere Application Server

IBM

First steps

Installation verification
Confirm that your server is installed and that it can start properly.

Start the server
Start the server and its applications.

Administrative console
Install and administer applications.

WebSphere Customization Toolbox
Launch this toolbox to access the Profile Management Tool and work with profiles, or to access the Migration Management Tool and migrate WebSphere Application Server 6.0, 6.1, 7.0 or 8.0 profiles to version 8.5.

Information center for WebSphere Application Server
Learn more about WebSphere Application Server and explore sample applications.

IBM Education Assistant for WebSphere software
Access multimedia content for WebSphere Application Server version 8.5 and other IBM software products.

Exit

Verification steps

- To verify the new profile installation, you can use the Installation verification link. It launches the new profile and log information in a pop-up window, as illustrated on Next Figure.
- You can also use it later by running the `firststeps` script from `profile_root` directory, for example:

C:\IBM\WebSphere\AppServer\profiles\AppSrv01\firststeps

Verification steps

```
First steps output - Installation verification
>ADMU3200I: Server launched. Waiting for initialization status.
>
>ADMU3000I: Server server1 open for e-business; process id is 4760
>
Server port number is:9081
IVTL0010I: Connecting to the saw211-2008srv2.itso.ral.ibm.com WebSphere Application Server on port: 9081
IVTL0015I: WebSphere Application Server saw211-2008srv2.itso.ral.ibm.com is running on port: 9081 for profile AppSrv01
Testing server using the following URL:http://saw211-2008srv2.itso.ral.ibm.com:9081/lt/ltserver?parm2=lt servlet
IVTL0050I: Servlet engine verification status: Passed
Testing server using the following URL:http://saw211-2008srv2.itso.ral.ibm.com:9081/lt/ltserver?parm2=ltAddition.jsp
IVTL0055I: JavaServer Pages files verification status: Passed
Testing server using the following URL:http://saw211-2008srv2.itso.ral.ibm.com:9081/lt/ltserver?parm2=ltejb
IVTL0060I: Enterprise bean verification status: Passed
IVTL0035I: The Installation Verification Tool is scanning the C:\IBM\WebSphere\AppServer\profiles\AppSrv01\logs\server1\SystemOut.log file for errors and warnings
[6/21/12 18:55:23:936 EDT] 00000001 ComponentMeta W WSVR0174W: A duplicate component has been ignored. Ignore the Ws_JaxWsCommonContainer
[6/21/12 18:55:25:733 EDT] 00000001 WSKeyStore W CWPKI0041W: One or more key stores are using the default password.
[6/21/12 18:55:33:311 EDT] 00000001 ThreadPoolMgr W WSVR0626W: The ThreadPool setting on the ObjectRequestBroker service is deprecated.
IVTL0040I: 3 errors/warnings are detected in the C:\IBM\WebSphere\AppServer\profiles\AppSrv01\logs\server1\SystemOut.log file
IVTL0070I: The Installation Verification Tool verification succeeded.
IVTL0080I: The Installation verification is complete.
```

Creating an application server profile

This section takes you through the steps of creating the application server profile using the WebSphere Customization Toolbox.

To create the profile:

1. Start the WebSphere Customization Toolbox, and open **Profile Management Tool**.
2. Click **Create**.
3. Select **Application server** as the profile type, and click **Next**.
4. Select whether to take a typical or advanced path to install the profile:
 - If **Typical** is selected, proceed to step 8 and continue from step 13.
 - If **Advanced** is selected, continue with the following steps.
5. Select both check boxes to deploy the administrative console and the default application.

Creating an application server profile

- The second option of deploying the default application installs a default application that can be used to verify that your application server is running and serving application content.
- The default application contains a web module called DefaultWebApplication and an EJB module called Increment.
- The application includes a number of servlets that retrieve information that can be used for verification.
- For example you can try to invoke the Snoop servlet to verify if the application server is properly serving the content: <http://localhost:9080/snoop>



Profile Name and Location

Specify a profile name and directory path to contain the files for the run-time environment, such as commands, configuration files, and log files. Click **Browse** to select a different directory.

Profile name:

Profile directory:

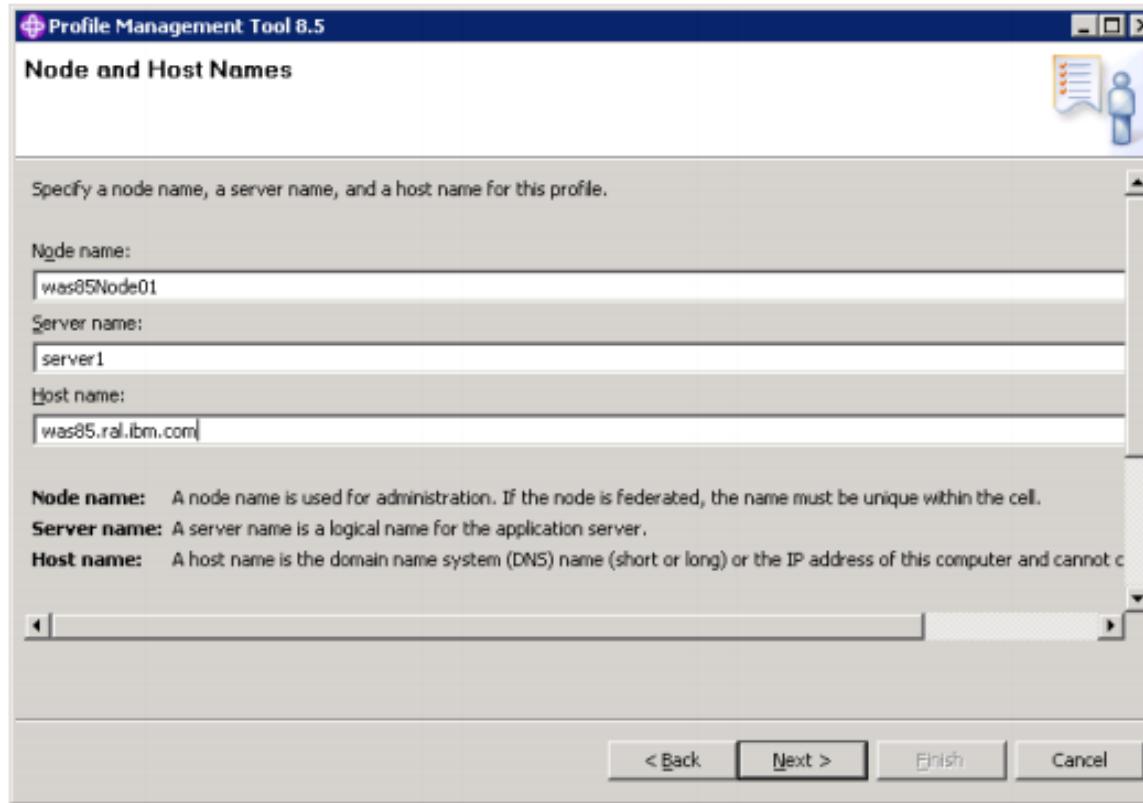
Select the performance tuning settings that most closely match the type of environment in which the application server will run. Review the information center article on performance tuning settings before choosing a setting because additional tuning still might be necessary to optimize the performance of the server for your applications.

Server runtime performance tuning setting:

Description

The standard settings are optimized for general purpose usage with conservative settings. The performance monitoring infrastructure service is enabled to gather statistics so you can further tune the server yourself.

Creating an application server profile



WebSphere Integrated Solutions Console - Mozilla Firefox

localhost https://localhost:9043.ibm/console/login.do?action=secure

WebSphere Integrated Solutions Co...

Welcome vasadmin Help | Logout IBM.

Views: All tasks

Cell=sav211-2008srv2Node01Cell, Profile=AppSrv01 Close page

Application servers

Application servers

Use this page to view a list of the application servers in your environment and the status of each of these servers. You can also use this page to change the status of a specific application server.

Preferences

Name Node Host Name Version

server1 was85Node01 was85.ral.ibm.com ND 8.5.0.0

Total 1

Done

The screenshot displays the WebSphere Integrated Solutions Console interface. The left sidebar contains a navigation tree with items such as Welcome, Guided Activities, Servers (with Server Types, WebSphere application servers, WebSphere MQ servers, and Web servers), Applications, Services, Resources, Security, Environment, System administration, Users and Groups, Monitoring and Tuning, Troubleshooting, Service integration, and UDDI. The main content area is titled "Application servers" and displays a table with one row. The table columns are Name, Node, Host Name, and Version. The single entry is "server1" under Name, "was85Node01" under Node, "was85.ral.ibm.com" under Host Name, and "ND 8.5.0.0" under Version. Above the table, there is a note: "Use this page to view a list of the application servers in your environment and the status of each of these servers. You can also use this page to change the status of a specific application server." Below the table, it says "Total 1". The top right corner shows the user "vasadmin" and links for "Help" and "Logout". The top bar also shows the URL "https://localhost:9043.ibm/console/login.do?action=secure".

Creating a deployment manager profile

To create the deployment manager profile:

1. Start the WebSphere Customization Toolbox, and open Profile Management Tool.
2. Click Create.
3. Select Management, and click Next.
4. Select Deployment manager, and click Next.

Creating an application server profile

Specify a node name, a host name, and a cell name for this profile.

Node name:

was85CellManager01

Host name:

was85.ral.ibm.com

Cell name:

was85-cell01

Creating an application server profile

- .Log in to the console, if you disabled the security login without providing credentials.
- .In the console, the following items are visible from the administrative console:
 - Deployment manager: Select **System administration** → **Deployment manager**.
 - Deployment manager node: Select **System administration** → **Nodes**.
 - The default node group: Select **System administration** → **Node groups**.
 - Cell information: Select **System administration** → **Cell** → **Local Topology**. You can see a similar topology, as illustrated

Creating an application server profile

The screenshot shows a software interface titled "Cell" with a sub-header "Cell". A descriptive text states: "Use this page to set the discovery protocol for an existing cell. A cell is a configuration concept, a way for an administrator to logically associate nodes according to whatever criteria make sense in the administrator's organizational environment." Below this, there are two tabs: "Configuration" (which is selected) and "Local Topology". The main content area displays a hierarchical tree structure under the heading "was85Cell01":

- Nodes
 - was85CellManager01 (ND 8.5.0.0)
 - Servers
 - dmar- Applications
 - Business-level applications
 - Assets
 - Clusters
- Node groups
 - DefaultNodeGroup
- Core Groups
 - DefaultCoreGroup

Creating a cell profile

Typical	Advanced
The administrative console and default application are deployed by default.	You have the option to deploy the administrative console (recommended), the default application, and the sample applications (if installed).
The profile name for the deployment manager is Dmgrxx by default, where xx is 01 for the first deployment manager profile and increments for each one created. The profile is stored in <code>install_root/profiles/Dmgrxx</code> .	You can specify the profile name and its location.

Typical	Advanced
The profile name for the federated application server and node is AppSrvxx by default, where xx is 01 for the first application server profile and increments for each one created. The profile is stored in <i>install_root/profiles/AppSrvxx</i> .	You can specify the profile name and its location.
Neither profile is made the default profile.	You can choose to make the deployment manager profile the default profile.
The cell name is <host>Cellxx. The node name for the deployment manager is <host>CellManagerxx. The node name for the application server is <host>Nodexx.	You can specify the cell name, the host name, and the profile names for both profiles.
You can enable administrative security (yes or no). If you select yes, you are asked to specify a user name and password that is given administrative authority.	
TCP/IP ports default to a set of ports not used by any profiles in this WebSphere installation instance.	You can use the recommended ports for each profile (unique to the installation). Note that there are three different configurations for deployment manager, application server, and node agent.
If installing on Windows, the deployment manager runs as a service.	If installing on Windows or Linux, you can choose whether the deployment manager runs as a service.
Does not create a web server definition.	Allows you to define an external web server to the configuration.

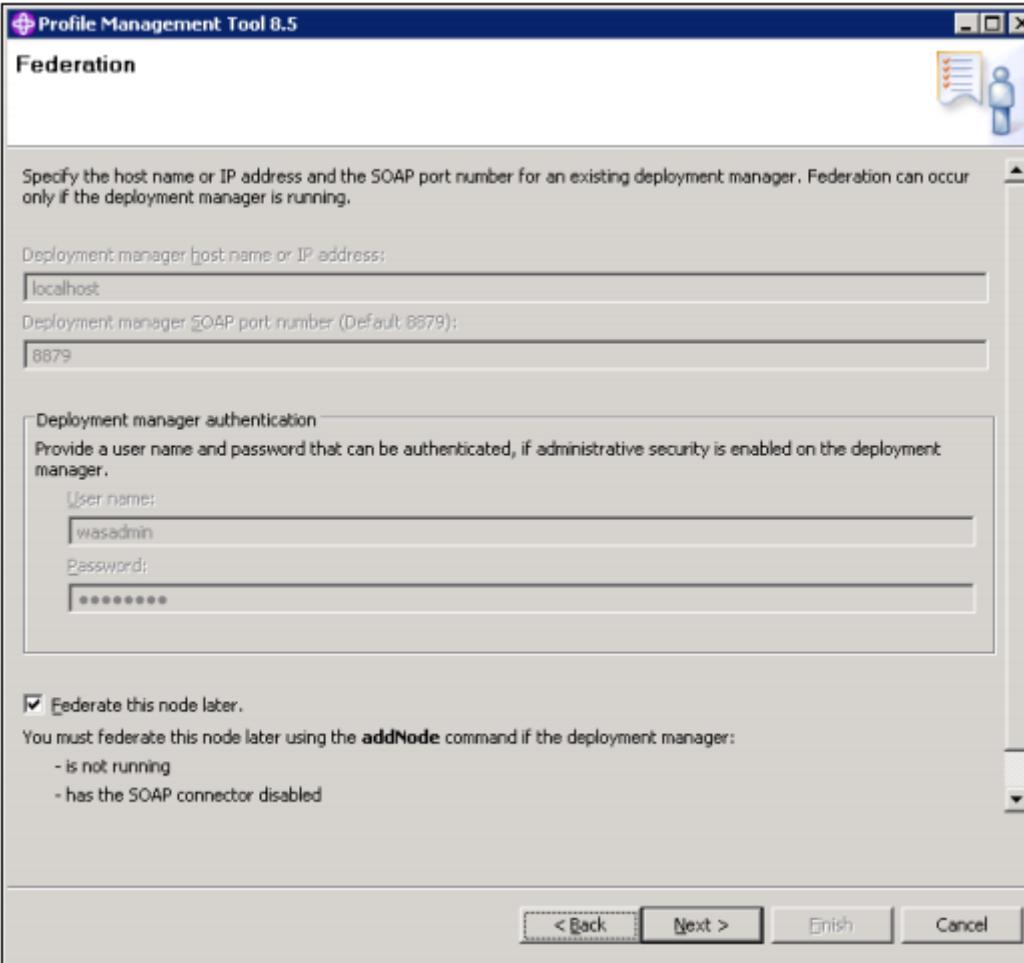
Creating a custom profile

- A custom profile defines an empty node on a system.
- The purpose of this profile is to define a node to be federated to a cell for management through a deployment manager.
- As you create the profile, you have the option to federate the node to a cell during the wizard or to simply create the profile for later federation.
- Before you can federate the custom profile to a cell, you must have a running deployment manager.

Creating a custom profile

To create the custom profile, complete the following steps:

1. Start the WebSphere Customization Toolbox, and open Profile Management Tool.
2. Click Create.
3. Select Custom profile, and then click Next.
4. Select whether to take a typical or advanced path to install the profile:
 - If Typical is selected, only proceed with steps 7, 9 and 10.
 - If Advanced is selected, continue with every following steps.



Federating nodes to a cell

- A custom profile defines a node that can be added to a cell using the addNode command.
- A stand-alone application server can also be federated to a cell with the addNode command or from the deployment manager administrative console (the administrative console invokes the addNode command on the target system).

Using the addnode command

The `addNode` command is run from the `install_root/bin` or `profile_root/bin` directory of the profile to be federated.

The most important `addNode` command parameters are:

- ▶ `dmgr_host, dmgr_port, username, password`

These parameters are used to obtain connection to the deployment manager.

- ▶ `startingport, portprops <filename>`

The new node agent is assigned a range of ports automatically. If you want to specify the ports for the node rather than taking the default, you can specify a starting port using the `startingport` parameter. The numbers are incremented from this number.

For example, if you specify 3333, the `BOOTSTRAP_ADDRESS` port will be 3333, `CSIV2_SSL_MUTUALAUTH_LISTENER_ADDRESS` will be 3334, and so on.

As an alternative, you can provide specific ports by supplying a file with the port properties.

Federating nodes to a cell

The addNode command performs the following actions:

1. Connects to the deployment manager process. This action is necessary for the file transfers performed to and from the deployment manager to add the node to the cell.
2. Attempts to stop all running application servers on the node.
3. Backs up the current stand-alone node configuration to the profile_root/config/backup/base/ directory.
4. Copies the stand-alone node configuration to a new cell structure that matches the deployment manager structure at the cell level.

Federating nodes to a cell

Federating a custom node to a cell

To federate the custom node to the cell:

1. Ensure that the deployment manager is up and running. If it is stopped, start it.
2. Go to the `profile_root/bin` directory on the system where you created the custom profile for the new node.
3. Run the `addNode` command from Example 3-1, providing your information about the deployment manager. If administrative security is enabled, use the `username` and `password` arguments on the command line to provide the deployment manager user ID and password. If you do not provide the arguments, you are prompted for them.

Federating nodes to a cell

Example 3-1 Federating node to a deployment manager cell using addNode command

```
C:\IBM\WebSphere\AppServer\profiles\Custom01\bin>addNode.bat was85.ral.ibm.com 8879 -username  
wasadmin -password passw0rd -includeapps
```

ADMU0116I: Tool information is being logged in file

```
C:\IBM\WebSphere\AppServer\profiles\Custom01\logs\addNode.log
```

ADMU0128I: Starting tool with the Custom01 profile

```
CWPKI0308I: Adding signer alias "CN=was85.ral.ibm.com, OU=Root C" to local keystore  
"ClientDefaultTrustStore" with the following SHA digest:
```

B8:3A:87:41:57:53:73:FB:B5:B3:8A:30:68:83:55:ED:06:12:BF:EB

```
CWPKI0309I: All signers from remote keystore already exist in local keystore.
```

```
ADMU0001I: Begin federation of node was85Node01 with Deployment Manager at  
was85.ral.ibm.com:8879.
```

```
ADMU0009I: Successfully connected to Deployment Manager Server:  
was85.ral.ibm.com:8879  
ADMU0507I: No servers found in configuration under:  
C:\IBM\WebSphere\AppServer\profiles\Custom01\config\cells\saw211-2008srv2Node02Cell\nodes\was85N  
ode01\servers  
ADMU2010I: Stopping all server processes for node was85Node01  
ADMU0024I: Deleting the old backup directory.  
ADMU0015I: Backing up the original cell repository.  
ADMU0012I: Creating Node Agent configuration for node: was85Node01  
ADMU0014I: Adding node was85Node01 configuration to cell: was85Cell01  
ADMU0016I: Synchronizing configuration between node and cell.  
ADMU0018I: Launching Node Agent process for node: was85Node01  
ADMU0020I: Reading configuration for Node Agent process: nodeagent  
ADMU0022I: Node Agent launched. Waiting for initialization status.  
ADMU0030I: Node Agent initialization completed successfully. Process id is:  
1752  
ADMU0505I: Servers found in configuration:  
ADMU0506I: Server name: nodeagent  
  
ADMU0308I: The node was85Node01 and associated applications were successfully  
added to the was85Cell01 cell.  
ADMU0306I: Note:  
ADMU0302I: Any cell-level documents from the standalone was85Cell01  
configuration have not been migrated to the new cell.  
ADMU0307I: You might want to:  
ADMU0303I: Update the configuration on the was85Cell01 Deployment Manager with  
values from the old cell-level documents.  
  
ADMU0003I: Node was85Node01 has been successfully federated.
```

C:\IBM\WebSphere\AppServer\profiles\Custom01\bin>

Cell

Use this page to set the discovery protocol for an existing cell. A cell is a configuration concept, a way for an administrator to logically associate nodes according to whatever criteria make sense in the administrator's organizational environment.

Configuration

Local Topology

- [was85Cell01](#)
 - [Nodes](#)
 -  [was85CellManager01 \(ND 8.5.0.0\)](#)
 - +  [Servers](#)
 -  [was85Node01 \(ND 8.5.0.0\)](#)
 -  [Servers](#)
 -  [nodeagent](#)
 - +  [Applications](#)
 -  Business-level applications
 -  Assets
 -  Clusters
 - +  [Node groups](#)
 - +  [Core Groups](#)

Federating nodes to a cell

The node is started as a result of the federation process. If it does not appear to be started in the console, you can check the status from a command window on the node system:

```
serverStatus.bat(sh) -all
```

If you find that it is not started, start it using the **startNode** command from its profile_home\bin directory:

```
startNode.bat(sh)
```

Federating nodes to a cell

Federating an application server profile to a cell

To federate an application server profile to a cell:

1. Ensure that both the target application server and the deployment manager are running.
2. Open the deployment manager administrative console, and log in with administrative privileges.
3. Click **System Administration** → **Nodes** → **Add Node**.
4. Select **Managed node**, and click **Next**.

Add Managed Node

Use this page to identify a stand-alone application server process that is running. Start the application server, if necessary, or add the node from the command line by running the `addNode` command from the bin directory of the stopped application server profile.

Node connection

* Host

* JMX connector type

* JMX connector port

Application server user name

Application server password

* Deployment manager user name

* Deployment manager password

Config URL

Options

Include applications

Include buses

Starting port

Use default

Specify

Port number

Federating nodes to a cell

- If the node you are adding runs on a Windows machine, you can register the new node agent to run as a Windows service.
- Click OK to start the profile federation.
- The federation process is similar to the process described in “Using the addnode command”.
- You can observe the state of this operation in the console window.

Federating nodes to a cell

- ▶ The old cell name for the application server is replaced in the profile directory with the cell name of the deployment manager:

profile_root/config/cells/dmgr_cell

- ▶ A new entry in the deployment manager profile directory is added for the new node:

dmgr_profile_root/config/cells/dmgr_cell/nodes/federated_node

- ▶ An entry for each node in the cell is added to the application server profile configuration. Each node entry contains the `serverindex.xml` file for the node:

profile_root/config/cells/dmgr_cell/nodes/federated_node

Creating a job manager profile

To create the job manager profile:

1. Start the WebSphere Customization Toolbox, and open **Profile Management Tool**.
2. Click **Create**.
3. Select **Management**, and click **Next**.
4. Select **Job manager**, and click **Next**.
5. Select whether to take a typical or advanced path to install the profile:
 - If Typical is selected, jump to step 9 and continue from step 13.
 - If Advanced is selected, continue with the following steps.
6. Select the option to deploy the administrative console (the default), and click **Next**.

Job manager

Use this panel to configure the job manager server.

Runtime

Configuration

General Properties

Name

* Default job expiration

 days

* Maximum database results

Job manager URL

Mail session JNDI name

Notification email sender's address

 Start components as needed**Server Infrastructure** Java and Process Management Java SDKs**Additional Properties** Ports Administration services Custom services ORB service Logging and tracing Change log detail levels Thread pools Web container transport chains

Creating an administrative agent profile

To create the administrative agent profile:

- Start the WebSphere Customization Toolbox and open Profile Management Tool.
- Click the Create button.
- Select Management, and click Next.
- Select Administrative agent, and click Next

Administrative agent

The administrative agent process can monitor and control multiple application servers on nodes that are registered with the administrative agent. You use the administrative console of the administrative agent to manage these application servers. By using a single console to administer your application servers, you reduce the overhead of running administrative services in every application server.

Runtime Configuration

General Properties

Name: adminagent

Node: was85AANode01

Start components as needed

Managed nodes

- [Nodes](#)

Server Infrastructure

- [Java SDKs](#)
- [Java\(TM\) process definition](#)

Additional Properties

- ⊕ [Ports](#)
- [Administration services](#)
- [Custom services](#)
- [ORB service](#)
- [Change log detail levels](#)
- [Diagnostic trace service](#)

Apply OK Reset Cancel

Registering nodes to an administrative agent

Example 3-2 Registering a stand-alone application server to an administrative agent

```
C:\IBM\WebSphere\AppServer\profiles\AdminAgent01\bin>registerNode.bat -profileName  
AdminAgent01 -host was85.ra1.ibm.com -profilePath  
"C:\IBM\WebSphere\AppServer\profiles\AppSrv02" -connType SOAP -port 8877 -username  
aaadmin -password aapassw0rd -nodeusername wasadmin -nodepassword passw0rd  
ADMU0116I: Tool information is being logged in file  
          C:\IBM\WebSphere\AppServer\profiles\AdminAgent01\logs\registerNode.log  
[...]  
C:\IBM\WebSphere\AppServer\profiles\AppSrv02 has been successfully registered.
```

Registering nodes to an administrative agent

The screenshot shows the WebSphere Integrated Solutions Console interface. At the top left, there's a logo for "WebSphere, software". The main title "WebSphere Integrated Solutions Console" is centered above a large, semi-transparent graphic of three stylized human figures (blue, yellow, green) surrounding a large yellow key icon. Below the title, the text "Select a node to administer" is displayed next to a dropdown menu. The dropdown contains three items: "was85AANode01" (selected), "was85AANode01", and "saw211-2008srv2Node02". At the bottom left is the IBM logo. A copyright notice at the bottom right states: "Licensed Materials - Property of IBM (c) Copyright IBM Corp. 1997, 2011 All Rights Reserved. IBM, the IBM logo, ibm.com and WebSphere are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at [Copyright and trademark information](#)".

