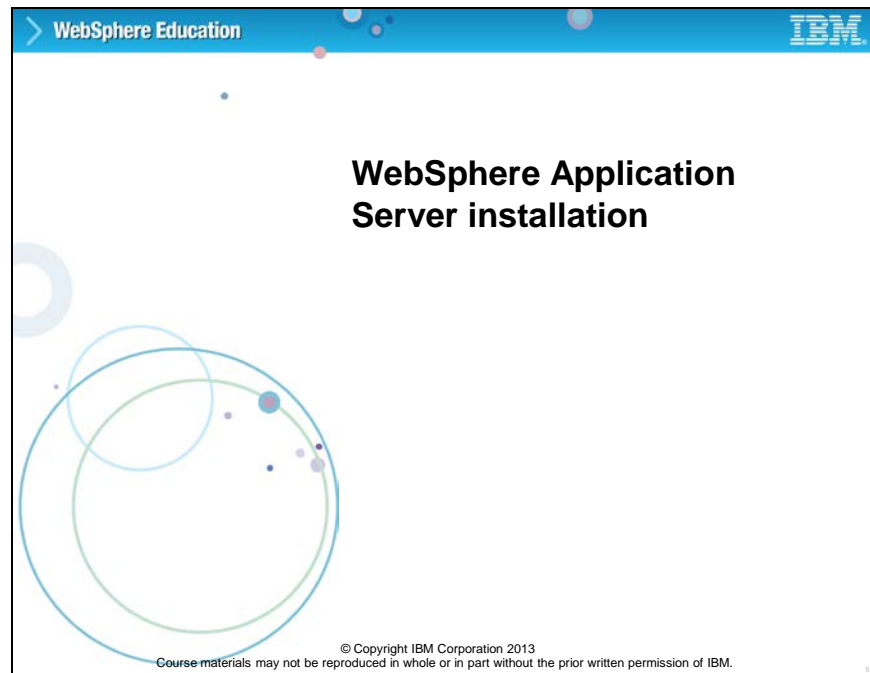