Registering nodes to an administrative agent

Cell=saw211-2008srv2Node01Cell, Profile=AppSrv02

Application servers

Use this page to view a list of the application servers in your environment and the status of each of these servers. You can also use this page to change the status of a specific application server.

+ Preferences

New... Delete Templates... Start Stop Restart ImmediateStop Terminate

Select Name ▲ Node ▲ Host Name ▲ Version ▲ Status ▲

You can administer the following resources:

<input type="checkbox"/>	server1	saw211-2008srv2Node02	saw211-2008srv2	ND 8.5.0.0	
Total 1					

Deregistering a node from the administrative agent

To deregister a node from the administrative agent, simply run the `deregisterNode` command from the `adminAgnt_profile_root/bin` directory, as shown on Example 3-3.

Example 3-3 Deregistering a stand-alone application server from an administrative agent

```
C:\IBM\WebSphere\AppServer\profiles\AdminAgent01\bin>deregisterNode.bat -connType SOAP -port 8877 -profilePath "C:\IBM\WebSphere\AppServer\profiles\AppSrv02" -username wasadmin -password passw0rd
```

Registering administrative nodes with a job manager

Registering administrative agents

- To register administrative agents with a job manager:
 1. Log on to the administrative agent node
 2. Click System administration→Administrative agent → Nodes.
 3. Select the node that you want to register with the job manager, as illustrated in Next Figure, and then click Register with Job Manager

Registering administrative nodes with a job manager

Administrative agent

[Administrative agent](#) > Nodes

This panel lists all the managed nodes registered to this administrative agent. To register a managed node with a job manager, select a managed node in the collection and click Register with Job Manager. To unregister a managed node from a job manager, select a managed node in the collection and click Unregister from a Job Manager.

+ Preferences

[Register with Job Manager](#) [Unregister from a Job Manager](#)

Select	Name	Unique ID
<input checked="" type="checkbox"/>	saw211-2008srv2Node02	AppSrv02-BASE-a52a19ad-0238-4246-adf2-0c40cc355a04

Total 1

Administrative agent

Administrative agent > Nodes > Register with Job Manager

Register a managed node with job manager. If you are using the administrative agent administrative console, you register a node that is already registered to the administrative agent. If you are using the deployment manager administrative console, you register the deployment manager. Specify an alias if the managed node name is in use by another node. Use the administrative host port of the job manager, which defaults to 9943 when security is enabled.

General Properties

* Managed node name

Alias

Host name

Port

User name

Password

Confirm password

Registering administrative nodes with a job manager

Targets

Targets

Use this panel to find targets for jobs. Either select a saved search, create a new search, or find targets by name.

+ Find

New Host... Display Resources * Delete Host

Select	Target name	Version
<input type="checkbox"/>	<u>saw211-2008srv2Node02</u>	ND 8.5.0.0 XD 8.5.0.0 WXDOP 8.5.0.0

Total 1

Registering administrative nodes with a job manager

Registering deployment managers

To register a deployment manager node with a job manager:

1. Log in to the deployment manager administrative console, and click System Administration → Deployment manager.
2. Under Additional Properties, click Job managers.
3. Click Register with Job Manager.
4. Enter the information required to connect to the job manager, including the host name, port, user ID, and password. Click OK

Managing profiles with the command line

The **manageprofiles** command is in the *install_root/bin* directory. To get more information about using this command, type:

```
manageprofiles -help
```

To explore all of the functions of this command, refer to the following information center website:

http://pic.dhe.ibm.com/infocenter/wasinfo/v8r5/topic/com.ibm.websphere.nd.multiplatform.doc/ae/rxml_manageprofiles.html

Managing profiles with the command line

Listing profiles

To list all created profiles, run the command shown in Example 3-4.

Example 3-4 Listing profiles

```
C:\IBM\WebSphere\AppServer\bin>manageprofiles.bat -listProfiles  
[Dmgr01, AppSrv01, Custom01, AdminAgent01, JobMgr01, AppSrv02]
```

Creating profiles from templates

The following profiles are defined by default for the WebSphere Application Server v9:

- Default (for application server profiles)
- Management (for deployment manager, job manager, and administrative agent profiles)
- Managed (for custom profiles)
- Cell (for cell profiles)

Creating profiles from templates

Example 3-5 Creating deployment manager profile with the manageprofiles command

```
manageprofiles.bat -create -templatePath  
c:\IBM\WebSphere\AppServer\profileTemplates\management -serverType  
DEPLOYMENT_MANAGER -profileName Dmgr02 -profilePath  
c:\IBM\WebSphere\AppServer\profiles\DMgr02 -enableAdminSecurity true  
-adminUserName wasadmin -adminPassword passw0rd -cellName myHostCell01 -nodeName  
myHostCellManager01
```

Creating profiles from templates

The log files that are created when you run the `manageprofiles` command are located in:
install_root/logs/manageprofile/profilename_action.log

For example:

`C:\IBM\WebSphere\AppServer\logs\manageprofiles\Dsgr02_create.log`

Additional log files are created in the following directory:

install_root/logs/manageprofile/profile_name/

For example:

`C:\IBM\WebSphere\AppServer\logs\manageprofiles\Dsgr02`

Creating profiles with non-default ports

During profile creation using the `manageprofiles` command, you can accept the default port values, or you can specify your own port settings. If you want to specify ports, you can do so in any of the following ways:

- Specify the ports by pointing to a file that contains the port values
- Specify the starting port value
- Specify the default port values

Creating profiles with non-default ports

Example 3-6 Example contents of portdef.props file

```
IPC_CONNECTOR_ADDRESS=9636
CSIV2_SSL_SERVERAUTH_LISTENER_ADDRESS=9416
XDAGENT_PORT=7063
OVERLAY_UDP_LISTENER_ADDRESS=11011
WC_adminhost=9064
DataPowerMgr_inbound_secure=5556
DCS_UNICAST_ADDRESS=9357
BOOTSTRAP_ADDRESS=9812
SAS_SSL_SERVERAUTH_LISTENER_ADDRESS=9417
SOAP_CONNECTOR_ADDRESS=8884
CELL_DISCOVERY_ADDRESS=7279
ORB_LISTENER_ADDRESS=9103
STATUS_LISTENER_ADDRESS=9421

CSIV2_SSL_MUTUALAUTH_LISTENER_ADDRESS=9418
OVERLAY_TCP_LISTENER_ADDRESS=11012
WC_adminhost_secure=9047
```

Creating profiles with non-default ports

Example 3-7 Creating a stand-alone profile using the startingPort parameter

```
C:\IBM\WebSphere\AppServer\bin>manageprofiles.bat -create -templatePath  
c:\IBM\WebSphere\AppServer\profileTemplates\default -profileName AppSrv05  
-profilePath c:\IBM\WebSphere\AppServer\profiles\AppSrv05 -startingPort 22222  
-cellName test5Cell01 -nodeName test5Node01
```

Deleting profiles

- ▶ If you are removing an application server profile that has not been federated to a cell:
 - a. Stop the application server.
 - b. Delete the profile using the following command:
`manageprofiles -delete -profileName profile_name`
 - c. Clean the profile registry using the following command:
`manageprofiles -validateAndUpdateRegistry`
 - d. Delete the *profile_root* directory.

Deleting profiles

If you are removing a custom profile or application server profile that is federated to a cell:

- a. Stop the profile server instance on this node.
- b. Remove the node from the cell using the administrative console or the `removeNode` command. This will not delete the node but only restore it to its pre-federated configuration.
- c. Delete the profile using the following command:

```
manageprofiles -delete -profileName profile_name.
```

- d. Clean the profile registry using the following command:

```
manageprofiles -validateAndUpdateRegistry
```

- e. Delete the `profile_root` directory.

Deleting profiles

- ▶ If you are removing a deployment manager profile:
 - a. Remove any nodes federated to the cell using the administrative console or the **removeNode** command. This will not delete the node but only restore it to its pre-federated configuration.
 - b. Stop the deployment manager.
 - c. Delete the deployment manager profile using the following command:
`manageprofiles -delete -profileName profile_name`
 - d. Clean the profile registry using the following command:
`manageprofiles -validateAndUpdateRegistry`
 - e. Delete the *profile_root* directory.

Deleting profiles

- Example shows the deletion of the AppSrv05 stand-alone profile and cleaning of the profile registry

Example 3-8 Deleting a profile using manageprofiles

```
C:\IBM\WebSphere\AppServer\bin>manageprofiles.bat -delete -profileName AppSrv05  
INSTCONFSUCCESS: Success: The profile no longer exists.
```

```
C:\IBM\WebSphere\AppServer\bin>manageprofiles -validateAndUpdateRegistry  
[]
```

Using the manageprofiles interactive utility

After you download the tool, you must unpack its content in the `install_root/bin` directory. After you unpack it, you can use two scripts to run it:

- `run_manageprofilesInteractive.bat` for Windows operating systems
- `run_manageprofilesInteractive.sh` for UNIX operating systems

Example 3-9 Listing profiles using the interactive manageprofiles tool

```
C:\IBM\WebSphere\AppServer\bin>run_manageprofilesInteractive.bat
C:\IBM\WebSphere\AppServer\bin>CALL
"C:\IBM\WebSphere\AppServer\bin\setupCmdLine.bat"
manageprofilesInteractive-v70 V0.6.6 ~ 2011.05.10/Windows Server 2008 R2
```

```
-----
MANAGEPROFILES - Command Menu
-----
```

- 1 create
- 2 augment
- 3 delete
- 4 unaugment
- 5 unaugmentAll
- 6 deleteAll
- 7 listProfiles
- 8 listAugments
- 9 backupProfile
- 10 restoreProfile
- 11 getName
- 12 getPath
- 13 validateRegistry

```
13 validateRegistry
14 validateAndUpdateRegistry
15 getDefaultName
16 setDefaultName
17 response
18 help
Select number [press "q" to quit]: 7
listProfiles
-----
LISTPROFILES command summary:
-----
Press "b" to go back and make changes or "c" to continue: c
Press "q" to quit, "r" add to response file, or "c" to run the command: c
-----
manageprofiles.bat -listProfiles
Added command to C:/IBM/WebSphere/AppServer/logs/manageprofilesInteractive.log
You may check C:/IBM/WebSphere/AppServer/logs/manageprofiles/listProfiles.log for
command status.

[Dmgr01, AppSrv01, Custom01, AdminAgent01, JobMgr01, AppSrv02, Dmgr02]

Elapse time: 4.954 seconds
Done!
```

6. Administration consoles and commands



Administration consoles and commands

In this lesson we cover the following topics:

- Introducing the WebSphere administrative consoles
- Securing the administrative console
- Job manager console
- Using command-line tools

Introducing the WebSphere administrative consoles

- The WebSphere Integrated Solutions Console, referred to as the administrative console, is a graphical, web-based tool that is used to configure and manage the resources within your WebSphere environment.
- The administrative console application name is `isclite`, and it is a system application.
- This means that the application is central to a WebSphere Application Server product, and it is installed when the product is installed.

Finding the URL for the console

Each application server process that hosts the administrative console has two admin ports that are used to access the administrative console. These ports are:

- ▶ WC_adminhost
- ▶ WC_adminhost_secure (for SSL communication)

These ports are assigned at profile creation time. If you do not know which is the port number for the administrative console, look in the following location:

- ▶ In case of a Network Deployment environment: *profile_home/properties/portdef.props*
- ▶ In case of a stand-alone environment:
profile_home/config/cells/cell_name/nodes/node_name/serverindex.xml

Use the following URL to access the administrative console using the non-SSL port:

`http://<hostname>:<WC_adminhost>/ibm/console`

Use the following URL to access the administrative console using the SSL port:

`https://<hostname>:<WC_adminhost_secure>/ibm/console`

If administrative security is enabled, you are automatically redirected to the secure port.

Starting and accessing the consoles

Administrative console in a stand-alone server environment

Example 6-1 Example output for the serverStatus command in a Windows environment

```
D:\was85\IBM\WebSphere\AppServer\profiles\AppSrv_85_02\bin>serverstatus.bat  
-all  
ADMU0116I: Tool information is being logged in file  
  
D:\was85\IBM\WebSphere\AppServer\profiles\AppSrv_85_02\logs\serverStatus.log  
ADMU0128I: Starting tool with the AppSrv_85_02 profile  
ADMU0503I: Retrieving server status for all servers  
ADMU0505I: Servers found in configuration:  
ADMU0506I: Server name: server_85_2  
ADMU0509I: The Application Server "server_85_2" cannot be reached. It appears  
to be stopped.
```

Starting and accessing the consoles

2. If the status of your server is not STARTED, start it with the following command:

```
startServer.bat(sh) server_name
```

3. Open a web browser to the URL of the administrative console, for example:

```
https://<hostname>:9050/ibm/console
```

<hostname> is the host name for the machine running the application server. You can always use the IP of the machine instead of the <hostname>.

4. The administrative console loads and you are prompted to log in.

Starting and accessing the consoles

Administrative console in a Network Deployment environment

To access the administrative console:

1. Make sure that the deployment manager (dmgr) is running by entering the following command:

```
serverStatus.sh -all
```

2. If the dmgr status is not STARTED, start it with the following command:

```
startManager.sh
```

3. Open a web browser to the URL of the administrative console, for example:

```
https://<hostname>:9050/admin
```

<hostname> is the host name for the machine running the deployment manager. You can always use the IP of the machine instead of the <hostname>.

4. The administrative console loads and you are prompted to log in.

Starting and accessing the consoles

Accessing the job manager console

1. Make sure that the job manager process (jobmgr) is running by using the following command:

```
serverStatus.sh -all
```

2. If the status of jobmgr is not STARTED, start it with the following command:

```
startServer.sh jobmgr
```

3. Open a web browser to the URL of the administrative console, for example:

```
http://<hostname>:9960/ibm/console
```

4. The administrative console loads and you are prompted to log in.

Starting and accessing the consoles

Accessing the administrative agent administrative console

1. Make sure that the administrative agent process (adminagent) is running by using the following command:

```
serverStatus.sh -all
```

2. If the status of adminagent process is not STARTED, start it with the following command:

```
startServer.sh adminagent
```

3. Open a web browser to the URL of the administrative console, for example:

```
http://<hostname>:9060/ibm/console
```

If you have nodes registered with the administrative agent, you are prompted to select which node to administer (including the administrative agent).

4. The administrative console loads and you are prompted to log in.

Logging into an administrative console

- When you access the administrative console, you need to log in by providing a user ID.
- If WebSphere administrative security is enabled, you also need to provide a password.
- The user ID specified during login is used to track configuration changes made by the user.
- This allows you to recover from unsaved session changes made under the same user ID, for example, when a session times out or the user closes the web browser without saving.

Logging into an administrative console

WebSphere administrative security also affects the log in procedure. The following scenarios relate how to maneuver in either security state:

- If WebSphere administrative security is not enabled
- If WebSphere administrative security is enabled



WebSphere Integrated Solutions Console

Another user is currently logged in with the same user ID. Select from the following options:

- Log out the other user with the same user ID. You can recover changes made during the other user's session.
- Return to the Login page and enter a different user ID.

OK



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Recovering from an interrupted session

When unsaved changes for the user ID exist during login, you are prompted to complete one of the following actions:

- Work with the master configuration
- Recover changes made in a prior session

Recovering from an interrupted session

As you work with the configuration, the original configuration file and the new configuration file are stored in a folder at:

<profile_home>/wstemp

If you log out of the administrative console and the session is correctly ended, the session directories in the wstemp folder are automatically removed. If the session is interrupted, for example, by closing the web browser instead of logging out, the directories remain in the file system.

Installing and uninstalling the administrative console application

- You can install the administrative console during profile creation or after you create a profile.
- You can uninstall any administrative console that you install.
- Unfederated application servers, administrative agents, deployment managers, and job managers can have their own administrative consoles.
- If you plan to install the administrative console, a profile that does not have an administrative console installed must exist.

Installing and uninstalling the administrative console application

Example 6-2 Installing the administrative console with the Jython script deployConsole.py

```
D:\was85\IBM\WebSphere\AppServer\profiles\dmgr_85_01\bin>wsadmin -lang jython  
-c AdminControl.getNode() -user admin85 -password admin85 -f  
"D:\was85\IBM\WebSphere\AppServer\bin\deployConsole.py" install
```

Example 6-3 Uninstalling the administrative console with the Jython script deployConsole.py

```
D:\was85\IBM\WebSphere\AppServer\profiles\dmgr_85_01\bin>wsadmin -lang jython  
-c AdminControl.getNode() -user admin85 -password admin85 -f  
"D:\was85\IBM\WebSphere\AppServer\bin\deployConsole.py" remove
```

Administrative console application logs

1. Click **Troubleshooting** → **Logs and trace**.
2. Select the deployment manager server name.
3. Click **Change log detail levels**.
4. In the Configuration tab, expand the **Components and Groups** list.
5. Expand the ***[All Components]** list, and locate the `com.ibm.isclite.*` component.
6. Select the required log detail level for this component or its sub-components.
7. Save the changes, and restart the deployment manager server process.

[Logging and tracing](#) > [dmgr](#) > Change log detail levels

Use log levels to control which events are processed by Java logging. Click Components to specify a log detail level for individual components, or click Groups to specify a log detail level for a predefined group of components. Click a component or group name to select a log detail level. Log detail levels are cumulative; a level near the top of the list includes all the subsequent levels.

Configuration

Runtime

General Properties

Change log detail levels

- Disable logging and tracing of potentially sensitive data (WARNING: This might cause the log detail level setting to be modified when it is applied on the server.)

Select components and specify a log detail level. Log detail levels specified here will apply to the entire server. Expand Components and Groups and click Components to specify a log detail level for individual components, or click Groups to specify a log detail level for a predefined group of components. Click a component or group name to select a log detail level. Log detail levels are cumulative.

*=info

Components and Groups

Components

Groups

- com.ibm.isclite.*
 - No Logging
 - Messages Only
 - All Messages and Traces
 - Message and Trace Levels ►
- com.ibm.isclite.deploy.*
- com.ibm.isclite.platform.*
- com.ibm.isclite.portlet.*
- com.ibm.isclite.runtime.*
- com.ibm.isclite.service.*
- com.ibm.isclite.util.*

Changing the administrative console session timeout

- The idle period, before the administrative console session expires, is referred to as session timeout.
- The default session timeout value for the administrative console is 15 minutes.
- The timeout value can be modified by using a JACL script that is available at the information center.

The graphical interface

The WebSphere administrative consoles have the same layout pattern. In each administrative console, you can find the following main areas:

- Banner
- Navigation tree
- Work area, including the messages and help display areas

Administrative console application logs

The screenshot shows the WebSphere administrative console interface. The left sidebar contains a navigation tree with categories like Welcome, Guided Activities, Servers, Clusters, Applications, Jobs, Services, Resources, Runtime Operations, Security, Operational policies, Environment, System administration, Users and Groups, Monitoring and Tuning, Troubleshooting, Service integration, and UDDI. A 'Navigation Tree' button is highlighted.

The main content area displays the 'WebSphere application server clusters' page. At the top, there is a banner with the text 'Cell=alix1_Cell_85_01, Profile=dmgr_85_01'. Below the banner, there is a 'Messages' section with a warning message: 'Changes have been made to your local configuration. You can: Save directly to the master configuration. Review changes before saving or discarding.' It also mentions an option to synchronize configuration across multiple nodes after saving. A note states that the server may need to be restarted for changes to take effect.

The 'Work Area' contains a table for managing resources. The table has columns for Select, Name, and Status. One row is shown: 'WAS 85 alix cluster' with a status of 'Up'. The table summary at the bottom says 'Total 1'.

On the right side, there is a 'Help Area' containing links for Field help, Page help, and Command Assistance. There is also a 'Messages' button.

Administrative console application logs

Banner

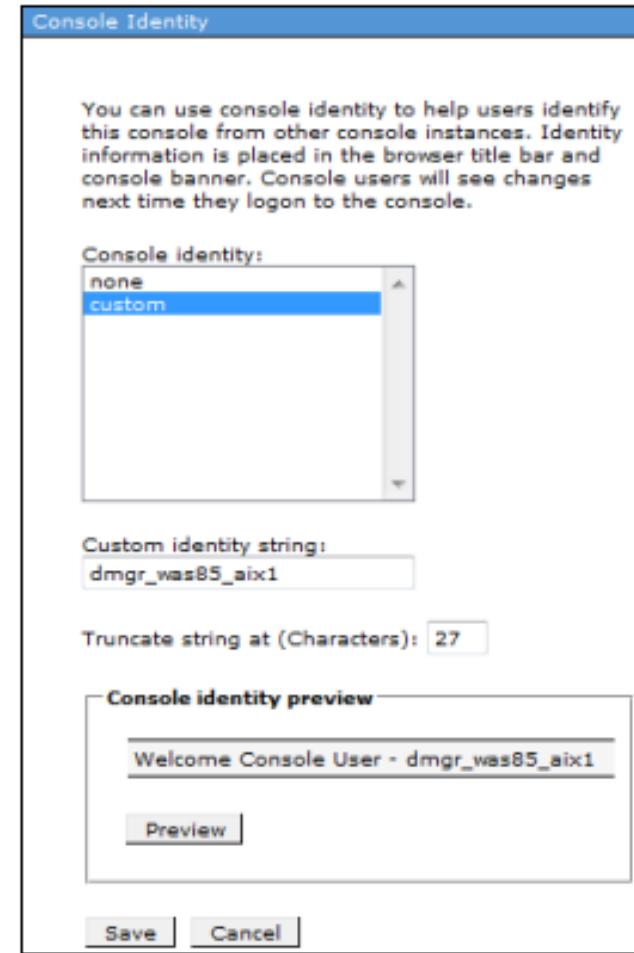
The banner is the horizontal bar near the top of the administrative console. It includes a greeting to the user who is logged in. The banner also provides the following actions:

- Logout logs you out of the administrative console session and displays the login page.
- If you changed the administrative configuration since last saving the configuration to the master repository, the Save page displays before returning you to the login page. Click Save to save the changes

Console identity

To customize the banner:

- click System → administration Console Identity.
- Select Custom, and enter the identity string



Administrative console application logs

Navigation tree

- The navigation tree on the left side of the administrative console offers links for you to view, select, and manage components.
- Figure shows the navigation tree.



Administrative console application logs

Breadcrumb trail

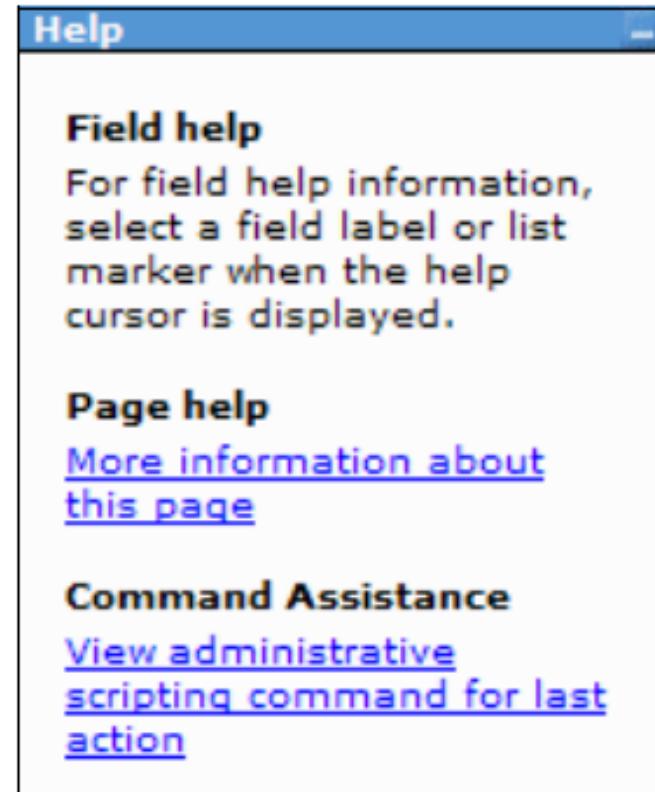
The screenshot shows the 'WS-Security bindings' administrative interface. The breadcrumb trail at the top indicates the current path: 'WS-Security bindings > WS Security rq_consumer1 > Key locators'. A red box highlights this path. Below the breadcrumb, a descriptive text explains that it specifies key locator configurations for signature and encryption, mentioning customization of key locator classes and the default implementation retrieving keys from a keystore. There is a 'Preferences' link and standard navigation buttons ('New...', 'Delete', etc.). A table lists one key locator entry: 'key locator1' with class 'com.ibm.wssepi.wssecurity.keyinfo.KeyStoreKeyLocator'. The total count is shown as 'Total 1'.

Select	Key locator name	Key locator class name
<input type="checkbox"/>	key locator1	com.ibm.wssepi.wssecurity.keyinfo.KeyStoreKeyLocator

Total 1

Administrative console application logs

Help area



The screenshot shows a help window with a blue header bar containing the word "Help". The main content area is white and contains three sections: "Field help", "Page help", and "Command Assistance". Each section has a bold title and a descriptive paragraph or link below it.

Field help
For field help information, select a field label or list marker when the help cursor is displayed.

Page help
[More information about this page](#)

Command Assistance
[View administrative scripting command for last action](#)

Setting console preferences

Console preferences

Specify user preferences for the administrative console workspace.

Turn on workspace automatic refresh

No confirmation on workspace discard

Use default scope

Show the help portlet

Enable command assistance notifications

Log command assistance commands

Synchronize changes with Nodes

[Bidirectional support options](#)

Administrative console application logs

To set administrative console preferences, click System administration

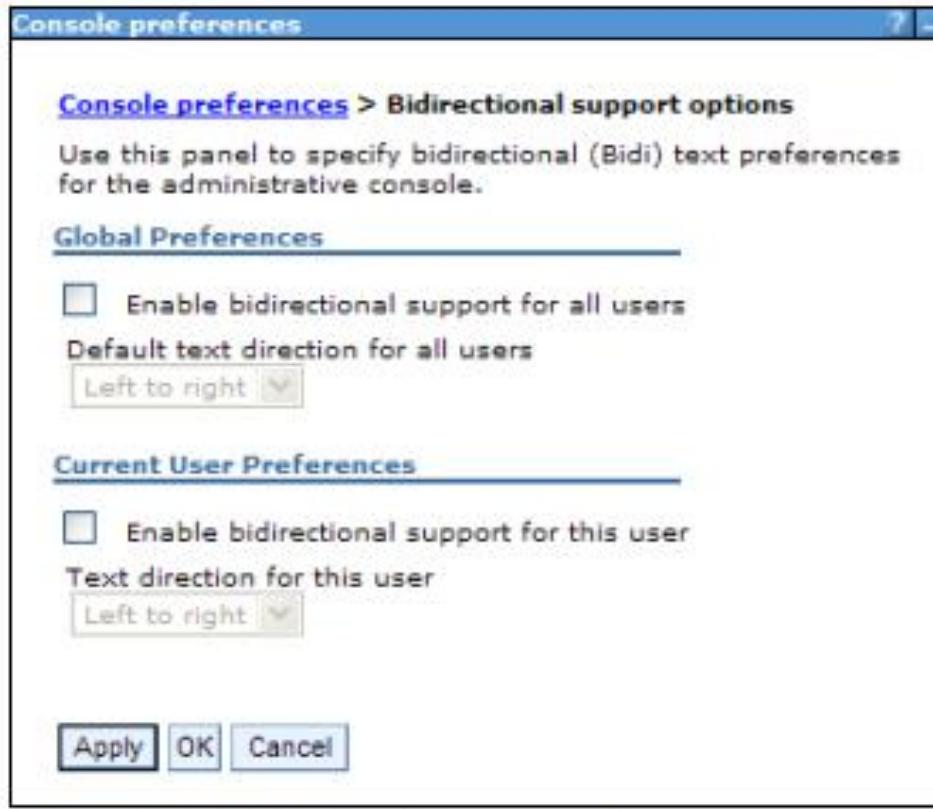
- Console Preferences in the navigation tree. You have the following options: Turn on WorkSpace Auto-Refresh specifies that the view automatically refreshes after a configuration change.
- If it is not selected, you must re-access the page to see the changes.

Administrative console application logs

- When you select this option, script commands matching actions you take in the administrative console are logged to the following location:

`profile_root/logs//commandAssistanceJythonCommands_.log`

Administrative console application logs



Administrative console resources scopes

WebSphere Variables

WebSphere Variables

Use this page to define substitution variables. Variables specify a level of indirection for some system-defined values, such as file system root directories. Variables have a scope level, which is either server, node, cluster, or cell. Values at one scope level can differ from values at other levels. When a variable has conflicting scope values, the more granular scope value overrides values at greater scope levels. Therefore, server variables override node variables, which override cluster variables, which override cell variables.

Scope: Cell=aix1_Cell_85_01, Node=aix1_CellManager_85_01, Server=dmgr

Show scope selection drop-down list with the all scopes option

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=aix1_CellManager_85_01, Server=dmgr

Preferences

New... Delete

Select Name Value Scope

You can administer the following resources:

Select	Name	Value	Scope
<input type="checkbox"/>	JAVA_HOME	<code>#{JAVA_LOCATION_1.7_64}</code>	Node=aix1_CellManager_85_01,Server=dmgr
<input type="checkbox"/>	SERVER_LOG_ROOT	<code>#{LOG_ROOT}/dmgr</code>	Node=aix1_CellManager_85_01,Server=dmgr
<input type="checkbox"/>	WAS SERVER NAME	dmgr	Node=aix1_CellManager_85_01,Server=dmgr

Total 3

Administrative console application logs

Selecting a scope

- The scope level determines which applications or application servers see and use that configuration.
- The scope setting is available for all resource types, WebSphere variables, shared libraries, and name space bindings.

Administrative console application logs

Scope levels

- Configuration information is defined at the following levels: cell, cluster, node, server, and application. Here, we list these scopes in overriding sequence. Because you see application scope first, anything defined at this scope overrides any conflicting configuration you might find in the higher-level scopes:
- Resources and variables scoped at the application level apply only to that application. Resources and variables are scoped at the application level by defining them in an enhanced EAR.

Administrative console application logs

Configuration information is stored in the repository directory that corresponds to the scope. For example, if you scope a resource at the node level, the configuration information for that resource is in:

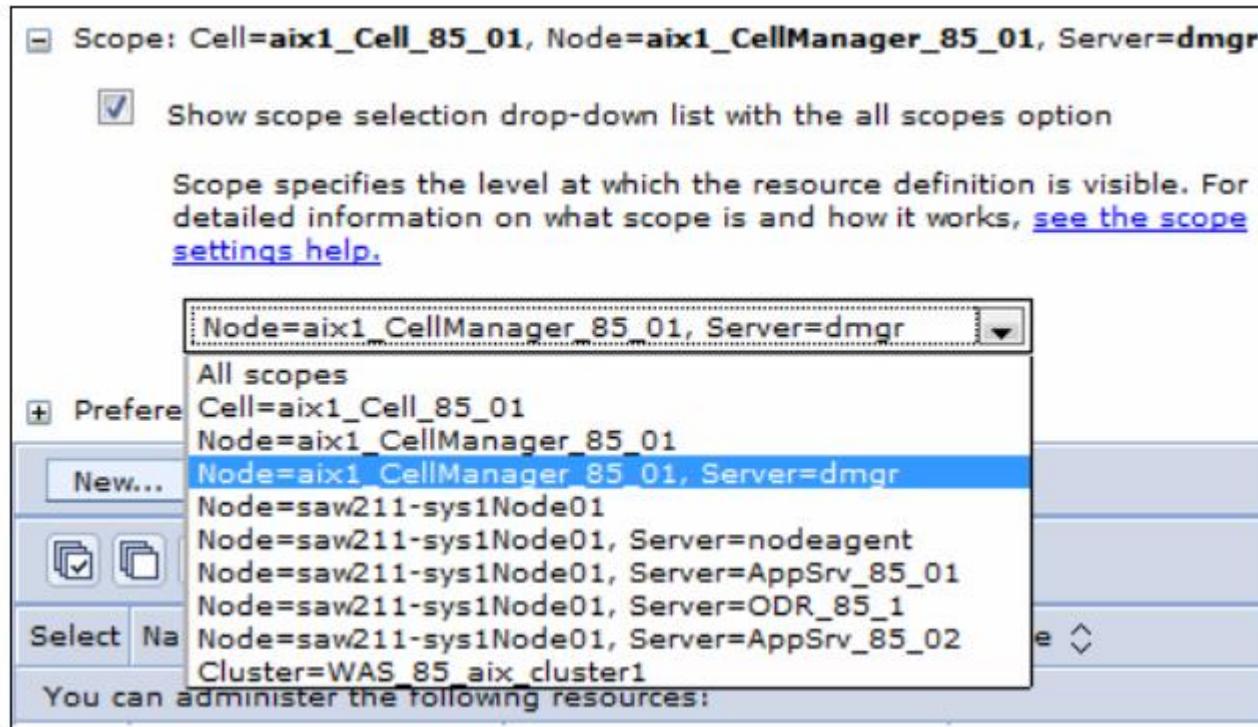
`<profile_home>/config/cells/cell_name/nodes/<node>/resources.xml`

If you scoped that same resource at the cell level, the configuration information for that resource is in:

`<profile_home>/config/cells/cell_name/resources.xml`

Administrative console application logs

Setting scope levels in the administrative console



Administrative console application logs

Scope: Cell=aix1_Cell_85_01, Node=aix1_CellManager_85_01, Server=dmgr

Show scope selection drop-down list with the all scopes option

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](#).

Cell
aix1_Cell_85_01

Node
aix1_CellManager_85_01 [Browse Nodes](#)

Cluster
[Browse Clusters](#)

→ Server
dmgr [Browse Servers](#)

[Apply](#)

Administrative console application logs

- The scope is set to the lowest level entry you select (a red arrow to the left of the field indicates the current scope).
- To move to a higher scope, simply clear the lower field.
- For example, if you select a server as the scope level and want to change the scope to the node level, clear the server field, and click Apply.

Administrative console application logs

Setting preferences for viewing the administrative console page

- After selecting a task and a scope, the administrative console page shows a collection table with all of the objects created at that particular scope.
- You can change the list of items you see in this table by using the filter and preference settings.

Preferences

Maximum rows

20

Retain filter criteria

Show items at the following authorization group level:

All Roles

Show built-in resources

Apply

Reset

New Delete



Select Name ▲

Scope ▲

Description ▲

To filter the following table, select the column by which to filter, then enter filter criteria (wildcards: *, ?, %).

Filter

Name

Search terms:

*

Go

You can administer the following resources:



[Derby JDBC Provider](#)

Node=NDNodeB,Server=NDServerB1

Derby embedded non-XA
JDBC Provider

Administrative console application logs

The screenshot shows a search interface for application logs. At the top, there are 'New' and 'Delete' buttons. Below them is a toolbar with icons for selecting, filtering, and sorting. A red arrow points from the text 'Clear the filter' to the clear icon in the toolbar. Another red arrow points from the text 'Set a filter' to the dropdown menu under the 'Filter' column header. The 'Name' column is highlighted with a red arrow. The search bar contains the filter criteria '*Derby*'. A red arrow also points to the dropdown menu in the search bar, which lists 'Name', 'Scope', and 'Description'. The main area displays a table with columns for Select, Name, Scope, and Description. One row is visible, showing 'Derby JDBC Provider' with Node=NDNodeB, Server=NDServerB1 and Derby embedded non-XA JDBC Provider.

Select	Name	Scope	Description
<input type="checkbox"/>	Derby JDBC Provider	Node=NDNodeB,Server=NDServerB1	Derby embedded non-XA JDBC Provider

To filter the following table, select the column by which to filter, then enter filter criteria (wildcards: *, ?, %).

Filter

Search terms: *Derby*

Go

Name

Name
Scope
Description

You can administer the following resources:

[Derby JDBC Provider](#) Node=NDNodeB,Server=NDServerB1 Derby embedded non-XA JDBC Provider

Administrative console application logs

When you click the Show Filter Function icon, a new area appears at the top of the table, allowing you to enter filter criteria. To filter items:

1. Select the column to filter on, for example, in Figure , the display table has three columns from which to choose. Your options vary depending on the type of item you are filtering.
2. Enter the filter criteria. The filter criteria is case sensitive and wild cards can be used. In our example, to see only providers with names starting with “S”, select the **Name column** to filter on, and enter S* as the filter.
3. Click **Go**.
4. After you set the filter, click the **Show Filter** icon again to remove the filter criteria from the view. You still have a visual indication that the filter is set at the top of the table.

Administrative console application logs

Updating existing items

To edit the properties of an existing item:

1. Select the category and type in the navigation tree, for example, select **Servers** → **Server Types** → **WebSphere application servers**.
2. A list of the items of that type, in the scope specified, are listed in a collection table in the workspace area. Click an item in the table. This action opens a detail page for the item.
3. In some cases, you see a Configuration tab and a Runtime tab on this page. In others, you only see a Configuration tab.

[WebSphere application server clusters](#) > WAS_85_aix_cluster1

Use this page to change the configuration settings for a cluster. A server cluster consists of a group of application servers. If one of the application servers that is a member of the cluster fails, requests are routed to other members of the cluster.

[Reports](#)[Operations](#)[Runtime](#)[Configuration](#)[Local Topology](#)

General Properties

* Cluster name

Bounding node group name

 Prefer local Enable failover of transaction log recovery[Apply](#)[OK](#)[Reset](#)[Cancel](#)

Cluster messaging

■ [Messaging engines](#)

Communications

■ [Communications Enabled Applications \(CEA\)](#)

Additional Properties

⊕ [Cluster members](#)

■ [Backup cluster](#)

■ [Dynamic workload management \(DWLM\)](#)

■ [Endpoint listeners](#)

■ [Security domain](#)

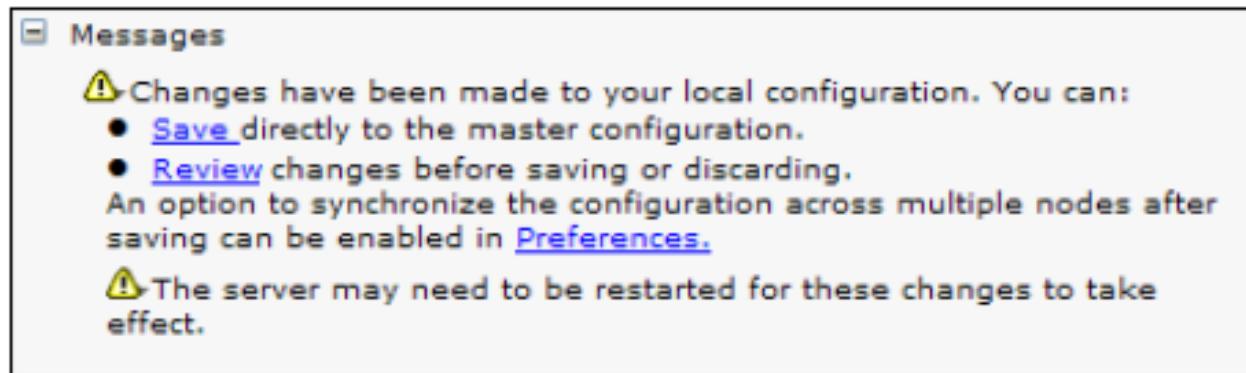
■ [Web server plug-in cluster properties](#)

Administrative console application logs

- A Local Topology tab is sometimes displayed and shows the topology that is currently in use for this administrative object.
- The detail page provides fields for configuring or viewing the more common settings and links to configuration pages for additional settings.

Administrative console application logs

- As soon as you save changes to your workspace, you will see a message in the Messages area reminding you that you have unsaved changes, as shown in Figure



Adding new items

To create new instances of most item types:

1. Select the category, and type in the navigation tree.
2. Click Scope. (When creating a new item, you cannot click the All option for scope.)
3. Click the New button above the collection table in the workspace
4. Click Save in the task bar or in the Messages area when you are finished

Removing items

To remove an item:

1. Find the item.
2. Select the item in the collection table by selecting the box next to it.
3. Click the Delete button above the collection table in the workspace.
4. If asked whether you want to delete it, click OK.
5. Click Save in the Messages area when you are finished.

Starting and stopping items

To start or stop an item using the administrative console:

1. Select the category and type in the navigation tree.
2. Select the item in the collection table by selecting the box next to it.
3. Click Start or Stop. The collection table shows the status of the item, as shown in Next Figure

Starting and stopping items

For example, to start a specific application server in a distributed server environment, click **Servers → All Servers**. Select the **box** beside the resource that you want, and click **Start**.

Middleware servers

Use this page to view a list of all middleware servers such as WebSphere Application Server, generic server, proxy server, ODR, etc. in your environment and the status of each of these servers. You can also use this page to change the status of a specific application server.

Preferences

New... Delete Templates... Start Stop Terminate Submit Action Select mode Set mode

Select	Name	Node	Cluster Name	Status	Maintenance mode	Version	Type	Action
You can administer the following resources:								
<input type="checkbox"/>	AppSrv_85_01	saw211-sys1Node01	WAS_85_aix_cluster1			ND 8.5.0.0	WebSphere application server	<input type="button"/>
<input checked="" type="checkbox"/>	AppSrv_85_02	saw211-sys1Node01	WAS_85_aix_cluster1			ND 8.5.0.0	WebSphere application server	<input type="button"/>
<input type="checkbox"/>	ODR_85_1	saw211-sys1Node01				ND 8.5.0.0	On demand router	<input type="button"/>

Total 3

Using variables

WebSphere Variables

WebSphere Variables

Use this page to define substitution variables. Variables specify a level of indirection for some system-defined values, such as file system root directories. Variables have a scope level, which is either server, node, cluster, or cell. Values at one scope level can differ from values at other levels. When a variable has conflicting scope values, the more granular scope value overrides values at greater scope levels. Therefore, server variables override node variables, which override cluster variables, which override cell variables.

Scope: Cell=aix1_Cell_85_01, Node=aix1_CellManager_85_01, Server=dmgr

Show scope selection drop-down list with the all scopes option

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=aix1_CellManager_85_01, Server=dmgr

Preferences

New... Delete

Select	Name	Value	Scope
<input type="checkbox"/>	JAVA_HOME	\${JAVA_LOCATION_1.7_64}	Node=aix1_CellManager_85_01,Server=dmgr

Using variables

[WebSphere Variables > New...](#)

Use this page to define substitution variables. Variables specify a level of indirection for some system-defined values, such as file system root directories. Variables have a scope level, which is either server, node, cluster, or cell. Values at one scope level can differ from values at other levels. When a variable has conflicting scope values, the more granular scope value overrides values at greater scope levels. Therefore, server variables override node variables, which override cluster variables, which override cell variables.

Configuration

General Properties

* Name

Value

Description

Saving work

- As you work with the configuration, your changes are saved to temporary workspace storage.
- For the configuration changes to take effect, they must be saved to the master configuration.
- If you have a Network Deployment environment, a second step is required to synchronize, or send, the configuration to the nodes.

Saving work

You need to save changes to the master repository to make them permanent. You have several options:

- Use the Save window in the Messages area. If it is open, it is the quickest method.
- Click System administration —→ Save Changes to master repository.
- When you log in, if you logged out without saving the changes, you are given the option to save the changes.

Getting help

The screenshot shows the IBM Eclipse Help System window. At the top, there is a search bar with a 'GO' button and a 'Search scope' dropdown set to 'All topics'. Below the search bar is a toolbar with various icons for navigating the help system. On the left side, there is a tree view of help topics, with 'Viewing information in the help system' expanded to show its subtopics: 'About the console', 'Administration node group', 'Administrative agent', 'Application edition manager', 'Application management', 'Autonomic managers', 'Batch', 'Batch rules', 'Business-level applications', 'Centralized installation manager', 'Channel framework settings', and 'Checkpoint repository'. To the right of the tree view is the main content area, which displays the first topic from the tree: 'Viewing information in the help system'. The title of this topic is 'Viewing information in the help system'. Below the title, there is a paragraph of text: 'You can learn how to navigate and search in the help system by using the various buttons on the toolbar.' Further down, there are two more sections with blue underlined titles: 'Accessibility and keyboard shortcuts in the help system' and 'Prerequisite requirements for the help system'. The text under 'Accessibility and keyboard shortcuts in the help system' states: 'Accessibility features help users with physical disabilities, such as restricted mobility or limited vision, to use software products successfully.' The text under 'Prerequisite requirements for the help system' states: 'When you set up the IBM® Eclipse help system, you need to make sure that your workstation, operation system, browser, and hardware meet the requirements described in this topic.'

Getting help

- With the option Show the help portlet enabled, you can see the Help window in the workspace.
- Click More information about this page to open the help system to a topic-specific page.

Guided activities task

The deployment manager administrative console for IBM WebSphere Application Server v9 contains new guided activities that can help you prepare your environment:

- Preparing the hosting environment for basic dynamic operations helps you prepare support for WebSphere dynamic operations.
- This task can help create an On Demand Router, create a dynamic cluster, enable email notification for runtime tasks, and save and synchronize the changes.

Servers task

The deployment manager administrative console for IBM WebSphere Application Server v9 contains the following new features in the Servers task:

- You can view a list of all servers by selecting Servers
 → All servers
- In Server Types, there are the following new links:
 - On Demand Routers helps you manage your on demand routers by viewing, adding, deleting, using templates, and starting and stopping them.
 - PHP servers helps you view, add, delete, use templates, start, stop, terminate, submit action, and set the mode of PHP servers in your environment.

Servers Applications task

In Applications task, there are the following new features:

- You can view all your applications by selecting the All applications link.
- Using the Install New Middleware Application link, you can add Java 2 Platform enterprise Edition, PHP, Unmanaged Web Application, and WebSphere Application Server Community Edition types of applications to your environment

Runtime Operations task

This task consists of several features:

- **Dashboard:** Displays a high level of the overall environment and alerts about any possible problems.
- **Applications:** Displays an operational summary of all the started applications in your environment, including status, stability, and service policy.
- **Deployment Targets:** Displays an operational summary of the running deployment targets in your environment, such as application servers, middleware servers, clusters, and dynamic clusters.

System administration task

This task contains the following new features:

- Extended Repository Service enables advanced management of the configuration repository.
- The configuration repository contains the configuration for the cell.
- This information is essential to the operation of your applications.
- You can create repository checkpoints to help you save snapshots of your configuration as you make changes, so you can easily undo those changes if necessary.

System administration task

Middleware descriptors provides information about different middleware server platforms to the Intelligent Management runtime environment. The default middleware platforms are:

- apacheWebServerRuntime
- apache_server
- application_server
- customhttp_server
- phpRuntime
- wasceRuntime
- wasce_server.

Securing the administrative console

- WebSphere Application Server provides the ability to secure the administrative consoles so that only authenticated users can use them by enabling administrative security.
- Administrative security determines whether security is used at all, provides authentication of users using the WebSphere administrative function, the type of registry against which authentication takes place, and other values.

Enabling security after profile creation

- You can enable administrative security after profile creation through the administrative console by navigating to Security → Global security.
- Performing this action allows you more flexibility in specifying security options.
- You must complete the configuration items for authentication, authorization, and realm (user registry).
- Populate the chosen user registry with at least one user ID to be used as an administrator ID.

Global security

Use this panel to configure administration and the default application security policy. This security configuration applies to the security policy for all administrative functions and is used as a default security policy for user applications. Security domains can be defined to override and customize the security policies for user applications.

[Security Configuration Wizard](#) [Security Configuration Report](#)

Administrative security

Enable administrative security [Administrative user roles](#)
[Administrative group roles](#)
[Administrative authentication](#)

Application security

Enable application security

Java 2 security

Use Java 2 security to restrict application access to local resources
 Warn if applications are granted custom permissions
 Restrict access to resource authentication data

User account repository

Realm name:

Current realm definition:

Available realm definitions:

Authentication

Authentication mechanisms and expiration

[LTPA](#)
 [Kerberos and LTPA](#)
[Kerberos configuration](#)
[Authentication cache settings](#)

Web and SIP security
 RMI/IOP security
 Java Authentication and Authorization Service

Enable Java Authentication SPI (JASPI)
[Providers](#)

Use realm-qualified user names

[Security domains](#)
[External authorization providers](#)
[Programmatic session cookie configuration](#)
[Custom properties](#)

Enabling security after profile creation

In larger environments, you can use an LDAP server for your user repository. Using WebSphere Application Server V8.5 you can connect to the following LDAP server types:

- ▶ IBM Tivoli Directory Server
- ▶ z/OS Integrated Security Services LDAP Server
- ▶ IBM Lotus® Domino®
- ▶ Novell Directory Services
- ▶ Sun Java System Directory Server
- ▶ Microsoft Windows Active Directory
- ▶ Microsoft Active Directory Application Mode
- ▶ Custom

Enabling security after profile creation

To add a connection to an LDAP server, after you enabled the administrative security and set the user repository to federated repositories:

1. In the Java2 security section of the security settings window, click **Configure**.
2. In the Federated repositories window, click **Add repositories (LDAP, custom, etc)**.
3. In the Repository reference window, click **New Repository**.
4. Select **LDAP Repository** from the drop-down list.
5. Add all of the necessary information in the General Properties window according to your LDAP environment.
6. Click **Apply** and then click **Save**.

Enabling security after profile creation

To manually edit the security.xml file:

1. Open the security.xml file at
dmgr_profile_home/config/cells/cell_name.
2. Edit the second line, changing enabled="true" to
enabled="false". This process is shown in Example 6-4.

Enabling security after profile creation

Example 6-4 Manually editing the security.xml file

```
<security:Security xmi:version="2.0" xmlns:xmi="http://www.omg.org/XMI"
xmlns:orb.securityprotocol="http://www.ibm.com/websphere/appserver/schemas/5.0/
orb.securityprotocol.xmi"
xmlns:security="http://www.ibm.com/websphere/appserver/schemas/5.0/security.xmi"
" xmi:id="Security_1" useLocalSecurityServer="true"
useDomainQualifiedUserNames="false" enabled="false" cacheTimeout="600"
issuePermissionWarning="true" activeProtocol="BOTH"
enforceJava2Security="false" enforceFineGrainedJCASecurity="false"
appEnabled="true" dynamicallyUpdateSSLConfig="true" allowBasicAuth="true"
activeAuthMechanism="LTPA_1" activeUserRegistry="WIMUserRegistry_1"
defaultSSLSettings="SSLConfig_1">
```

Administrative security roles

- Administrative security is based on identifying users or groups that are defined in the active user registry and assigning roles to each of those users.
- When you log into the administrative console or issue administrative commands, you must use a valid administrator user ID and password.
- The role of the user ID determines the administrative actions that the user can perform.

Administrative security roles

The following administrative security roles are available:

- **Administrator:** The administrator role has operator permissions, configurator permissions, and the permission required to access sensitive data, including server password, Lightweight Third Party Authentication (LTPA) password and keys, and so on.
- **Auditor:** The auditor role has permission to view and change the configuration settings for the security auditing subsystem.

Administrative security roles

Assigning administrative roles to users and groups

If you are using a file-based repository, you can add users and groups through the console by clicking **Users and Groups** → **Manage Users** or **Users and Groups** → **Manage Groups**. Otherwise, the users and groups must be added to the user registry using the tools provided by the registry product.

Role assignments for users and groups are managed through the administrative console. Click **Users and Groups** → **Administrative user roles** or **Users and groups** → **Administrative group roles**. Use these windows to assign an administrative role to a user or group.

Administrative security roles

Fine-grained security

- WebSphere Application Server administrative security is fine-grained, meaning that access can be granted to each user per resource instance.
- For example, users can be granted configurator access to a specific instance of a resource (an application, an application server, or a node).
- The administrative roles are assigned per resource instance rather than to the entire cell.

Administrative security roles

You can define groups of resources that are treated collectively by clicking Security → Administrative Authorization Groups. The resource instances that are added to an authorization group can be the following types:

- Clusters
- Business level applications
- Assets
- Nodes including application servers and web servers
- Applications
- Node groups

Job manager console

The Jobs navigation tree in the job manager console has the following options:

- Submit a job
- Review the status of a job
- Identify job manager target for job
- Identify target resources used in job
- Identify target groups for administrative jobs
- Add or delete Installation Manager installation kits

Targets

Use this panel to find targets for jobs. Either select a saved search, create a new search, or find targets by name.

Find

Target type: Host

Target name: = saw11-sys1

Job type: = *

Unique identifier: = *

Advanced find options

Resources: With | Without

Maximum results: 50

Find Reset Retrieved 1 of 1 results.

New Host... Display Resources Delete Host

Select	Target name	Version
<input type="checkbox"/>	saw11-sys1	

Total 1

Submitting a job with the job manager

The job manager provides the following job types:

- Run a wsadmin script
- Manage applications:
 - distributeFile
 - collectFile
 - removeFile
 - startApplication
 - stopApplication
 - installApplication
 - updateApplication
 - uninstallApplication

Submitting a job with the job manager

Complete the following steps for an example of submitting a job:

1. Start the job manager, and log into the job manager console: <http://:9960/ibm/console>
2. To submit jobs, nodes must already be registered with the job manager. To verify which nodes are registered, expand Jobs in the navigation window, and click Targets.

Submitting a job with the job manager

Submit a job to the job manager

Choose the type of job that you want to perform. Optionally provide a description for the job.

→ Step 1: Choose a job type

Step 2: Choose job targets

Step 3: Specify job parameters

Step 4: Schedule the job

Step 5: Review the summary and submit the job

Choose a job type

Job type

Collect file

Description

collectFile

Next

This screenshot shows a step-by-step job submission process. The current step is 'Step 1: Choose a job type', where 'Collect file' is selected as the job type and 'collectFile' is provided as a description. The other steps listed are 'Step 2: Choose job targets', 'Step 3: Specify job parameters', 'Step 4: Schedule the job', and 'Step 5: Review the summary and submit the job'. A 'Next' button is located at the bottom of the form.

Choose job targets

Job type: Collect file

Target groups

-- No groups -- 

Target names

Add

Find...

saw11-sys1

 Remove 

Target authentication

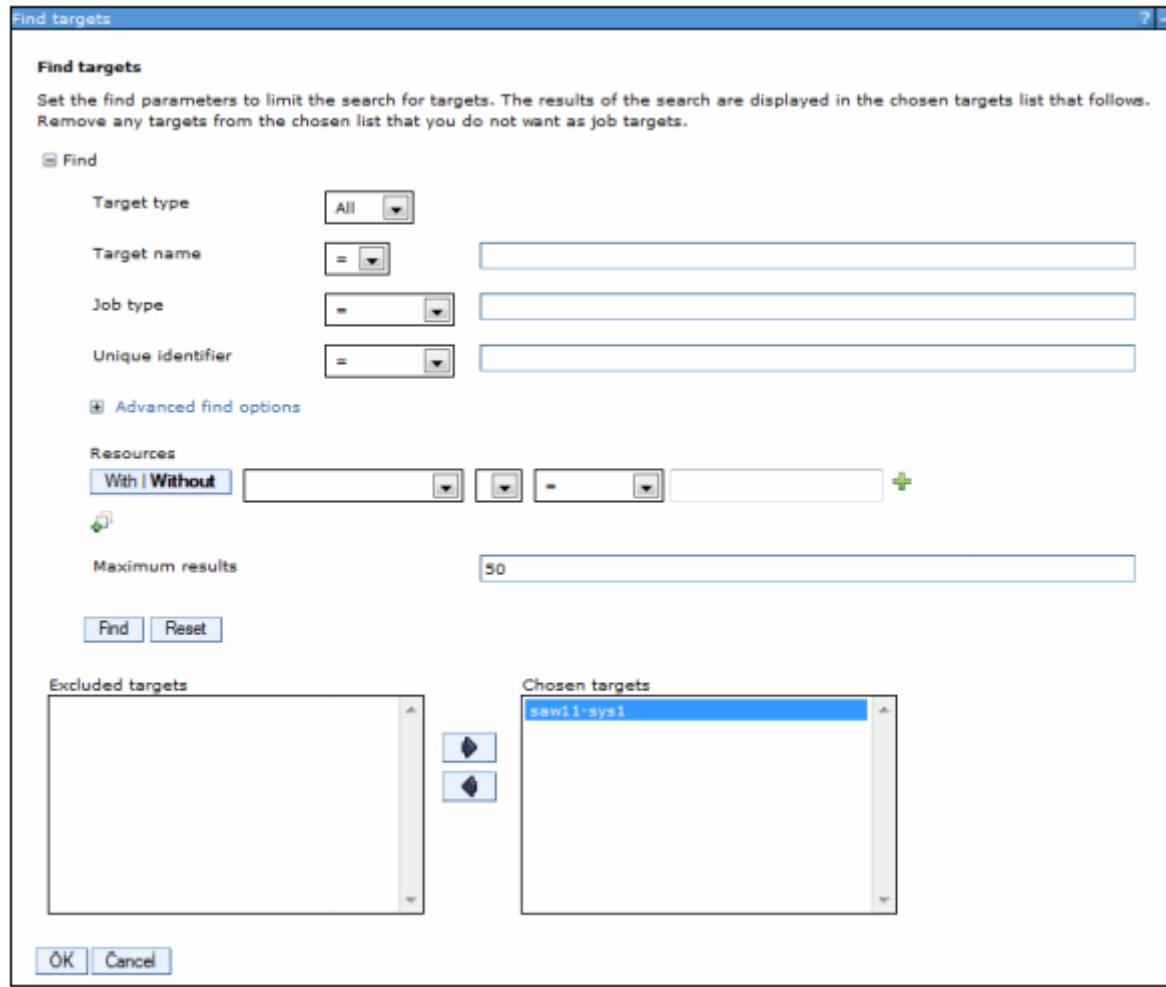
User name

root

Password authentication

* Password

* Confirm password



Submitting a job with the job manager

Submit a job to the job manager

Enter the parameters for the job. The parameters vary based on the type of job that you previously selected.

Step 1: Choose a job type
Step 2: Choose job targets
→ Step 3: Specify job parameters
Step 4: Schedule the job
Step 5: Review the summary and submit the job

Specify job parameters

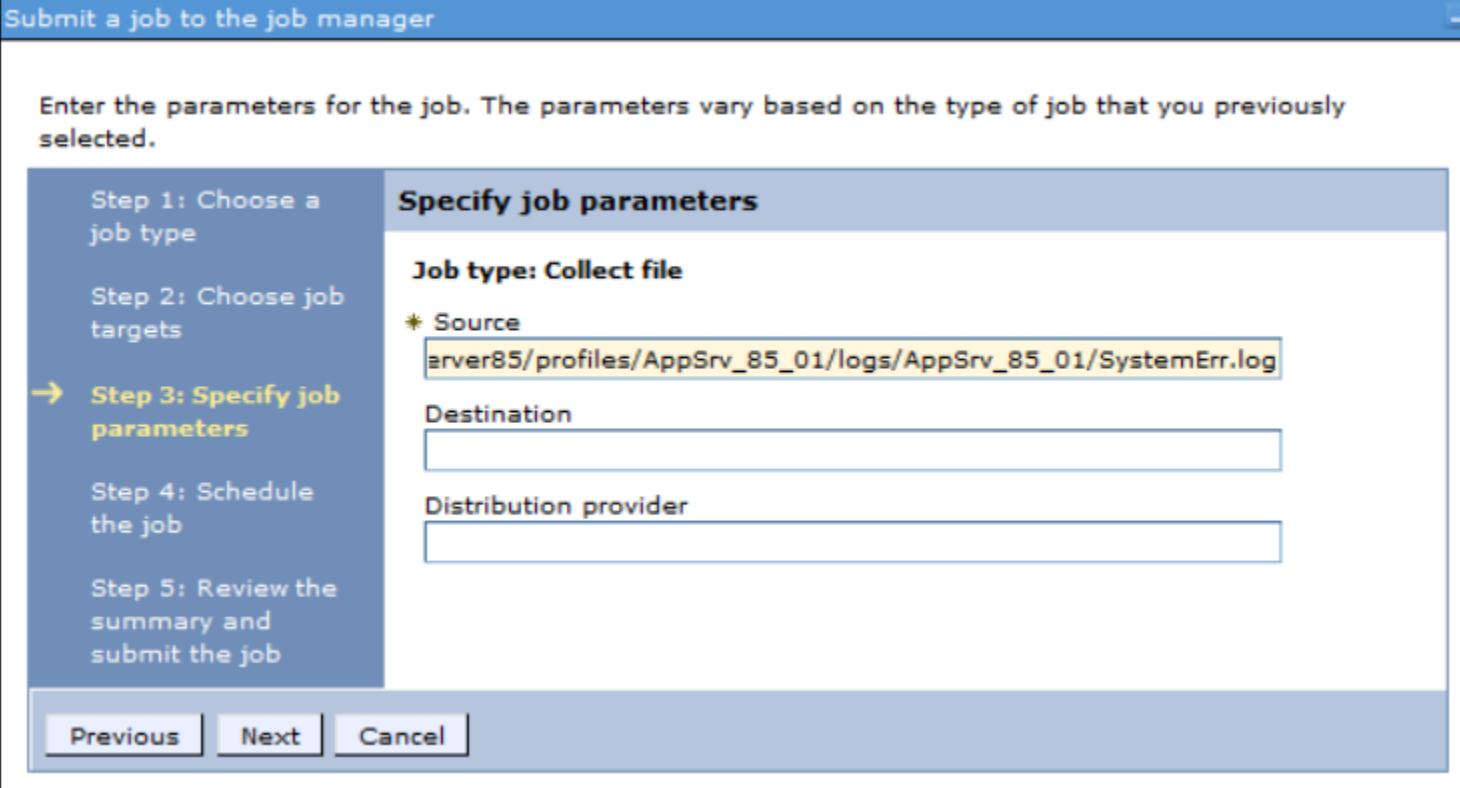
Job type: Collect file

* Source
`server85/profiles/AppSrv_85_01/logs/AppSrv_85_01/SystemErr.log`

Destination

Distribution provider

Previous | Next | Cancel



Schedule the job

Job type: Collect file

Notification

Email addresses

Initial Availability

Specify when this job is first available.

- Make the job available now.
- Schedule availability

Date (MM/dd/yyyy)

 / /

Time (HH:mm:ss)

 : :

Expiration

Specify when this job is no longer available.

- Use default expiration - 1 days.
 - Expire the job based on a date
- Date (MM/dd/yyyy)
- / /
- Time (HH:mm:ss)
- : :
- Expire the job based on a duration

Expire after

 minutes

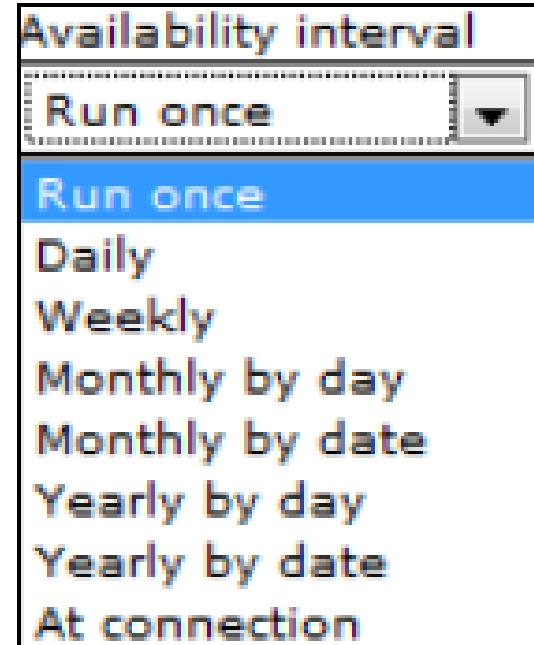
Job Availability Interval

Jobs can run repeatedly based on an interval. Specify the interval that the job is available.

Availability interval

Submitting a job with the job manager

- **Job availability interval:** This field allows you to repeat job submission at intervals.
- Depending on the selection, you will have an additional field displayed that allows you to choose the days, start and stop time, and so on



Submitting a job with the job manager

Job status

Job status

This panel shows the status of submitted jobs with a status summary. It provides links to view status of the targets and explore the job history. Set the find parameters to limit the search results for submitted jobs. The results of the job search are displayed in the following collection.

Status summary key: Succeeded Partially succeeded Failed Incomplete

+ Find

+ Preferences

Suspend Resume Delete

Select	Job ID	Description	State	Activation Time	Expiration Time	Status Summary
<input type="checkbox"/>	133979799573562899	collectFile	Active	06/15/2012 18:06:35	06/16/2012 18:06:35	1

Total 1

Submitting a job with the job manager

Job status

[Job status](#) > 133979799573562899

Shows the job status at each target. Set the find parameters to limit the search results for submitted jobs.

+ Find

General Properties

Job ID
133979799573562899

Description
collectFile

Activation Time
06/15/2012 18:06:35

Expiration Time
06/16/2012 18:06:35

Target Names ▾	Status ▾	Output Files ▾
saw11-sys1	Succeeded	SystemErr.log

Back

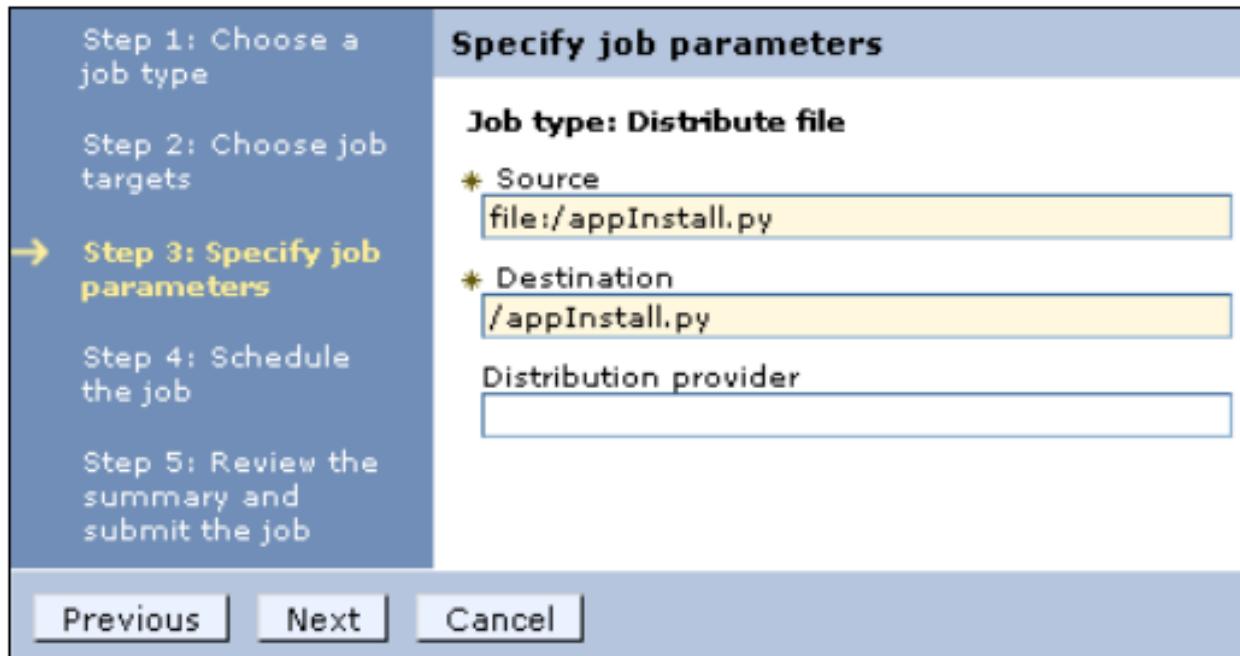
Distributing files using the job manager

Some job types require that files be transferred to the node where the job is to run. The Distribute file job type can be used to transfer these files, which is normally necessary in the following circumstances:

- When you want to run a wsadmin script on the node. The script must be distributed to the node before you can use the Run wsadmin script job.
- When you want to install or update an application. The EAR file must be distributed to the node before you can use the Install application or Update application jobs.

Distributing files using the job manager

The arguments are entered, as shown in Figure



Using command-line tools

Examples of commands are:

- startServer to start a server process
- stopServer to stop a server process
- serverStatus to obtain the status of servers
- startNode to start the node agent process
- registerNode to register a node with the administrative agent
- addNode to add a node to a cell configuration

Command location

For the most part, the commands exist in two places:

install_root/bin

- Commands entered from this location operate against the default profile unless you use the -profileName parameter to specify the profile.

profile_root/bin

- Commands entered from this location operate against the profile defined in profile_root.

Key usage parameters

There are several commonly used parameters that are valid for every command:

- `profileName` specifies the profile against which the command is to run
- `username` specifies the user ID with the administrative privileges required to execute the command
- `password` specifies the password for the user ID specified in `-username`
- `help` displays the usage requirements and a list of parameters for the command

Entering commands

Windows operating systems

Commands in Windows operating systems have an extension of .bat. It is not necessary to use the extension. Commands are not case sensitive, but parameters and names are case sensitive.

To use a command:

1. Open a command-prompt window.
2. Change to the directory where the command is, for example:

C:\Program Files\IBM\WebSphere\AppServer\profiles\profile_name

3. Enter the command, for example:

```
serverStatus.bat -all -username <username> -password <password>
```

Entering commands

To ensure that WebSphere Application Server command-line tools have sufficient privileges, run them as Administrator.

When you run these command-line tools from a command prompt, run them from a command prompt window that is launched by performing the following actions:

1. Right-click a command prompt shortcut.
2. Click Run As Administrator.
3. When you open the command-prompt window as Administrator, an operating-system dialog appears that asks you if you want to continue. Click Continue to proceed.

Entering commands

UNIX operating systems

To use a command for UNIX operating systems:

1. Open a command prompt or terminal window.
2. Change to the directory where the command is, for example, for root users, the directory is:
 - AIX: /usr/IBM/WebSphere/AppServer/profiles/*profile_name*/bin
 - HP, Linux, or Solaris: /opt/IBM/WebSphere/AppServer/profiles/*profile_name*/bin

For non-root users, the directory is:

user_home/IBM/WebSphere/AppServer/profiles/bin

3. Enter the command, for example:

```
serverStatus.sh -all -username <username> -password <password>
```

Entering commands

IBM i operating systems

For an IBM i operating system:

1. From the IBM i command line, start a Qshell session by issuing the **STRQSH CL** command.
2. Change to the directory where the command is, for example:

`/QIBM/ProdData/WebSphere/AppServer/V8/ND/profiles/profile_name/bin`

3. Enter the command, for example:

```
serverStatus.sh -all -username <username> -password <password>
```

Entering commands

z/OS operating systems

You can manage application servers on a z/OS system from a UNIX System Services environment:

1. Enter **uss** (to switch to the UNIX System Services environment).
2. Change to the directory where the command is. On z/OS, this directory is always *app_server_root/profiles/default*, because only the profile name “default” is used in WebSphere Application Server for z/OS.
3. Enter the command, for example:

```
serverStatus.sh -all -username <username> -password <password>
```

Entering commands

Example 6-5 Backup a application server profile AppSrv_85_01 (works only after you stop the server)

```
/opt/IBM/WebSphere/AppServer85/profiles/AppSrv_85_01/bin/manageprofiles.sh  
-backupProfile -profileName AppSrv_85_01 -backupFile  
/opt/IBM/WebSphere/AppSrv_85_01_backup.zip
```

Example 6-6 Enabling SDK V1.7 64 bit to all profiles of an environment

```
/opt/IBM/WebSphere/AppServer85/profiles/AppSrv_85_01/bin/managesdk.sh  
-enableProfileAll -sdkname 1.7_64 -enableServers  
CWSDK1017I: Profile dmgr_85_01 now enabled to use SDK 1.7_64.
```

CWSDK1024I: The node default SDK setting for federated profile AppSrv_85_01 has been saved in the master configuration repository.

CWSDK1025I: A synchronization operation is required before configuration changes to federated profile AppSrv_85_01 can be used.

CWSDK1017I: Profile AppSrv_85_01 now enabled to use SDK 1.7_64.

CWSDK1001I: Successfully performed the requested managesdk task

Example 6-7 Synchronizing a node using the deployment manager host and SOAP port parameters

```
/opt/IBM/WebSphere/AppServer85/profiles/AppSrv_85_01/bin/syncNode.sh saw211-sys1  
8884
```

ADMU0116I: Tool information is being logged in file
/opt/IBM/WebSphere/AppServer85/profiles/AppSrv_85_01/logs/syncNode.log

ADMU0128I: Starting tool with the AppSrv_85_01 profile

ADMU0401I: Begin syncNode operation for node saw211-sys1Node01 with Deployment Manager saw211-sys1: 8884

ADMU0016I: Synchronizing configuration between node and cell.

ADMU0402I: The configuration for node saw211-sys1Node01 has been synchronized with Deployment Manager saw211-sys1: 8884

Example 6-8 Backup the entire configuration of a node

```
/opt/IBM/WebSphere/AppServer85/profiles/AppSrv_85_01/bin/backupConfig.sh  
/opt/IBM/WebSphere/backup_config.zip  
ADMU0116I: Tool information is being logged in file  
  
/opt/IBM/WebSphere/AppServer85/profiles/AppSrv_85_01/logs/backupConfig.log  
ADMU0128I: Starting tool with the AppSrv_85_01 profile  
ADMU5001I: Backing up config directory  
          /opt/IBM/WebSphere/AppServer85/profiles/AppSrv_85_01/config to file  
          /opt/IBM/WebSphere/backup_config.zip  
ADMU0505I: Servers found in configuration:  
ADMU0506I: Server name: nodeagent  
ADMU0506I: Server name: AppSrv_85_01  
ADMU0506I: Server name: ODR_85_1  
ADMU0506I: Server name: AppSrv_85_02  
ADMU2010I: Stopping all server processes for node saw211-sys1Node01  
ADMU0512I: Server AppSrv_85_01 cannot be reached. It appears to be stopped.  
ADMU0512I: Server ODR_85_1 cannot be reached. It appears to be stopped.  
ADMU0512I: Server AppSrv_85_02 cannot be reached. It appears to be stopped.  
ADMU0512I: Server nodeagent cannot be reached. It appears to be stopped.  
.....  
ADMU5002I: 2,014 files successfully backed up
```

Part II: Administration and Configuration techniques



7: Administration of WebSphere processes



Administration of WebSphere processes

We cover the following topics in this lesson:

- ▶ Working with deployment manager
- ▶ Working with the administrative agent
- ▶ Working with the job manager
- ▶ Working with application servers
- ▶ Working with nodes in a Network Deployment environment
- ▶ Working with clusters
- ▶ Working with virtual hosts
- ▶ Managing applications
- ▶ Enabling process restart on failure

Deployment manager configuration settings

A deployment manager is built by creating a deployment manager profile. After it is built, there is usually not much that you need to do regarding the configuration of the deployment manager. However, there are settings that you can modify from the administration tools:

- Configuration
- Runtime

Deployment manager

Use this page to stop the deployment manager from running, and to link to other administrative console pages that you can use to define additional properties for the deployment manager. The deployment manager provides a single, central point of administrative control for all elements of the distributed cell.

Runtime Configuration

Stop

General Properties

Name: dmgr

Start components as needed

Apply OK Reset Cancel

Server Infrastructure

- Java and Process Management
 - [Process definition](#)
- [Administration](#)
 - [Custom properties](#)
 - [Server components](#)
- [Java SDKs](#)

Additional Properties

- [Core group service](#)
- [Job managers](#)
- Ports
 - [Administration services](#)
 - [Custom services](#)
 - [ORB service](#)
 - [Logging and tracing](#)
 - [All Deployment Managers](#)
 - [Change log detail levels](#)
 - [Web container transport chains](#)

Deployment manager Runtime tab

Deployment manager

Use this page to stop the deployment manager from running, and to link to other administrative console pages that you can use to define additional properties for the deployment manager. The deployment manager provides a single, central point of administrative control for all elements of the distributed cell.

Runtime Configuration

General Properties

Process ID
688190

Cell name
aix1_Cell_85_01

Node name
aix1_CellManager_85_01

State
Started

Current heap size
246 MB

Maximum heap size
256 MB

[Back](#)

Troubleshooting

Diagnostic Provider service

- [Tests](#)
- [State Data](#)
- [Configuration Data](#)

Additional Properties

[Product Information](#)

Deployment manager configuration settings

Deployment manager > Product Information

Specifies the product information for this installation of WebSphere(R) Application Server.

Runtime

General Properties

Product Name	ID	Version	Build Date	Build Level
IBM WebSphere Application Server Network Deployment	ND	8.5.0.0	5/1/12	gm1218.01
IBM WebSphere SDK Java Technology Edition (Optional)	IBMWJAVA7	7.0.1.0	4/24/12	gm1217.01

Additional Properties

- [Components](#)
- [Extensions](#)
- [History Report](#)
- [Product Report](#)
- [PTFs](#)

OK

Starting and stopping the deployment manager

Starting the deployment manager with `startManager`

The `startManager` command is used to start the deployment manager on distributed systems, as shown in Example 7-1.

Example 7-1 `startManager` command

```
/opt/IBM/WebSphere/AppServer85/profiles/dmgr_85_01/bin/startManager.sh
ADMU0116I: Tool information is being logged in file
/opt/IBM/WebSphere/AppServer85/profiles/dmgr_85_01/logs/dmgr/startServer.log
ADMU0128I: Starting tool with the dmgr_85_01 profile
ADMU3100I: Reading configuration for server: dmgr
ADMU3200I: Server launched. Waiting for initialization status.
ADMU3000I: Server dmgr open for e-business; process id is 704652
```

Run this command from the deployment manager `profile_root/bin` directory. If you run it from the `install_root/bin` directory, use the `-profileName` parameter to ensure that the command is run against the deployment manager profile.

Starting and stopping the deployment manager

Syntax of startManager

The syntax of the startManager command is:

```
startManager.bat(sh) [options]
```

The options are shown in Example 7-2.

Example 7-2 startManager options

```
Usage: startManager [options]
      options: -nowait
              -quiet
              -logfile <filename>
              -replacelog
              -trace
              -script [<script filename>] [-background]
              -timeout <seconds>
              -statusport <portnumber>
              -profileName <profile>
              -recovery
              -help
```

Starting and stopping the deployment manager

Starting the deployment manager on z/OS (START command)

On z/OS, the deployment manager can be started using a JCL start procedure. The exact command can be found in the BBOCCINS instruction member of the JCL generated to create the profile. For example:

```
START WPDCR,JOBNAM=WPDMGR,ENV=WPCELL.WPDMNODE.WPDMGR
```

The meaning of the command syntax is:

- ▶ WPDCR is the JCL start procedure.
- ▶ WPDMGR is the Job name.
- ▶ ENV is the concatenation of the cell short name, node short name, and server short name.

Starting and stopping the deployment manager

Stopping the deployment manager

Example 7-3 stopManager command

```
/opt/IBM/WebSphere/AppServer85/profiles/dmgr_85_01/bin/stopManager.sh
```

```
ADMU0116I: Tool information is being logged in file
```

```
/opt/IBM/WebSphere/AppServer85/profiles/dmgr_85_01/logs/dmgr/stopServer.log
```

```
ADMU0128I: Starting tool with the dmgr_85_01 profile
```

```
ADMU3100I: Reading configuration for server: dmgr
```

```
ADMU3201I: Server stop request issued. Waiting for stop status.
```

```
ADMU4000I: Server dmgr stop completed.
```

Starting and stopping the deployment manager

Syntax of stopManager

Example 7-4 startManager options

```
Usage: stopManager [options]
      options: -nowait
              -quiet
              -logfile <filename>
              -replacelog
              -trace

              -timeout <seconds>
              -statusport <portnumber>
              -conntype <connector type>
              -port <portnumber>
              -username <username>
              -password <password>
              -profileName <profile>
              -help
```

Starting and stopping the deployment manager

Stopping the deployment manager on z/OS (STOP command)

To stop the deployment manager with a **STOP** command, use the following format:

```
STOP dmgr_job
```

For example:

```
STOP WPDMGR
```

Stopping the **daemon** server also stops all **servers** for that **cell**, and all the **servers** on that **daemon instance's MVS image** are stopped in an **orderly fashion**, one by one. For example:

```
STOP WPDEMN
```

The high-availability deployment manager function

- The high availability (HA) deployment manager function is configured using a shared-file system.
- When this configuration option is chosen, multiple deployment managers are configured.
- The benefit of the HA deployment manager function is that the deployment manager is no longer the single point of failure for cell administration.
- This is important in environments relying on automated operations, including application deployment and server monitoring.

Working with the administrative agent

Starting and stopping the administrative agent

To view the status of the administrative agent process:

`<profile_root_path>/bin/serverStatus.sh(bat) -all`

To start an administrative agent, run the following command:

`<profile_root_path>/bin/startServer.sh(bat) adminagent`

To stop an administrative agent, run the following command:

`<profile_root_path>/bin/stopServer.sh(bat) adminagent`

Administrative agent

The administrative agent process can monitor and control multiple application servers on nodes that are registered with the administrative agent. You use the administrative console of the administrative agent to manage these application servers. By using a single console to administer your application servers, you reduce the overhead of running administrative services in every application server.

Runtime Configuration

General Properties

Name: adminagent

Node: saw211-sys1AANode01

Start components as needed

Managed nodes

- [Nodes](#)

Server Infrastructure

- [Java SDKs](#)
- [Java\(TM\) process definition](#)

Additional Properties

[+ Ports](#)

- [Administration services](#)
- [Custom services](#)
- [ORB service](#)
- [Change log detail levels](#)
- [Diagnostic trace service](#)

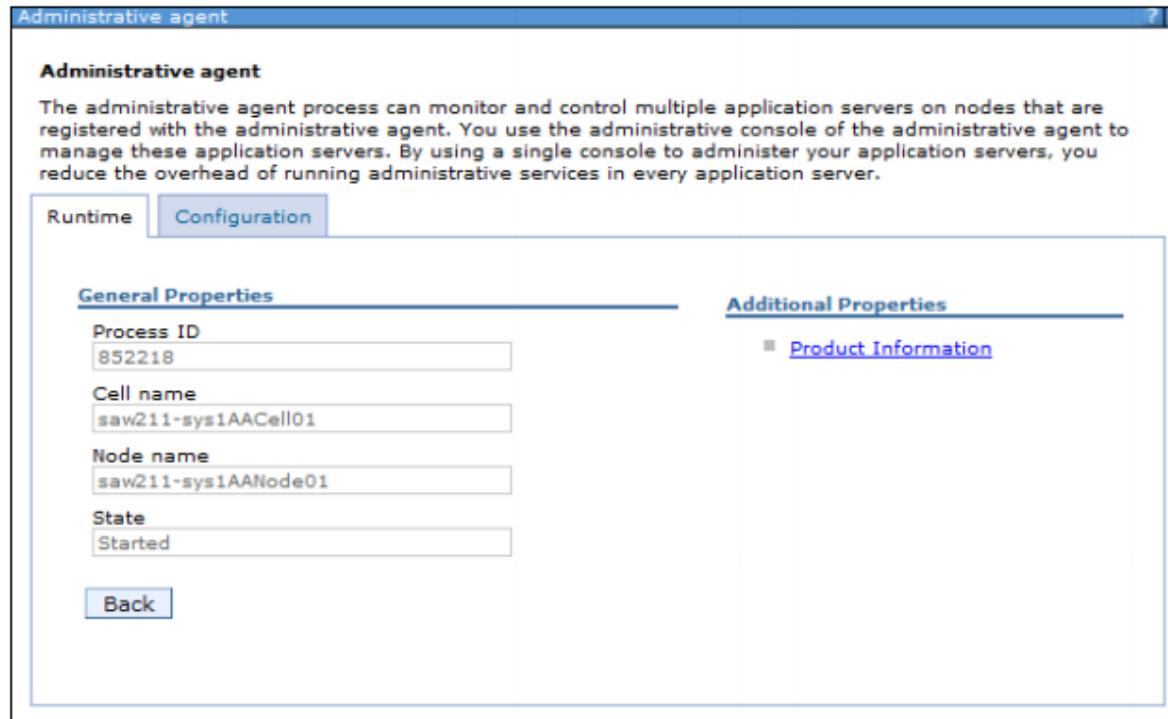
Administrative agent configuration settings

The following list describes the two notable options in this window:

- Java SDKs
- Ports

Administrative agent configuration settings

Administrative agent Runtime tab



Administrative agent configuration settings

Administrative agent

[Administrative agent > Product Information](#)

Specifies the product information for this installation of WebSphere(R) Application Server.

Runtime

General Properties

Product Name	ID	Version	Build Date	Build Level
IBM WebSphere Application Server Network Deployment	ND	8.5.0.0	5/1/12	gm1218.01
IBM WebSphere SDK Java Technology Edition (Optional)	IBMJAVA7	7.0.1.0	4/24/12	gm1217.01

Additional Properties

- [Components](#)
- [Extensions](#)
- [History Report](#)
- [Product Report](#)
- [PTFs](#)

OK

Working with the job manager

Starting and stopping the job manager

To view the status of the jobmgr, run the following command:

`<profile_root_path>/bin/serverStatus.sh(bat) -all`

To start a job manager, run the following command:

`<profile_root_path>/bin/startServer.sh(bat) jobmgr`

To stop a job manager, run the following command:

`<profile_root_path>/bin/stopServer.sh(bat) jobmgr`

Job manager configuration settings

Job manager

Use this panel to configure the job manager server.

Runtime Configuration

General Properties

Name: jobmgr

* Default job expiration: 1 days

* Maximum database results: 10000

Job manager URL:

Mail session JNDI name:

Notification email sender's address:

Start components as needed

Server Infrastructure

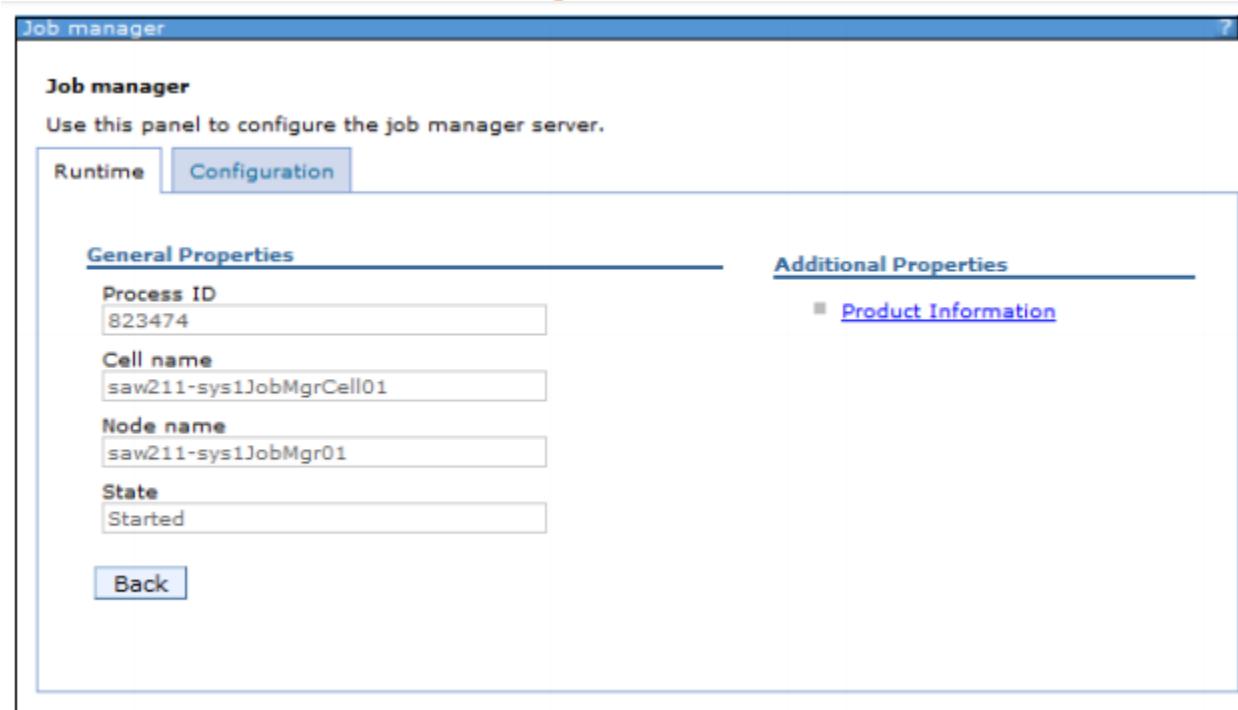
- Java and Process Management
 - [Java SDKs](#)

Additional Properties

- Ports
 - [Administration services](#)
 - [Custom services](#)
 - [ORB service](#)
 - [Logging and tracing](#)
 - [Change log detail levels](#)
 - [Thread pools](#)
 - [Web container transport chains](#)

Administrative agent configuration settings

Job manager Runtime tab



Administrative agent configuration settings

The screenshot shows the 'Job manager' interface with the title 'Job manager > Product Information'. It specifies the product information for this installation of WebSphere(R) Application Server. The 'Runtime' tab is selected. The 'General Properties' section contains two rows of data:

Product Name	ID	Version	Build Date	Build Level
IBM WebSphere Application Server Network Deployment	ND	8.5.0.0	5/1/12	gm1218.01
IBM WebSphere SDK Java Technology Edition (Optional)	IBMJAVA7	7.0.1.0	4/24/12	gm1217.01

The 'Additional Properties' section includes links to 'Components', 'Extensions', 'History Report', 'Product Report', and 'PTFs'.

OK

Administrative agent configuration settings

High Performance Extensible Logging mode for logging and tracing

It is recommended that you switch to High Performance Extensible Logging (HPEL) if you have no existing procedures that prevent you from taking advantage of it.

To enable HPEL mode:

1. Click **Troubleshooting** → **Logs and trace** → **jobmgr**.
2. Click the **Switch to HPEL Mode** button.
3. Save the changes and then restart the job manager server process.
4. Log back into the administrative console.
5. Click **Troubleshooting** → **Logs and trace** → **jobmgr**.

[Logging and tracing > jobmgr](#)

Use this page to select a system log to configure, or to specify log detail levels for components and groups of components.

General Properties[Configure HPEL logging](#)

Directory	/opt/IBM/WebSphere/AppServer85/profiles/JobMgr01/logs/jobmgr
For cleanup, delete records older than	Disabled
For cleanup, maximum size of logs	50 Megabytes

[Configure HPEL trace](#)

Directory	/opt/IBM/WebSphere/AppServer85/profiles/JobMgr01/logs/jobmgr
For cleanup, delete records older than	Disabled
For cleanup, maximum size of trace	50 Megabytes

[Configure HPEL text log](#)

Current status:	Enabled
Directory	/opt/IBM/WebSphere/AppServer85/profiles/JobMgr01/logs/jobmgr
For cleanup, delete records older than	Disabled
For cleanup, maximum size of text log	50 Megabytes

Related Items

- [View HPEL logs and trace](#)
- [Change log detail levels](#)
- [Change log and trace mode](#)
- [Manage process logs](#)
- [NCSA access and HTTP error logging](#)

Working with application servers

This section covers the following topics:

- Creating an application server
- Viewing the status of an application server
- Starting an application server
- Stopping an application server
- Viewing runtime attributes of an application server
- Customizing application servers

Creating an application server

Stand-alone application servers

- Stand-alone application servers are created by creating an application server profile.
- This action results in a profile that defines one stand-alone application server.
- This application server hosts the sample applications and the administrative console application.

Creating an application server

Unfederated application server

An administrative agent can monitor and control multiple unfederated application servers on one or more nodes.

Unfederated application servers can be created in multiple ways:

- The first server on a node to be managed by an administrative agent must be created with a stand-alone profile and then registered with the administrative agent.
- The registration process disables the administrative console on the server and makes a console for the application server node available on the administrative agent process

Creating an application server

Templates

An application server is created based on a template that defines the configuration settings. Four template options are provided:

- default Standard production server: You get this option if you do not specify a template for a server on a distributed system.
- default z/OS: This option is available only on z/OS platforms and is the only option until you create new templates.

Creating an application server

Ports

Each server process uses a set of ports that must be unique on the system. When you create an application server, you have the following options:

- Use the default ports: Use this selection if you will only have one application server on the system or if this is the first application server created, and port selection is not an issue.
- Have a set of ports selected that are unique to the WebSphere system installation: This selection ensures that no two WebSphere processes in the installation have the same port assigned

Creating an application server

z/OS settings

Here, we describe the various z/OS settings:

- Long name
- Short name
- Specific short name (z/OS)
- Generic short name (z/OS)
- Bit mode (z/OS)

Creating an application server

Creating an application server from the administrative console

To create an application server from the administrative console:

1. Open the deployment manager administrative console.
2. Click Servers → Server Types → WebSphere application server.
3. Click New

Creating an application server

Create a new application server

Use this page to create a new application server.

→ Step 1: Select a node

Step 2: Select a server template

Step 3: Specify server specific properties

Step 4: Confirm new server

Select a node

Select the node that corresponds to the server you wish to create.

Select node

saw211-sys1Node01 (ND 8.5.0.0)

* Server name

AppSrv_85_03

Next Cancel

1-274

Creating an application server

Create a new application server

Use this page to create a new application server.

Step 1: Select a node

→ Step 2: Select a server template

Step 3: Specify server specific properties

Step 4: Confirm new server

Select a server template

Select	Name	Type	Description
<input checked="" type="radio"/>	default	System	The WebSphere Default Server Template
<input type="radio"/>	DeveloperServer	System	This template is optimized to perform well for development uses.
<input type="radio"/>	defaultXD	System	WebSphere Intelligent Management Pack Default Template

Previous Next Cancel

Creating an application server

Create a new application server

Use this page to create a new application server.

Step 1: Select a node

Step 2: Select a server template

→ Step 3: Specify server specific properties

Step 4: Confirm new server

Specify server specific properties

Generate Unique Ports

Core Group

Core_Group_85_1

Previous Next Cancel

This screenshot shows the third step of a four-step wizard for creating a new application server. The title bar says 'Create a new application server'. The main area has a blue sidebar on the left with steps 1-4. The central panel is titled 'Specify server specific properties'. It contains a checked checkbox for 'Generate Unique Ports' and a dropdown menu for 'Core Group' which is currently set to 'Core_Group_85_1'. At the bottom are 'Previous', 'Next', and 'Cancel' buttons.

Creating an application server

Create a new application server

Use this page to create a new application server.

Step 1: Select a node

Step 2: Select a server template

→ Step 3: Specify server specific properties

Step 4: Confirm new server

Specify server specific properties

Generate Unique Ports

Server Specific Short Name

Server Generic Short Name

Run in 64 bit JVM mode

Previous Next Cancel

The screenshot shows a software interface for creating a new application server. At the top, a blue header bar reads "Create a new application server". Below it, a message says "Use this page to create a new application server.". On the left, a vertical sidebar lists four steps: "Step 1: Select a node", "Step 2: Select a server template", "Step 3: Specify server specific properties" (which is highlighted in yellow), and "Step 4: Confirm new server". The main panel is titled "Specify server specific properties". It contains three sections: "Generate Unique Ports" (with a checked checkbox), "Server Specific Short Name" (with an empty input field), "Server Generic Short Name" (with an empty input field), and "Run in 64 bit JVM mode" (with a checked checkbox). Each section has a pair of small square buttons with arrows pointing up and down on the right side. At the bottom of the main panel are three buttons: "Previous", "Next", and "Cancel".

Creating an application server

Creating an application server from the job manager

To create an application server from the job manager, make the following selections as you step through the process to submit the job:

1. Start the job manager and targets. Access the job manager console.
2. Click Jobs —> Submit.
3. Click the Create application server job type. Click Next, as shown in Next Figure

Creating an application server

Submit a job to the job manager

Choose the type of job that you want to perform. Optionally provide a description for the job.

→ Step 1: Choose a job type

Step 2: Choose job targets

Step 3: Specify job parameters

Step 4: Schedule the job

Step 5: Review the summary and submit the job

Choose a job type

Job type
Create application server

Description
createApplicationServer

Next

This screenshot shows a user interface for creating a job in a job manager. The main title is 'Submit a job to the job manager'. Below it, a sub-instruction says 'Choose the type of job that you want to perform. Optionally provide a description for the job.' On the left, a vertical sidebar lists five steps: 'Step 1: Choose a job type' (which is currently selected, indicated by a yellow arrow), 'Step 2: Choose job targets', 'Step 3: Specify job parameters', 'Step 4: Schedule the job', and 'Step 5: Review the summary and submit the job'. At the bottom of this sidebar is a 'Next' button. The main content area is titled 'Choose a job type'. It contains two input fields: 'Job type' with the value 'Create application server' and 'Description' with the value 'createApplicationServer'. There is also a small dropdown arrow icon next to the 'Job type' field.

Step 1: Choose a job type

→ Step 2: Choose job targets

Step 3: Specify job parameters

Step 4: Schedule the job

Step 5: Review the summary and submit the job

Choose job targets

Job type: Create application server

Target groups

-- No groups --

Target names

appsrv1

Target authentication

User name

Password authentication

* Password

* Confirm password

Submit a job to the job manager

Enter the parameters for the job. The parameters vary based on the type of job that you previously selected.

Step 1: Choose a job type

Step 2: Choose job targets

→ Step 3: Specify job parameters

Step 4: Schedule the job

Step 5: Review the summary and submit the job

Specify job parameters

Job type: Create application server

+ Server name

appsrv2

Find...

Node name

Additional job parameters.

Server template

Template name

Template location

Port control

Generate unique ports

Platform specific

Specific short name

Generic short name

Bit mode

64

Previous

Next

Cancel

Step 1: Choose a job type

Step 2: Choose job targets

Step 3: Specify job parameters

→ **Step 4: Schedule the job**

Step 5: Review the summary and submit the job

Schedule the job

Job type: Create application server

Notification

Email addresses

Initial Availability

Specify when this job is first available.

- Make the job available now.
- Schedule availability

Date (MM/dd/yyyy)

 /

Time (HH:mm:ss)

 : :

Expiration

Specify when this job is no longer available.

- Use default expiration - 1 days.
- Expire the job based on a date

Date (MM/dd/yyyy)

 / /

Time (HH:mm:ss)

 : :

- Expire the job based on a duration

Expire after

 minutes

Job Availability Interval

Jobs can run repeatedly based on an interval. Specify the interval that the job is available.

Availability interval

Creating an application server

Step 1: Choose a job type
Step 2: Choose job targets
Step 3: Specify job parameters
Step 4: Schedule the job
→ Step 5: Review the summary and submit the job

Review the summary and submit the job

Summary of actions:

Options	Values
Job type	Create application server
Description	createApplicationServer
Target names	appsrv1
Initial availability	Make the job available now.
Expiration	Use the default expiration.
User name	admin85
Server name	appsrv2
Generate unique ports	true
Bit mode	64

Previous Finish Cancel

Creating an application server

Job status

Job status

This panel shows the status of submitted jobs with a status summary. It provides links to view status of the targets and explore the job history. Set the find parameters to limit the search results for submitted jobs. The results of the job search are displayed in the following collection.

Status summary key: Succeeded Partially succeeded Failed Incomplete

+ Find

+ Preferences

Suspend Resume Delete

Select	Job ID	Description	State	Activation Time	Expiration Time	Status Summary
<input type="checkbox"/>	134015120897194480	createApplicationServer	Active	06/19/2012 18:13:28	06/20/2012 18:13:28	1 1

Total 1

Creating an application server

The screenshot shows a web-based interface for managing application server resources. At the top, there are three icons: a download arrow, a save icon, and another download arrow. Below them are three dropdown menus: 'Resources' (sorted by quantity), 'Quantity' (sorted by target name), and 'Target name' (sorted by target name). A search bar at the top right contains the filter 'Filter: appsvr1'. A message below the filters says: 'To filter the following table, select the column by which to filter, then enter filter criteria (wildcards: *, ?, %).'. It includes a 'Filter' dropdown set to 'Target name', a 'Search terms:' input field containing 'appsvr1', and a 'Go' button.

Resources	Quantity	Target name
To filter the following table, select the column by which to filter, then enter filter criteria (wildcards: *, ?, %).		
application/DefaultApplication	1	appsvr1
application/ivtApp	1	appsvr1
application/query	1	appsvr1
server/appsrv2	1	appsvr1
server/server1	1	appsvr1
Total 19	Filtered total: 5	

Creating an application server

Updating the virtual host settings

- When you install applications, you associate a virtual host with each web module.
- When you create a new application server, the default_host virtual host is set as the default virtual host for web modules installed on the server.
- You can change this default in the web container settings for the application server or simply select a new virtual host when you install the applications

Creating an application server

Creating an application server template (optional)

To create an application server template based on an existing server:

1. Click **Servers** → **Server Types** → **WebSphere application servers**.
2. Click **Templates** at the top of the server list.
3. Click **New**.
4. Select a server from the list to build the template from, and click **OK**.
5. Enter a name and description for the template, and click **OK**.
6. Save your configuration.

Creating an application server

Application servers ? -

[Application servers > Server Templates](#)

Use this page to create an application server template. Server templates are copies of server configuration data that can be used as a starting point for creating servers.

Preferences

New... Delete

Select	Name ▾	Platform ▾	Version ▾	Description ▾
<input type="checkbox"/>	appsrv_85_template1	aix	8.5.0.0	Custom template of appserver1 V8.5 template

You can administer the following resources:

<input type="checkbox"/>	appsrv_85_template1	aix	8.5.0.0	Custom template of appserver1 V8.5 template
--------------------------	-------------------------------------	-----	---------	---

Total 1

Viewing the status of an application server

There are multiple ways to check the status of an application server:

- Use the server Status command on the system where the application server is running.
- In a distributed environment, you can view the status from the administrative console.
- The node for the application server must be active for the deployment manager to know the status of a server on that node.

Viewing the status of an application server

Using the administrative console

The screenshot shows the 'Application servers' page of an administrative console. At the top, there is a toolbar with buttons for New..., Delete, Templates..., Start, Stop, Restart, ImmediateStop, and Terminate. Below the toolbar is a section titled 'You can administer the following resources:' containing a table with three rows. The table columns are Select, Name, Node, Host Name, Version, Cluster Name, and Status. The data in the table is as follows:

Select	Name	Node	Host Name	Version	Cluster Name	Status
<input type="checkbox"/>	AppSrv_85_01	saw211-sys1Node01	saw211-sys1.itso.ral.ibm.com	ND 8.5.0.0	WAS_85_aix_cluster1	
<input type="checkbox"/>	AppSrv_85_02	saw211-sys1Node01	saw211-sys1.itso.ral.ibm.com	ND 8.5.0.0	WAS_85_aix_cluster1	
<input type="checkbox"/>	AppSrv_85_03	saw211-sys1Node01	saw211-sys1.itso.ral.ibm.com	ND 8.5.0.0		

Total 3

Viewing the status of an application server

Figure shows the icons and their corresponding status

Icon	Status	Description
	Started	The server is running.
	Partially stopped	The server is in the process of changing from a started state to a stopped state.
	Stopped	The server is not running.
	Unavailable	The server status cannot be determined.

Viewing the status of an application server

Using the `serverStatus` command

The syntax of the `serverStatus` command is:

```
serverStatus.bat(sh) [options]
```

The options are shown Example 7-5.

Example 7-5 `serverStatus` options

```
Usage: serverStatus <server name | -all>
[-logfile <filename>]
[-replacelog]
[-trace]
[-username <username>]
[-password <password>]
[-profileName <profile>]
[-help]
```

Viewing the status of an application server

If you have administrative security enabled, you must enter the user ID and password of an administrator ID. If you do not include it in the command, you are prompted for it for example, to view the status of a server, run the following command:

```
cd profile_home/bin
serverStatus.sh server_name -username adminID -password adminpw
```

To check the status of all servers on the node, run the following command:

```
cd profile_home/bin
serverStatus.sh -all -username adminID -password adminpw
```

Example 7-6 serverStatus example - AIX operating system

```
/opt/IBM/WebSphere/AppServer85/profiles/AppSrv_85_01/bin/serverStatus.sh -all  
-username admin85 -password admin85  
ADMU0116I: Tool information is being logged in file  
/opt/IBM/WebSphere/AppServer85/profiles/AppSrv_85_01/logs/serverStatus.log  
ADMU0128I: Starting tool with the AppSrv_85_01 profile  
ADMU0503I: Retrieving server status for all servers  
ADMU0505I: Servers found in configuration:  
ADMU0506I: Server name: nodeagent  
ADMU0506I: Server name: AppSrv_85_01  
ADMU0506I: Server name: ODR_85_1  
ADMU0506I: Server name: AppSrv_85_02  
ADMU0506I: Server name: k  
ADMU0506I: Server name: AppSrv_85_03  
ADMU0508I: The Node Agent "nodeagent" is STARTED  
ADMU0509I: The Application Server "AppSrv_85_01" cannot be reached. It appears  
to be stopped.  
ADMU0509I: The Application Server "ODR_85_1" cannot be reached. It appears to  
be stopped.  
ADMU0509I: The Application Server "AppSrv_85_02" cannot be reached. It appears  
to be stopped.  
ADMU0509I: The Server "k" cannot be reached. It appears to be stopped.  
ADMU0509I: The Application Server "AppSrv_85_03" cannot be reached. It appears  
to be stopped.
```

Viewing the status of an application server

From the job manager console

The screenshot shows the 'Display Resources' section of the Job Manager console. A context menu is open over the row for 'appsvr1'. The menu options are: All, Application, Server, Installation Manager, Package, Profile, and Package Group. The 'Installation Manager' option is selected. The table rows show the following information:

Select	Target	Version
<input checked="" type="checkbox"/>	appsvr1	XD 8.5.0.0 WXDOP 8.5.0.0 ND 8.5.0.0
<input type="checkbox"/>	saw211-sys1	

Total 2

Resources	Quantity	Target name
server/appsrv2	1	appsrv1
server/server1	1	appsrv1
Total 2		

Display the servers on a node

The status of the server is displayed, as shown in Figure .

Resource ID	Target name	Status
appsrv1/server/appsrv2	appsrv1	Stopped
Total 1		

Starting an application server

Using the administrative console to start a managed server

From the administrative console:

1. Click **Servers** → **Server Types** → **WebSphere application servers**.
2. Select the box to the left of each server that you want to start.
3. Click **Start**.
4. Verify the results in the Server status feedback window.

If there are any errors, check the log files for the application server process. The default location for the logs is:

- ▶ *profile_home/logs/server_name/SystemOut.log*
- ▶ *profile_home/logs/server_name/startServer.log*

Starting an application server

Using the startServer command

Example 7-7 startServer options

```
Usage: startServer <server> [options]
    options: -nowait
              -quiet
              -logfile <filename>
              -replacelog
              -trace
              -script [<script filename>] [-background]
              -timeout <seconds>
              -statusport <portnumber>
              -profileName <profile>
              -recovery
              -help
```

Starting an application server

startServer example

Example 7-8 shows an example of using the **startServer** command. Note that the user ID and password are not required to start the server.

Example 7-8 startServer example

```
/opt/IBM/WebSphere/AppServer85/profiles/AppSrv_85_01/bin/startServer.sh  
AppSrv_85_03  
ADMU0116I: Tool information is being logged in file  
/opt/IBM/WebSphere/AppServer85/profiles/AppSrv_85_01/logs/AppSrv_85_03/startServer  
.log  
ADMU0128I: Starting tool with the AppSrv_85_01 profile  
ADMU3100I: Reading configuration for server: AppSrv_85_03  
ADMU3200I: Server launched. Waiting for initialization status.  
ADMU3000I: Server AppSrv_85_03 open for e-business; process id is 749660
```

Starting an application server

Submit a job to the job manager

Choose the type of job that you want to perform. Optionally provide a description for the job.

→ Step 1: Choose a job type

Step 2: Choose job targets

Step 3: Specify job parameters

Step 4: Schedule the job

Step 5: Review the summary and submit the job

Choose a job type

Job type
Start server

Description
startServer

Next

startServer

Step 1: Choose a job type

→ Step 2: Choose job targets

Step 3: Specify job parameters

Step 4: Schedule the job

Step 5: Review the summary and submit the job

Choose job targets

Job type: Start server

Target groups

-- No groups --

Target names

appsrv1

Target authentication

User name

admin85

Password authentication

* Password

* Confirm password

Starting an application server

Step 1: Choose a job type

Step 2: Choose job targets

→ Step 3: Specify job parameters

Step 4: Schedule the job

Step 5: Review the summary and submit the job

Specify job parameters

Job type: Start server

* Server name

Node name

- Step 1: Choose a job type
- Step 2: Choose job targets
- Step 3: Specify job parameters
- Step 4: Schedule the job
- Step 5: Review the summary and submit the job

Schedule the job

Job type: Start server

Notification

Email addresses

Initial Availability

Specify when this job is first available.

- Make the job available now.
 Schedule availability

Date (MM/dd/yyyy)

 / /

Time (HH:mm:ss)

 : :

Expiration

Specify when this job is no longer available.

- Use default expiration - 1 days.
 Expire the job based on a date
Date (MM/dd/yyyy)
 / /
 Expire the job based on a duration

Expire after

 minutes

Job Availability Interval

Jobs can run repeatedly based on an interval. Specify the interval that the job is available.

Availability interval

 Run once

Previous Next Cancel

Starting an application server

Step 1: Choose a job type Step 2: Choose job targets Step 3: Specify job parameters Step 4: Schedule the job → Step 5: Review the summary and submit the job	<p>Review the summary and submit the job</p> <p>Summary of actions:</p> <table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="background-color: #4682B4; color: white; text-align: left; padding: 5px;">Options</th><th style="background-color: #4682B4; color: white; text-align: left; padding: 5px;">Values</th></tr></thead><tbody><tr><td style="text-align: left; padding: 5px;">Job type</td><td style="text-align: left; padding: 5px;">Start server</td></tr><tr><td style="text-align: left; padding: 5px;">Description</td><td style="text-align: left; padding: 5px;">startServer</td></tr><tr><td style="text-align: left; padding: 5px;">Target names</td><td style="text-align: left; padding: 5px;">appsvr1</td></tr><tr><td style="text-align: left; padding: 5px;">Initial availability</td><td style="text-align: left; padding: 5px;">Make the job available now.</td></tr><tr><td style="text-align: left; padding: 5px;">Expiration</td><td style="text-align: left; padding: 5px;">Use the default expiration.</td></tr><tr><td style="text-align: left; padding: 5px;">User name</td><td style="text-align: left; padding: 5px;">admin85</td></tr><tr><td style="text-align: left; padding: 5px;">Server name</td><td style="text-align: left; padding: 5px;">appsvr2</td></tr></tbody></table> <p style="text-align: center; margin-top: 10px;">Previous Finish Cancel</p>	Options	Values	Job type	Start server	Description	startServer	Target names	appsvr1	Initial availability	Make the job available now.	Expiration	Use the default expiration.	User name	admin85	Server name	appsvr2
Options	Values																
Job type	Start server																
Description	startServer																
Target names	appsvr1																
Initial availability	Make the job available now.																
Expiration	Use the default expiration.																
User name	admin85																
Server name	appsvr2																

Starting an application server

							Suspend	Resume	Delete	
Select	Job ID	Description	State	Activation Time	Expiration Time	Status Summary				
<input type="checkbox"/>	134015553016994487	startServer	Active	06/19/2012 19:25:30	06/20/2012 19:25:30					
Total 1										

Stopping an application server

Application Server Management						
New... Delete Templates... Start Stop Restart ImmediateStop Terminate						
Select	Name	Node	Host Name	Version	Cluster Name	Status
	AppSrv_85_01	saw211-sys1Node01	saw211-sys1.itso.ral.ibm.com	ND 8.5.0.0	WAS_85_aix_cluster1	
	AppSrv_85_02	saw211-sys1Node01	saw211-sys1.itso.ral.ibm.com	ND 8.5.0.0	WAS_85_aix_cluster1	
	AppSrv_85_03	saw211-sys1Node01	saw211-sys1.itso.ral.ibm.com	ND 8.5.0.0		

You can administer the following resources:

Resource	Node	Host Name	Version	Cluster Name	Status
AppSrv_85_01	saw211-sys1Node01	saw211-sys1.itso.ral.ibm.com	ND 8.5.0.0	WAS_85_aix_cluster1	
AppSrv_85_02	saw211-sys1Node01	saw211-sys1.itso.ral.ibm.com	ND 8.5.0.0	WAS_85_aix_cluster1	
AppSrv_85_03	saw211-sys1Node01	saw211-sys1.itso.ral.ibm.com	ND 8.5.0.0		

Total 3

Stopping an application server

From the administrative console, complete the following steps to stop an application server:

1. Click **Servers** → **Server Types** → **WebSphere application servers**.
2. Select the **box** to the left of each server you want to stop.
3. Click the appropriate stop option.

If there are any errors, check the log files for the application server process:

- ▶ *profile_home/logs/server_name/SystemOut.log*
- ▶ *profile_home/logs/server_name/stopServer.log*

Stopping an application server

Restarting all servers on a node

If you want to stop and then restart all the application servers on a node, complete the following steps from the administrative console:

1. Click System administration → Node agents.
2. Select the box to the left of the node agent.
3. Click Restart all Servers on Node

Stopping an application server

Stopping all servers in a cluster

If you want to stop all the servers in a cluster, complete the following steps from the administrative console:

1. Click Servers → Clusters → WebSphere application server clusters.
2. Select the box to the left of the cluster.
3. Click Stop or Immediate Stop

Stopping an application server

Restarting all servers in a cluster

If you want to stop and then restart all the servers in a cluster, complete the following steps from the administrative console:

1. Click Servers → Clusters → WebSphere application server clusters.
2. Select the box to the left of the cluster.
3. Click Ripplestart.

Stopping an application server

Example 7-9 stopServer command

```
Usage: stopServer <server> [options]
      options: -nowait
                -quiet
                -logfile <filename>
                -replacelog
                -trace
                -timeout <seconds>
                -statusport <portnumber>
                -conntype <connector type>
                -port <portnumber>
                -username <username>
                -password <password>
                -profileName <profile>
                -help
```

Stopping an application server

Example 7-10 stopServer command example

```
/opt/IBM/WebSphere/AppServer85/profiles/AppSrv_85_01/bin/stopServer.sh  
AppSrv_85_03 -username admin85 -password admin85  
ADMU0116I: Tool information is being logged in file  
/opt/IBM/WebSphere/AppServer85/profiles/AppSrv_85_01/logs/AppSrv_85_03/stopServer.  
log  
ADMU0128I: Starting tool with the AppSrv_85_01 profile  
ADMU3100I: Reading configuration for server: AppSrv_85_03  
ADMU3201I: Server stop request issued. Waiting for stop status.  
ADMU4000I: Server AppSrv_85_03 stop completed.
```

Viewing runtime attributes of an application server

To view runtime attributes using the administrative console:

1. Click Servers → Server Types → WebSphere application servers to display the list of servers.
2. Click the server name to access the detail page.
3. If the server is running, four tabs are displayed: Configuration, Reports, Operation and Runtime. If the server is not running, the Runtime tab is not displayed. Click the Runtime tab. Figure shows the Runtime tab and the information that it provides

Viewing runtime attributes of an application server

[Application servers > AppSrv_85_01](#)

Use this page to configure an application server. An application server is a server that provides services required to run enterprise applications.

Runtime Configuration Reports Operations

General Properties

Process ID
737326

Cell name
aix1_Cell_85_01

Node name
saw211-sys1Node01

State
Started

Current heap size
63 MB

Maximum heap size
256 MB

Server messaging

- [Messaging engines](#)

Troubleshooting

- ⊕ Diagnostic Provider service

Additional Properties

- [Transaction service](#)
- [Performance Monitoring Infrastructure \(PMI\)](#)
- [Product Information](#)

[Back](#)

[Application servers](#) > AppSrv_85_01

Use this page to configure an application server. An application server is a server that provides services required to run enterprise applications.

[Runtime](#) [Configuration](#) [Reports](#) [Operations](#)

General Properties

Name

AppSrv_85_01

Node name

sav211-sys1Node01

Run in development mode

Parallel start

Start components as needed

Access to internal server classes

Allow [▼](#)

Server-specific Application Settings

Classloader policy

Multiple [▼](#)

Class loading mode

Classes loaded with parent class loader first [▼](#)

[Apply](#) [OK](#) [Reset](#) [Cancel](#)

Container Settings

Session management

SIP Container Settings

Web Container Settings

Portlet Container Settings

EJB Container Settings

Container Services

Business Process Services

Applications

Installed applications

Server messaging

Messaging engines

Messaging engine inbound transports

WebSphere MQ link inbound transports

SIB service

Server Infrastructure

Java and Process Management

Administration

Java JMX

Communications

Ports

Messaging

Performance

Performance Monitoring Infrastructure (PMI)

Performance and Diagnostic Advisor Configuration

Security

Security domain

Default policy set bindings

JAX-WSE and JAX-RPC security runtime

Troubleshooting

NCRA access and HTTP error logging

Diagnostic trace service

Customizing application servers

General properties

The general properties consist of a few items that you can see immediately:

- Server name and node name is defined. You also have short name and unique ID for servers on z/OS.
- Run in development mode: Enable this option to streamline the startup time of an application server. Do not enable this setting on production servers.

Customizing application servers

Container settings

- Each application server has containers that run specific application components.
- This section in the configuration page for the server provides links to pages where you can modify the settings for the containers.

[Application servers](#) > [AppSrv_85_01](#) > Web container

Use this page to configure the web container.

Configuration

General Properties

Default virtual host:

Enable servlet caching

Disable servlet request and response pooling

Asynchronous Servlet Properties

* Number of timeout threads

Set timeout

milliseconds

Use thread pool to start Runnable objects

Use a work manager to start Runnable objects

* Work manager JNDI name:

Additional Properties

- [Asynchronous Request Dispatching](#)
- [Custom properties](#)
- [Web container transport chains](#)
- [Session management](#)

Customizing application servers

[Application servers](#) > [AppSrv 85_01](#) > EJB container

Specifies that an EJB container is a component of a J2EE application server that provides runtime services to EJB modules that can be deployed within it.

Configuration

General Properties

- * Passivation directory
\${USER_INSTALL_ROOT}/temp
- Inactive pool cleanup interval
30000 milliseconds
- Default data source JNDI name
(none)
- Enable stateful session bean failover using [memory-to-memory replication](#)
(Replication domains are defined, but the memory to memory settings have not been selected.)

Additional Properties

- [EJB cache settings](#)
- [EJB timer service settings](#)
- [EJB asynchronous method invocation settings](#)

Apply OK Reset Cancel

Customizing application servers

Container services

The following settings are available under the container services section:

- Application profiling service
- Transaction service
- Dynamic cache service
- Compensation service
- Internationalization service...etc

Customizing application servers

Business process services

The business process settings allow you to manage the following features:

- Activity session service
- Work area partition service
- Work area service

Customizing application servers

Applications

- Use the Installed Applications link to view the applications installed on this server.
- This link will display the collection of applications as links to the configuration page for each application.

Server messaging

- The server messaging settings provide configuration settings and information for the messaging services.

Customizing application servers

[Application servers > AppSrv_85_01 > Java SDKs](#)

This page lists the software development kits (SDKs) that are installed on the server. These SDKs are available to the servers.

[+ Preferences](#)

[Make Default](#)

Select	Name	Version	Location	Bits	Default
<input type="checkbox"/>	1.6_64	1.6	\${WAS_INSTALL_ROOT}/java	64	false
<input type="checkbox"/>	1.7_64	1.7	\${WAS_INSTALL_ROOT}/java_1.7_64	64	true

You can administer the following resources:

<input type="checkbox"/>	1.6_64	1.6	\${WAS_INSTALL_ROOT}/java	64	false
<input type="checkbox"/>	1.7_64	1.7	\${WAS_INSTALL_ROOT}/java_1.7_64	64	true

Total 2

Customizing application servers

Communications

Port Name	Port	Details
BOOTSTRAP_ADDRESS	9813	
SOAP_CONNECTOR_ADDRESS	8886	
ORB_LISTENER_ADDRESS	9106	
SAS_SSL_SERVERAUTH_LISTENER_ADDRESS	9423	
CSIV2_SSL_SERVERAUTH_LISTENER_ADDRESS	9424	
CSIV2_SSL_MUTUALAUTH_LISTENER_ADDRESS	9425	
WC_adminhost	9066	
WC_defaulthost	9084	
DCS_UNICAST_ADDRESS	9360	
WC_adminhost_secure	9049	
WC_defaulthost_secure	9447	
SIP_DEFAULTHOST	5068	
SIP_DEFAULTHOST_SECURE	5069	
OVERLAY_UDP_LISTENER_ADDRESS	11007	
OVERLAY_TCP_LISTENER_ADDRESS	11008	
IPC_CONNECTOR_ADDRESS	9638	
SIB_ENDPOINT_ADDRESS	7282	
SIB_ENDPOINT_SECURE_ADDRESS	7290	
SIB_MQ_ENDPOINT_ADDRESS	5562	
SIB_MQ_ENDPOINT_SECURE_ADDRESS	5582	

Customizing application servers

Performance

- These settings allow you to specify settings for the Performance Monitoring Infrastructure (PMI) and the Performance and Diagnostic Advisor Configuration framework.
- These performance monitoring settings are covered in lesson 16, “Monitoring distributed systems”

Application servers > AppSrv_85_01 > Thread pools

Use this page to specify a thread pool for the server to use. A thread pool enables server components to reuse threads instead of creating new threads at run time. Creating new threads is typically a time and resource intensive operation.

+ Preferences

New... **Delete**

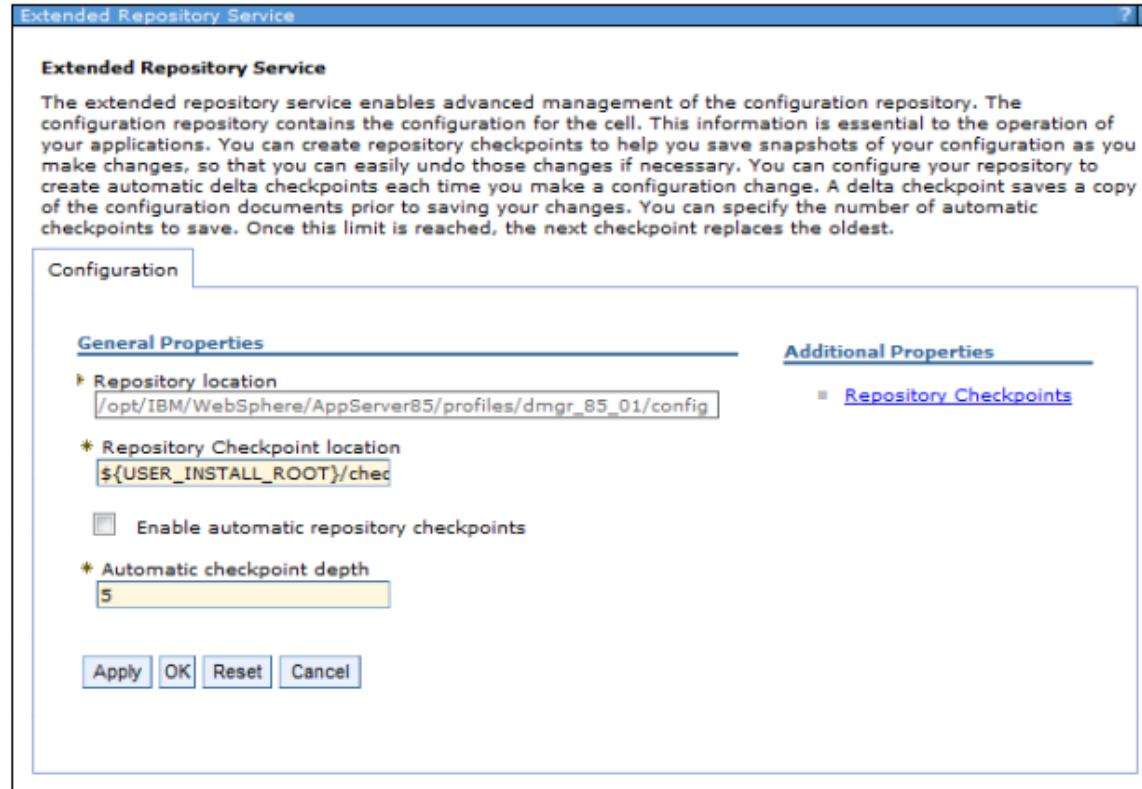
Select	Name ▾	Description ▾	Minimum Size ▾	Maximum Size ▾
--------	--------	---------------	----------------	----------------

You can administer the following resources:

<input type="checkbox"/>	Default		20	20
<input type="checkbox"/>	ORB.thread.pool		10	50
<input type="checkbox"/>	SIBFAPInboundThreadPool	Service integration bus FAP inbound channel thread pool	4	50
<input type="checkbox"/>	SIBFAPThreadPool	Service integration bus FAP outbound channel thread pool	4	50
<input type="checkbox"/>	SIBJMSRAThreadPool	Service Integration Bus JMS Resource Adapter thread pool	35	41
<input type="checkbox"/>	TCPChannel.DCS		20	20
<input type="checkbox"/>	WMQJCAResourceAdapter	WebSphere MQ Resource Adapter thread pool	10	50
<input type="checkbox"/>	WebContainer		50	50
<input type="checkbox"/>	server.startup	This pool is used by WebSphere during server startup.	1	3

Total 9

Repository checkpoints service



Resource Management						
		List of Resources				
Select	Name	Documents	Type	Sequence	Timestamp	Description
You can administer the following resources:						
<input type="checkbox"/>	Delta-1340326633507	1	DELTA	1340326633507	Jun 21, 2012 6:57:13 PM	Autosave delta image
<input type="checkbox"/>	Delta-1340326643478	1	DELTA	1340326643478	Jun 21, 2012 6:57:23 PM	Autosave delta image
<input type="checkbox"/>	Delta-1340326697287	1	DELTA	1340326697287	Jun 21, 2012 6:58:17 PM	Autosave delta image
<input type="checkbox"/>	Delta-1340327023566	36	DELTA	1340327023566	Jun 21, 2012 7:03:43 PM	Autosave delta image
<input type="checkbox"/>	Delta-1340327371909	1	DELTA	1340327371909	Jun 21, 2012 7:09:31 PM	Autosave delta image
<input type="checkbox"/>	Delta-1340327395212	1	DELTA	1340327395212	Jun 21, 2012 7:09:55 PM	Autosave delta image
<input type="checkbox"/>	major_update_checkpoint1	594	FULL	1340333165628	Jun 21, 2012 8:46:05 PM	checkpoint before app update
Total 7						

[Extended Repository Service](#) > [Repository Checkpoints](#) > major_update_checkpoint1

A repository checkpoint comprises a set of configuration documents saved before a configuration change was made. The set of documents saved in this checkpoint are available for inspection below.

Attributes

Type

FULL

Sequence

1340333165628

Timestamp

Jun 21, 2012 8:46:05
PM

Description

checkpoint before app
update

Preferences



Document

URI

You can administer the following resources:

AppServiceGroup.wsdl	cells/aix1_Cell_85_01/applications/WebSphereWSDM.ear/deployments/WebSphereWSDM/WebSphereWSDM.war/WEB-INF/classes/wsdl/AppServiceGroup.wsdl
Application.wsdl	cells/aix1_Cell_85_01/applications/WebSphereWSDM.ear/deployments/WebSphereWSDM/WebSphereWSDM.war/WEB-INF/classes/wsdl/Application.wsdl
ApplicationServer.wsdl	cells/aix1_Cell_85_01/applications/WebSphereWSDM.ear/deployments/WebSphereWSDM/WebSphereWSDM.war/WEB-INF/classes/wsdl/ApplicationServer.wsdl
CeaNotificationConsumer.wsdl	cells/aix1_Cell_85_01/applications/commsvc.ear/deployments/commsvc/commsvc.rest.war/WEB-INF/wsdl/CeaNotificationConsumer.wsdl
ControllerService.wsdl	cells/aix1_Cell_85_01/applications/commsvc.ear/deployments/commsvc/commsvc.rest.war/WEB-INF/wsdl/ControllerService.wsdl

Page: 1 of 119



Total 594

Working with nodes in a Network Deployment environment

- Managing nodes is a concept specific to a Network Deployment environment.
- Nodes are managed by the deployment manager through a process known as a node agent that resides on each node.
- To manage a node in a Network Deployment environment, the node must be defined, and the node agent on each WebSphere Application Server node must be started

Working with nodes in a Network Deployment environment

In this section, we cover the following topics:

- Starting a node agent
- Starting a node on z/OS using the START command
- Stopping a node agent
- Stopping a node on z/OS using the STOP command
- Stopping a node (the node agent and servers)
- Restarting a node agent

Working with nodes in a Network Deployment environment

Example 7-11 startNode command

Usage: `startNode [options]`

options:

- nowait
- quiet
- logfile <filename>
- replacelog
- trace
- script [<script filename>] [-background]
- timeout <seconds>
- statusport <portnumber>
- profileName <profile>
- recovery
- help

Working with nodes in a Network Deployment environment

Example 7-12 startNode command example for a node agent: AIX operating system

```
/opt/IBM/WebSphere/AppServer85/profiles/AppSrv85_01/bin/startNode.sh
ADMU0116I: Tool information is being logged in file
/opt/IBM/WebSphere/AppServer85/profiles/AppSrv85_01/logs/nodeagent/startServer.log
ADMU0128I: Starting tool with the AppSrv85_01 profile
ADMU3100I: Reading configuration for server: nodeagent
ADMU3200I: Server launched. Waiting for initialization status.
ADMU3000I: Server nodeagent open for e-business; process id is 712746
```

Working with nodes in a Network Deployment environment

Starting a node on z/OS using the START command

To start a node agent on z/OS using the **START** command, use the following format:

```
START nodeagent_procname,JOBNAME=server_shortname,  
ENV=cell_shortname.node_shortname.server_shortname
```

For example:

```
START WPACRA,JOBNAME=WPAGNTA,ENV=WPCELL.WPNODEA.WPAGNTA
```

Working with nodes in a Network Deployment environment

Stopping a node agent

To stop a node from the administrative console:

1. In the administrative console, click System administration → Node agents.
2. Select the box beside the node agent for the server, and click Stop.

To stop a node using a command prompt:

1. Open a command window.
2. Enter the stopNode command.

Example 7-13 The stopNode command

Usage: stopNode [options]

options: -nowait
 -stopservers [-saveNodeState]
 -quiet
 -logfile <filename>
 -replacelog
 -trace
 -timeout <seconds>
 -statusport <portnumber>
 -conntype <connector type>
 -port <portnumber>
 -username <username>
 -password <password>
 -profileName <profile>
 -help

Working with nodes in a Network Deployment environment

See Example 7-14 for a sample output of the **stopNode** command.

Example 7-14 stopNode command

```
/opt/IBM/WebSphere/AppServer85/profiles/AppSrv85_01/bin/stopNode.sh -username  
admin85 -password admin85  
ADMU0116I: Tool information is being logged in file  
/opt/IBM/WebSphere/AppServer85/profiles/AppSrv_85_01/logs/nodeagent/stopServ  
ADMU0128I: Starting tool with the AppSrv_85_01 profile  
ADMU3100I: Reading configuration for server: nodeagent  
ADMU3201I: Server stop request issued. Waiting for stop status.  
ADMU4000I: Server nodeagent stop completed.
```

Working with nodes in a Network Deployment environment

Stopping a node (the node agent and servers)

You can use the administrative console to stop a node and its servers with one action. Complete the following steps:

1. From the administrative console, click **System administration** → **Nodes**.
2. Select the box beside the node, and click **Stop**.

Restarting a node agent

You can restart a running node agent from the administrative console by completing the following steps from the administrative console:

1. Click **System administration** → **Node agents**.
2. Select the box beside the node agent for the server, and click **Restart**.

Node agent synchronization

Automatic synchronization

Automatic configuration synchronization between the node and the deployment manager is enabled by default. You can configure the interval between synchronizations in the administrative console by completing the following steps:

1. Expand **System administration** → **Node agents** in the administrative console.
2. Select the node agent process on the appropriate server to open the Properties page.
3. In the Additional Properties section, click **File synchronization service**.
4. Configure the synchronization interval. By default, the synchronization interval is set to one minute.

The default synchronization interval on z/OS is five minutes.

Node agent synchronization

Console preferences

Specify user preferences for the administrative console workspace.

Turn on workspace automatic refresh

No confirmation on workspace discard

Use default scope

Show the help portlet

Enable command assistance notifications

Log command assistance commands

Synchronize changes with Nodes

[Bidirectional support options](#)

Node agent synchronization

Forced synchronization

Synchronization can be forced by clicking System administration → Nodes. Select the box beside a node, and click Synchronize or Full Synchronization:

- Synchronize performs an immediate synchronization on the selected node.
- This type of synchronization is optimized for performance and only synchronizes changed files. If there are issues with manually edited files, this action might not result in a complete synchronization.

Node agent synchronization

The syntax of the **syncNode** command is:

```
syncNode.bat(sh) [options]
```

The options are shown in Example 7-15.

Example 7-15 syncNode command

```
Usage: syncNode dmgr_host [dmgr_port] [-conntype <type>] [-stopservers]
[-restart] [-quiet] [-nowait] [-logfile <filename>] [-replacelog]
[-trace] [-username <username>] [-password <password>]
[-localusername <localusername>] [-localpassword <localpassword>]
[-profileName <profile>] [-help]
```

Node agent synchronization

Example 7-16 syncNode usage examples

```
/opt/IBM/WebSphere/AppServer85/profiles/AppSrv_85_01/bin/syncNode.sh saw211-sys1  
8884 -stopservers -restart -username admin85 -password admin85  
ADMU0116I: Tool information is being logged in file  
          /opt/IBM/WebSphere/AppServer85/profiles/AppSrv_85_01/logs/syncNode.log  
ADMU0128I: Starting tool with the AppSrv_85_01 profile  
ADMU0401I: Begin syncNode operation for node saw211-sys1Node01 with Deployment  
            Manager saw211-sys1: 8884  
ADMU0505I: Servers found in configuration:  
ADMU0506I: Server name: nodeagent  
ADMU0506I: Server name: AppSrv_85_01  
ADMU0506I: Server name: ODR_85_1  
ADMU0506I: Server name: AppSrv_85_02  
ADMU0506I: Server name: AppSrv_85_03  
ADMU2010I: Stopping all server processes for node saw211-sys1Node01  
ADMU0510I: Server AppSrv_85_01 is now STOPPED  
ADMU0512I: Server ODR_85_1 cannot be reached. It appears to be stopped.
```

Node agent synchronization

```
ADMU0512I: Server AppSrv_85_02 cannot be reached. It appears to be stopped.  
ADMU0512I: Server AppSrv_85_03 cannot be reached. It appears to be stopped.  
ADMU0510I: Server nodeagent is now STOPPED  
ADMU0016I: Synchronizing configuration between node and cell.  
ADMU0018I: Launching Node Agent process for node: saw211-sys1Node01  
ADMU0020I: Reading configuration for Node Agent process: nodeagent  
ADMU0022I: Node Agent launched. Waiting for initialization status.  
ADMU0030I: Node Agent initialization completed successfully. Process id is:  
737330  
ADMU0402I: The configuration for node saw211-sys1Node01 has been synchronized  
with Deployment Manager saw211-sys1: 8884
```

Removing a node from a cell

Using the administrative console

- From the administrative console, complete the following steps:
 1. Click System administration → Nodes.
 2. Select the check box beside the node you want to remove, and click Remove Node.

Removing a node from a cell

Using the **removeNode** command

The **removeNode** command detaches a node from a cell and returns it to a stand-alone configuration.

The syntax of the **removeNode** command is:

```
removeNode.bat(sh) [options]
```

The options are shown in Example 7-17.

Example 7-17 removeNode command

```
Usage: removeNode [-force] [-quiet] [-nowait] [-statusport <port>] [-logfile  
<filename>]  
[-replacelog] [-trace] [-username <username>] [-password <password>]  
[-profileName <profile>] [-help]
```

Example 7-18 removeNode example

```
/opt/IBM/WebSphere/AppServer85/profiles/AppSrv_85_01/bin/removeNode.sh  
-profileName AppSrv_85_01 -username admin85 -password admin85  
ADMU0116I: Tool information is being logged in file  
  
/opt/IBM/WebSphere/AppServer85/profiles/AppSrv_85_01/logs/removeNode.log  
ADMU0128I: Starting tool with the AppSrv_85_01 profile  
ADMU2001I: Begin removal of node: saw211-sys1Node01  
ADMU0009I: Successfully connected to Deployment Manager Server:  
          saw211-sys1:8884  
ADMU0505I: Servers found in configuration:  
ADMU0506I: Server name: nodeagent  
ADMU0506I: Server name: AppSrv_85_01  
ADMU0506I: Server name: ODR_85_1  
ADMU0506I: Server name: AppSrv_85_02  
ADMU0506I: Server name: AppSrv_85_03  
ADMU2010I: Stopping all server processes for node saw211-sys1Node01  
ADMU0512I: Server AppSrv_85_01 cannot be reached. It appears to be stopped.  
ADMU0512I: Server ODR_85_1 cannot be reached. It appears to be stopped.  
ADMU0512I: Server AppSrv_85_02 cannot be reached. It appears to be stopped.  
ADMU0512I: Server AppSrv_85_03 cannot be reached. It appears to be stopped.  
ADMU0510I: Server nodeagent is now STOPPED  
ADMU2021I: Removing all servers on this node from all clusters in the cell.  
ADMU2014I: Restoring original configuration.  
ADMU2017I: The local original configuration has been restored.  
ADMU0306I: Note:  
ADMU2031I: Any applications that were uploaded to the aix1_Cell_85_01 cell  
          configuration during addNode using the -includeapps option are not  
          uninstalled by removeNode.  
ADMU0307I: You might want to:
```

Removing a node from a cell

ADMU2032I: Use wsadmin or the Administrative Console to uninstall any such applications from the Deployment Manager.

ADMU0306I: Note:

ADMU2033I: Any buses that were uploaded to the aix1_Cell_85_01 cell configuration during addNode using the -includebuses option are not uninstalled by removeNode.

ADMU0307I: You might want to:

ADMU2034I: Use wsadmin or the Administrative Console to uninstall any such buses from the Deployment Manager.

ADMU2024I: Removal of node saw211-sys1Node01 is complete.

Renaming a node

The **renameNode** command allows you to modify the node name of a federated server.

renameNode command

The syntax of the **renameNode** command is:

```
renameNode.bat(sh) [options]
```

The options are shown in Example 7-19.

Example 7-19 renameNode command syntax

```
Usage: renameNode dmgr_host dmgr_port node_name [-nodeshortname <name>]  
      [-conntype <type>] [-logfile <filename>] [-trace]  
      [-username <username>] [-password <password>] [-help]
```

Recovering an existing node

- You can use the `-asExistingNode` option of the `addNode` command to recover and move nodes of a deployment manager.
- Using the `-asExistingNode` option, federates a new custom node to a deployment manager as an existing node.

Recovering an existing node

Other `addNode` options for node configuration are incompatible with the `-asExistingNode` option. Do not use `-asExistingNode` with the following incompatible options:

- ▶ `-includeapps`
- ▶ `-includebuses`
- ▶ `-startingport`
- ▶ `-portprops`
- ▶ `-nodeagentshortname`
- ▶ `-nodegroupname`
- ▶ `-registerservice`
- ▶ `-serviceusername`
- ▶ `-servicepassword`
- ▶ `-coregroupname`
- ▶ `-excludesecuritydomains`

Node groups

- In a Network Deployment environment, you can have nodes in a cell with different capabilities.
- However, there are restrictions on how the nodes can coexist.
- Node groups are created to group nodes of similar capability together to allow validation during system administration processes.
- Effectively, this situation means that a node group establishes a boundary from which servers can be selected for a cluster.

Node groups

Node groups

Use this page to manage node groups. A node group is a collection of application server nodes. A node group establishes a boundary for cluster creation. All cluster members must be on nodes that are members of the same node group. Nodes that are organized into a node group need enough capabilities in common to ensure that clusters formed across those nodes can host the same application in each cluster member. A node must be a member of at least one node group and can be a member of more than one node group. To delete a node group, it must be empty.

+ Preferences

New... Delete

Select Name ↑ Members ↑ Description ↑

You can administer the following resources:

	DefaultNodeGroup	2	WebSphere Default Node Group.
--	----------------------------------	---	-------------------------------

Total 1

Node groups

General Properties		Additional Properties
Name <input type="text" value="DefaultNodeGroup"/>		<ul style="list-style-type: none"><input type="checkbox"/> Custom properties<input type="checkbox"/> Node group members
Members <input type="text" value="2"/>		
Description <div style="border: 1px solid #ccc; padding: 5px;"><p>WebSphere Default Node Group.</p><div style="text-align: right; margin-top: -10px;">...</div></div>		
<input type="button" value="Apply"/> <input type="button" value="OK"/> <input type="button" value="Reset"/> <input type="button" value="Cancel"/>		

Node groups

[Node groups](#) > [DefaultNodeGroup](#) > **Node group members**

Use this page to view and configure the nodes in this node group.

[+ Preferences](#)

[Add](#) [Remove](#)

Select	Name
<input type="checkbox"/>	aix1_CellManager_85_01
<input type="checkbox"/>	saw211-sys1Node01

You can administer the following resources:

<input type="checkbox"/>	aix1_CellManager_85_01
<input type="checkbox"/>	saw211-sys1Node01

Total 2

Working with clusters

Work is distributed across the servers in the cluster based on weights assigned to each application server. If all cluster members have identical weights, work is distributed among the cluster members equally. Servers with higher weight values are given more work. An example formula for determining routing preference is:

% routed to Server1 = $\text{weight1} / (\text{weight_1} + \text{weight_2} + \dots + \text{weight_n})$

- In the formula, n represents the number of cluster members in the cluster. Consider the capacity of the system that hosts the application server.

Working with clusters

Creating application server clusters

- When you create a cluster, you have the option to create an empty cluster (no servers) or to reate the cluster with one or more servers.
- The first application server added to the cluster acts as a template for subsequent servers

Working with clusters

Using the deployment manager administrative console

To create a new cluster:

1. Click Servers → Clusters → WebSphere application server clusters.
2. Click New.
3. Enter the information for the new cluster:
 - Enter a cluster name of your choice.
 - On z/OS, you are also asked for the short name for the cluster.

Working with clusters

Create a new cluster

?

=

Create a new cluster

→ Step 1: Enter basic cluster information

Step 2: Create first cluster member

Step 3: Create additional cluster members

Step 4: Summary

Enter basic cluster information

* Cluster name
WAS_85_alx_cluster

Prefer local. Specifies whether enterprise bean requests will be routed to the node on which the client resides when possible.

Configure HTTP session memory-to-memory replication

Next Cancel

This screenshot shows the 'Create a new cluster' wizard in progress, specifically Step 1: Enter basic cluster information. The main panel title is 'Enter basic cluster information'. A required field 'Cluster name' is filled with 'WAS_85_alx_cluster'. Below it are two configuration options: 'Prefer local' (checked) and 'Configure HTTP session memory-to-memory replication'. On the left sidebar, the steps are listed: Step 1 (current), Step 2, Step 3, and Step 4: Summary. At the bottom are 'Next' and 'Cancel' buttons.

Step 1: Enter basic cluster information

→ Step 2: Create first cluster member

Step 3: Create additional cluster members

Step 4: Summary

Create first cluster member

The first cluster member determines the server settings for the cluster members. A server configuration template is created from the first member and stored as part of the cluster data. Additional cluster members are copied from this template.

* Member name
appsrv85_01

Select node
saw211-sys1Node01(ND 8.5.0.0)

* Weight
2 (0..100)

Generate unique HTTP ports

Core Group
DefaultCoreGroup

Select how the server resources are promoted in the cluster.
Cluster

Select basis for first cluster member:

Create the member using an application server template.
default

Create the member using an existing application server as a template.
(none)

Create the member by converting an existing application server.
(none)

None. Create an empty cluster.

Previous | Next | Cancel

Step 1: Enter basic cluster information

Step 2: Create first cluster member

→ Step 3: Create additional cluster members

Step 4: Summary

Create additional cluster members

Enter information about this new cluster member, and click Add Member to add this cluster member to the member list. A server configuration template is created from the first member, and stored as part of the cluster data. Additional cluster members are copied from this template.

* Member name

Select node

 saw211-sys1Node01(ND 8.5.0.0)

* Weight

 2 (0..100)

Generate unique HTTP ports

Add Member

Use the Edit function to modify the properties of a cluster member in this list. Use the Delete function to remove a cluster member from this list. You are not allowed to edit or remove the first cluster member.

	<input type="button"/> Edit	<input type="button"/> Delete			
	<input type="checkbox"/>	<input type="checkbox"/>			
Select	Member name	Nodes	Version	Weight	
	<input type="checkbox"/>	appsrv85_01	saw211-sys1Node01	ND 8.5.0.0	2
	<input type="checkbox"/>	appsrv85_02	saw211-sys1Node01	ND 8.5.0.0	2
Total 2					

Previous

Next

Cancel

Working with clusters

Using cluster member templates

To view a cluster's member templates using the administrative console, complete the following steps:

1. Click **Servers** → **Clusters** → **WebSphere application server clusters**.
2. Click the cluster name.
3. Under the Additional Properties sections, click **Cluster members**.
4. Click **Templates**

Working with clusters

To modify the attributes of a cluster's member using the administrative console:

1. Click **Servers** → **Clusters** → **WebSphere application server clusters**.
2. Click the cluster name.
3. Under the Additional Properties sections, click **Cluster members**.
4. Click the cluster member to open the server configuration window where you can make your change.

Working with clusters

Creating the cluster

To create an application server cluster from the job manager:

1. Click **Jobs → Submit**.
2. Click the **Create cluster** job type.
3. Select the **deployment manager** as the job target.

Enter the user ID and password with administrative authority on the deployment manager.

4. Specify the job parameters, as shown in Figure :
 - Specify the name of the new cluster.

Step 1: Choose a job type

Step 2: Choose job targets

→ Step 3: Specify job parameters

Step 4: Schedule the job

Step 5: Review the summary and submit the job

Specify job parameters

Job type: Create cluster

* Cluster name
Cluster_85_3

Prefer local

Cluster type
Application Server

Short name

Additional job parameters...

Replication domain

Create domain

Convert server

Server node

Server name

Member weight

Node group

Replication entry

Previous **Next** **Cancel**

Working with clusters

Submit a job to the job manager

Enter the parameters for the job. The parameters vary based on the type of job that you previously selected.

Step 1: Choose a job type
Step 2: Choose job targets
→ Step 3: Specify job parameters
Step 4: Schedule the job
Step 5: Review the summary and submit the job

Specify job parameters

Job type: Create cluster member

* Cluster name: Cluster_85_3

* Member node: saw211-sys1Node01

* Member name: server85_1_c3

Member weight:

Member UUID:

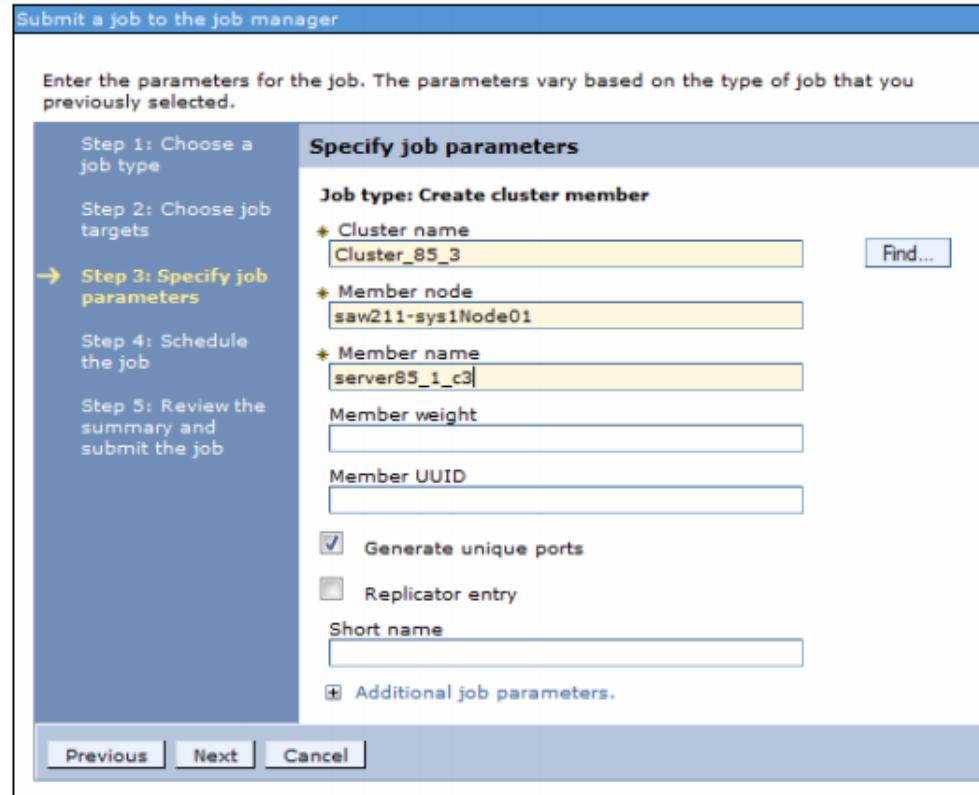
Generate unique ports

Replicator entry

Short name:

+ Additional job parameters.

Previous Next Cancel



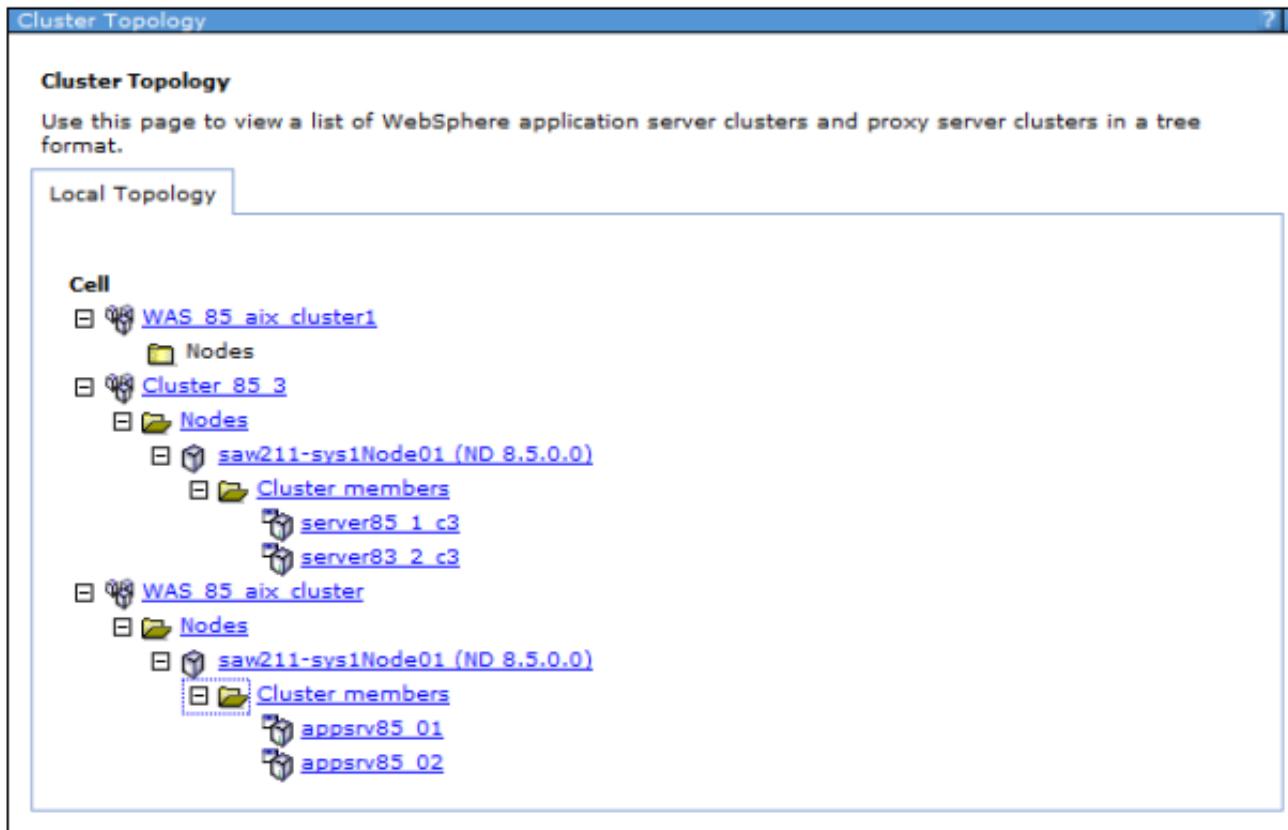


Figure 7-54 Cluster topology view

Select a server to get to the configuration window for the application server.

Managing clusters

Using the administrative console

To display and manage the application server clusters:

1. Click **Servers** → **Clusters** → **WebSphere application server clusters**.
2. Select each cluster you want to work with, and select one of the following options:
 - Start: Use this option to start all servers in the cluster.
 - Stop: Use this option to stop all servers in the cluster. This option allows the server to finish existing requests and allows failover to another member of the cluster.
 - Ripplestart: Use this option to stop and then start all servers in the cluster one at a time.
 - ImmediateStop: Stop all servers immediately.
 - Delete: Deletes the cluster and all servers in the cluster.

Working with virtual hosts

- A virtual host is a configuration enabling a single host machine to resemble multiple host machines.
- It consists of a host alias or aliases, which consist of a host name and a port number.
- If you specify an asterisk (*) as a host name, all host names and IP addresses that the web server can receive are mapped to that virtual host.

Creating and updating virtual hosts

To create a new virtual host:

1. Click **Environment** → **Virtual hosts**, and then click **New**.
2. Enter a name for the virtual host, and click **Apply**. Note that two links become active: Host Aliases and MIME Types.
3. Click **Host Aliases** in the Additional Properties pane.
4. Click **New**.
5. Enter values for the Host Name and Port fields, and click **OK**.

Creating and updating virtual hosts

6. Save your changes.

Host aliases can also be updated for virtual hosts through the administrative console. To update, complete the following steps:

1. Click **Environment** → **Virtual hosts**.
2. Click the virtual host name to open the configuration page.
3. Click **Host Aliases** in the Additional Properties pane.

Managing applications

WebSphere Application Server v9 supports J2EE 1.3, J2EE 1.4, Java EE 5, and Java EE 6, which we refer to as enterprise applications. WebSphere Application Server v9 can run the following types of applications:

- Java EE applications
- Portlet applications
- Session Initiation Protocol applications
- Business-level applications
- OSGi applications (New in Version 8)

Managing applications

Managing enterprise applications: Administrative console

- To view and manage applications using the administrative console, click Applications —> Application Types —> WebSphere enterprise Applications.
- In the window, you see the list of installed applications and options for performing application management tasks.
- Select one or more applications by selecting the box to the left of the application name and then click an action to perform.

Managing applications

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

Select Name Application Status

You can administer the following resources:

	DefaultApplication	
--	------------------------------------	--

Total 1

This screenshot shows the 'Enterprise Applications' management interface. At the top, there's a toolbar with buttons for Start, Stop, Install, Uninstall, Update, Rollout Update, Remove File, Export, Export DDL, and Export File. Below the toolbar is a search bar with fields for 'Select' and 'Name'. To the right of the search bar is a 'Application Status' button. The main area displays a table with one row, where the first column contains an icon, the second column contains the application name 'DefaultApplication', and the third column contains an edit icon. At the bottom left, it says 'Total 1'.

Managing applications

Preventing an enterprise application from starting on a server

1. From the administrative console, click **Applications** → **Application Types** → **WebSphere enterprise applications**.
2. Click the application name to open the configuration.
3. In the Detail Properties section, select **Target specific application status**.
4. Select the server for which you want to disable the application.
5. Click **Disable Auto Start**.
6. Save the configuration.

Viewing application details

To view the application deployment descriptor for an application:

1. Click **Applications** → **Application Types** → **WebSphere enterprise applications**.
2. Click the application name in which you are interested.
3. In the Detail Properties section, click the **Configuration** tab → **View Deployment Descriptor**.

Managing applications

Enterprise Applications

[Enterprise Applications](#) > [DefaultApplication](#) > Deployment Descriptor

Expand and collapse the application deployment descriptor data to view.

[Expand All](#) [Collapse All](#)

```
<application id="Application_ID" >
  <display-name> DefaultApplication.ear</display-name>
  <description> This is the IBM WebSphere Application Server Default Application.</description>
  <module id="WebModule_1" >
    <web>
      <web-uri> DefaultWebApplication.war</web-uri>
      <context-root> /</context-root>
    </web>
  </module>
  <module id="EjbModule_1" >
    <ejb> Increment.jar</ejb>
  </module>
  <security-role id="SecurityRole_1" >
    <description> All Authenticated users role.</description>
    <role-name> All Role</role-name>
  </security-role>
</application>
```

Managing applications

Enterprise Applications

Enterprise Applications > DefaultApplication > Manage Modules > Increment.jar

Specifies a server-module installation binding for an EJB module.

Configuration

General Properties

* URI

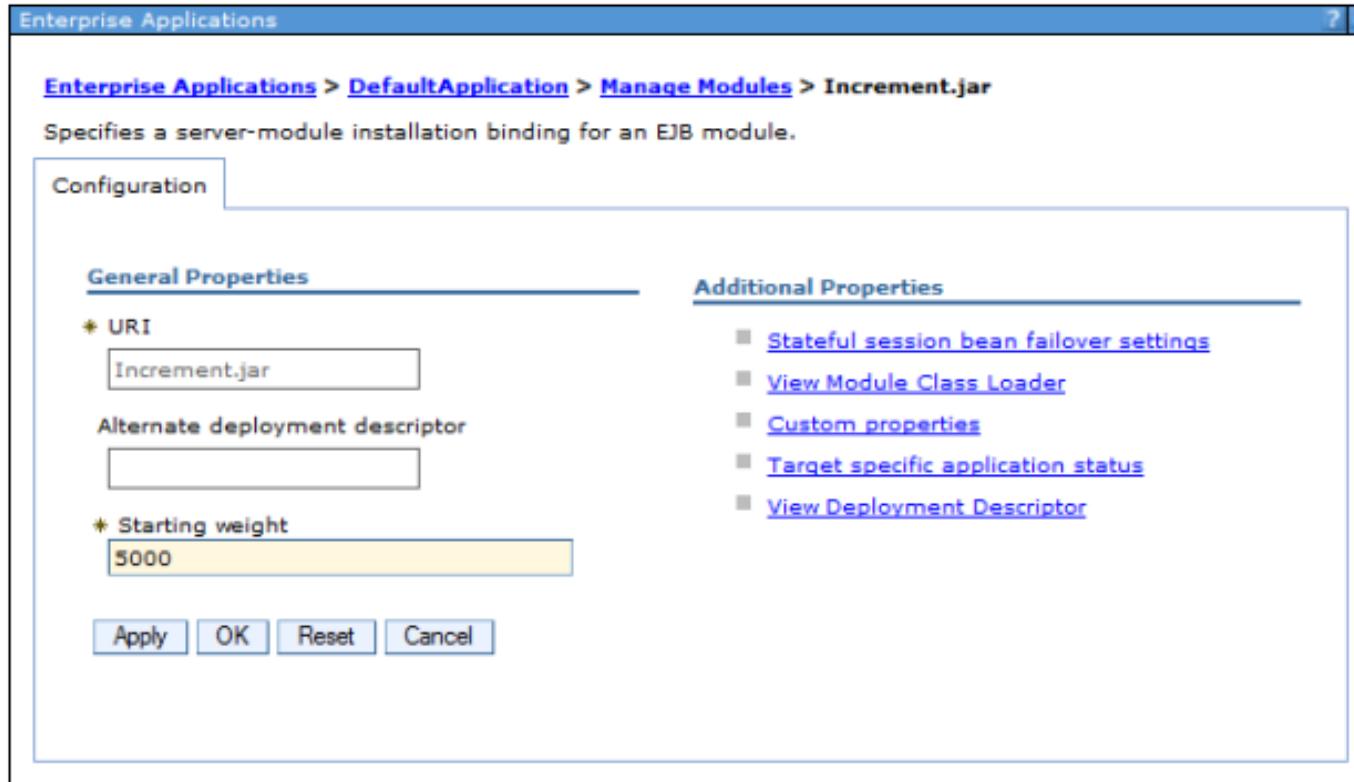
Alternate deployment descriptor

* Starting weight

Additional Properties

- [Stateful session bean failover settings](#)
- [View Module Class Loader](#)
- [Custom properties](#)
- [Target specific application status](#)
- [View Deployment Descriptor](#)

Apply OK Reset Cancel



[Enterprise Applications](#) > [DefaultApplication](#) > [Manage Modules](#) > [DefaultWebApplication.war](#)

Use this page to configure an instance of a deployed web module in the application. This page contains deployment-specific information for a web module and session management settings.

Configuration

[General Properties](#)

* URI

Alternate deployment descriptor

* Starting weight

* Class loader order

 [Additional Properties](#)

- [View Module Class Loader](#)
- [Custom properties](#)
- [Target specific application status](#)
- [View Deployment Descriptor](#)
- [Session Management](#)
- [Web Module Proxy Configuration](#)

Managing applications

Finding a URL for a servlet or JSP

To find the URL for a servlet or JSP:

1. Find the context root of the web module containing the servlet.
2. Find the URL for the servlet.
3. Find the virtual host where the web module is installed.
4. Find the server or cluster on which the application is installed.
5. Find the aliases by which the virtual host is known.
6. Combine the virtual host alias, context root, and URL pattern to form the URL request of the servlet/JSP.

Managing applications

Enterprise Applications

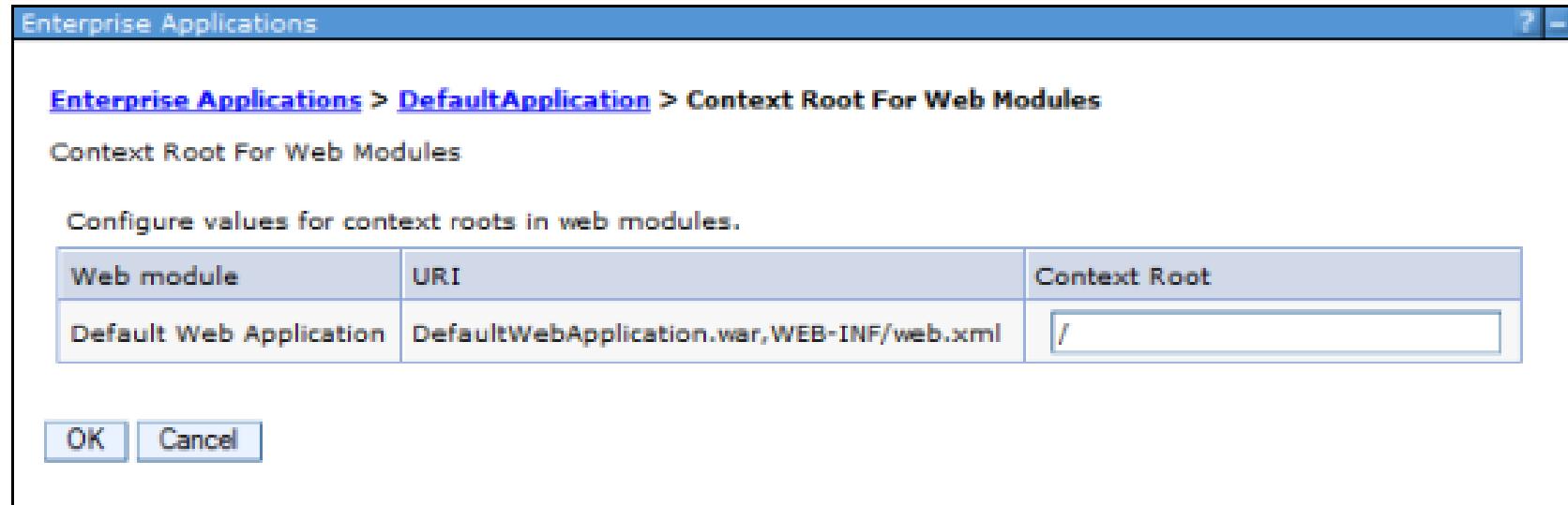
Enterprise Applications > DefaultApplication > Context Root For Web Modules

Context Root For Web Modules

Configure values for context roots in web modules.

Web module	URI	Context Root
Default Web Application	DefaultWebApplication.war,WEB-INF/web.xml	/

OK Cancel



[Enterprise Applications](#) > [DefaultApplication](#) > [Manage Modules](#) > [DefaultWebApplication.war](#) > Deployment Descriptor

Expand and collapse the application deployment descriptor data to view.

[Expand All](#)

[Collapse All](#)

```
<web-app id="WebApp_ID" >
    <display-name> Default Web Application</display-name>
    <description> This is the IBM WebSphere Application Server Default Web Application.</description>
    [+] <servlet id="Servlet_1" >
    [+] <servlet id="Servlet_2" >
    [+] <servlet id="Servlet_3" >
    [-] <servlet-mapping id="ServletMapping_1" >
        <servlet-name> Snoop Servlet</servlet-name>
        <url-pattern> /snoop/*</url-pattern>
    </servlet-mapping>
    [-] <servlet-mapping id="ServletMapping_2" >
        <servlet-name> Hello Pervasive Servlet</servlet-name>
        <url-pattern> /hello</url-pattern>
    </servlet-mapping>
    [-] <servlet-mapping id="ServletMapping_3" >
        <servlet-name> Hit Count Servlet</servlet-name>
        <url-pattern> /hitcount</url-pattern>
    </servlet-mapping>
    [-] <welcome-file-list id="WelcomeFileList_1" >
    [-] <error-page id="ErrorPage_1" >
    [-] <security-constraint id="SecurityConstraint_1" >
    [-] <security-role id="SecurityRole_1" >
    [-] <ejb-ref id="EjbRef_1" >
</web-app>
```

Managing applications

Enterprise Applications

Enterprise Applications > DefaultApplication > Virtual hosts

Virtual hosts

Specify the virtual host for the Web modules that are contained in your application. You can install Web modules on the same virtual host or disperse them among several hosts.

Apply Multiple Mappings

Select	Web module	Virtual host
<input type="checkbox"/>	Default Web Application	default_host <input type="button" value="▼"/>

OK Cancel

This screenshot shows the 'Virtual hosts' configuration dialog for the 'DefaultApplication' under 'Enterprise Applications'. It includes a descriptive text about specifying virtual hosts for web modules, a checkbox for applying multiple mappings, and a table for mapping web modules to virtual hosts. The table has columns for 'Select', 'Web module', and 'Virtual host'. A single entry maps the 'Default Web Application' to the 'default_host'. At the bottom are 'OK' and 'Cancel' buttons.

Virtual Hosts

Virtual Hosts > [default host](#) > Host Aliases

Use this page to edit, create, or delete a domain name system (DNS) alias by which the virtual host is known.

+ Preferences

New... Delete

Select Host Name Port

You can administer the following resources:

	*	9084
	*	80
	*	9447
	*	5073
	*	5070
	*	443
	*	9088
	*	9457
	*	9089
	*	9460

Total 10

Enabling process restart on failure

- Take thread dumps
- Take JVM heap dumps
- Generate a SNMP trap
- Place server in maintenance mode
- Place server in maintenance mode and break affinity
- Place server out of maintenance mode
- Restart server

Step 1: Define health policy general properties

→ Step 2: Define health policy health condition properties

Step 3: Specify members to be monitored

Step 4: Confirm health policy creation

Define health policy health condition properties

The memory condition: excessive memory usage will look for excessive memory utilization for each server that is a member of the policy. It detects general memory consumption by detecting if a JVM's heap size has grown over a configured percentage of the maximum heap size for a configured period of time.

Health condition properties

* JVM heap size

90 %

* Offending time period

2

Minutes

Health management monitor reaction

Reaction mode

Automatic

Take the following actions when the health condition breaches

Add Action...	Remove Action	Move Up	Move Down
<input type="checkbox"/>	<input type="checkbox"/>		
Select	Step	Action	
<input type="checkbox"/>	1	Place server in maintenance mode and break affinity	
<input type="checkbox"/>	2	Take thread dumps	
<input type="checkbox"/>	3	Take JVM heap dumps	
<input type="checkbox"/>	4	Restart server	
<input type="checkbox"/>	5	Take JVM heap dumps	
<input type="checkbox"/>	6	Place server out of maintenance mode	

Enabling process restart on failure

The two reaction modes for the health management monitor are:

- **Supervise:** When the health condition is reached, a task is submitted with a suggested plan of action that is automatically carried out if the task is approved.
- **Automatic:** When the health condition is reached, the actions are automatically carried out in the order you previously defined.

Syntax

Enter WASService.exe with no arguments to get a list of the valid formats, as shown in Example 7-20.

Example 7-20 WASService command format

```
Usage: WASService.exe (with no arguments displays this help)
    || -add <service name>
        -serverName <Server>
        -profilePath <Server's Profile Directory>
            [-wasHome <WebSphere Install Directory>]
            [-configRoot <Config Repository Directory>]
            [-startArgs <additional start arguments>]
            [-stopArgs <additional stop arguments>]
            [-userid <execution id> -password <password>]
            [-logFile <service log file>]
            [-logRoot <server's log directory>]
            [-encodeParams]
            [-restart <true | false>]
            [-startType <automatic | manual | disabled>]
    || -remove <service name>
    || -start <service name> [optional startServer.bat parameters]
    || -stop <service name> [optional stopServer.bat parameters]
    || -status <service name>
    || -encodeParams <service name>
```

Enabling process restart on failure

- Be aware of the following considerations when using the WASService command: When adding a new service, the --serverName argument is mandatory.
- The serverName is the process name. If in doubt, use the serverstatus -all command to display the processes.
- For a deployment manager, the serverName is dmgr.
- For a node agent, the server name is nodeagent, and for a server, it is the server name.
- The -profilePath argument is mandatory. It specifies the home directory for the profile.

Enabling process restart on failure

Examples

Example 7-21 shows how to use the **WASService** command to add a node agent as a Windows service.

Example 7-21 Registering a deployment manager as a Windows 7 service

```
D:\was85\IBM\WebSphere\AppServer\bin>runas /user:IBM-CMierlea\admin  
"D:\was85\IBM\WebSphere\AppServer\bin\WASService -add "dmgr" -servername dmgr -profilePath  
"D:\was85\IBM\WebSphere\AppServer_85_01" -restart true"  
Enter the password for IBM-CMierlea\admin:  
Attempting to start D:\was85\IBM\WebSphere\AppServer\bin\WASService -add dmgr -servername  
dmgr -profilePath D:\was85\IBM\WebSphere\AppServer\profiles\dmgr_85_01 -restart true as  
user "IBM-CM  
..  
D:\was85\IBM\WebSphere\AppServer\bin>
```

Enabling process restart on failure

Services				
IBM WebSphere Application Server V8.5 - IBM- CMierleaCellManager_02_85	Name	Description	Status	Startup Type
	IBM HTTP Server V8.0	IBM_HTTP_Server/8.0.0.3 ...	Started	Manual
	IBM Standard Asset Manager Service		Started	Automatic
Stop the service	IBM WebSphere Application Server V7.0 - IBM-CMierleaCellManager01	Controls the running of a...	Manual	
Restart the service	IBM WebSphere Application Server V7.0 - WebSphere_Portal_wp7	Controls the running of a...	Manual	
	IBM WebSphere Application Server V7.0 - wp7	Controls the running of a...	Manual	
	IBM WebSphere Application Server V8.0 - IBM-CMierleaANode01	Controls the running of a...	Manual	
	IBM WebSphere Application Server V8.0 - IBM-CMierleaCellManager02	Controls the running of a...	Manual	
	IBM WebSphere Application Server V8.0 - IBM-CMierleaJobMgr01	Controls the running of a...	Manual	
	IBM WebSphere Application Server V8.0 - IBM-CMierleaJobMgr02	Controls the running of a...	Manual	
	IBM WebSphere Application Server V8.0 - IBM-CMierleaNode01	Controls the running of a...	Manual	
	IBM WebSphere Application Server V8.0 - IBM-CMierleaNode03	Controls the running of a...	Manual	
	IBM WebSphere Application Server V8.5 - IBM-CMierleaANode02	Controls the running of a...	Manual	
	IBM WebSphere Application Server V8.5 - IBM-CMierleaCellManager_02_85	Controls the running of a... Started	Manual	
	IBM WebSphere Application Server V8.5 - IBM-CMierleaJobMgr03	Controls the running of a...	Manual	

Enabling process restart on failure

Example 7-22 Removing a service

```
D:\was85\IBM\WebSphere\AppServer\bin>runas /user:IBM-CMierlea\admin  
"D:\was85\IBM\WebSphere\AppServer\bin\WASService -remove \"dmgr\""  
Enter the password for IBM-CMierlea\admin:  
Attempting to start D:\was85\IBM\WebSphere\AppServer\bin\WASService -remove dmgr  
as user "IBM-CMierlea\admin" ...  
D:\was85\IBM\WebSphere\AppServer\bin>
```

Enabling process restart on failure

Example 7-23 Inittab contents for process restart

On deployment manager machine:

```
ws1:23:respawn:/usr/WebSphere/DeploymentManager/bin/startManager.sh
```

On node machine:

```
ws1:23:respawn:/usr/WebSphere/AppServer/bin/startNode.sh
```

```
ws2:23:respawn:/usr/WebSphere/AppServer/bin/startServer.sh nodename_server1
```

```
ws3:23:respawn:/usr/WebSphere/AppServer/bin/startServer.sh nodename_server2
```

```
ws4:23:respawn:/usr/WebSphere/AppServer/bin/startServer.sh nodename_server2
```

- WebSphere for z/OS takes advantage of the z/OS Automatic Restart Management (ARM) to recover application servers.
- Each application server running on a z/OS system (including servers you create for your business applications) are automatically registered with an ARM group. Each registration uses a special element type called SYSCB.

Enabling process restart on failure

- Some important things to consider when using automatic restart management: If you have automatic restart management (ARM) enabled on your system, you might want to disable ARM for the WebSphere Application Server for z/OS address spaces before you install and customize WebSphere Application Server for z/OS.
- During customization, job errors might cause unnecessary restarts of the WebSphere Application Server for z/OS address spaces

Enabling process restart on failure

When you issue	ARM behavior
<code>STOP address_space</code>	It does not restart the address space.
<code>CANCEL address_space</code>	It does not restart the address space.
<code>CANCEL address_space, ARMRESTART</code>	It does restart the address space.
<code>MODIFY address_space, CANCEL</code>	It does not restart the address space.
<code>MODIFY address_space, CANCEL,ARMRESTART</code>	It restarts the address space.

Enabling process restart on failure

Example 7-24 Displaying the status of address spaces registered for ARM

To display all registered address spaces (including the address spaces of server instances), issue the command:

```
d xcf,armstatus,detail
```

To display the status of a particular server instance, use the display command and identify the job name. For example, to display the status of the Daemon server instance (job BBODMN), issue the following command:

```
d xcf,armstatus,jobname=bbodmn,detail
```

8. Administration with scripting



Administration with scripting

This lesson contains the following topics:

- Overview of WebSphere scripting
- Launching wsadmin
- Command and script invocation
- The wsadmin tool management objects
- Properties file based configuration
- Managing WebSphere using script libraries
- Assistance with scripting
- Example: Using scripts with the job manager
- Online resources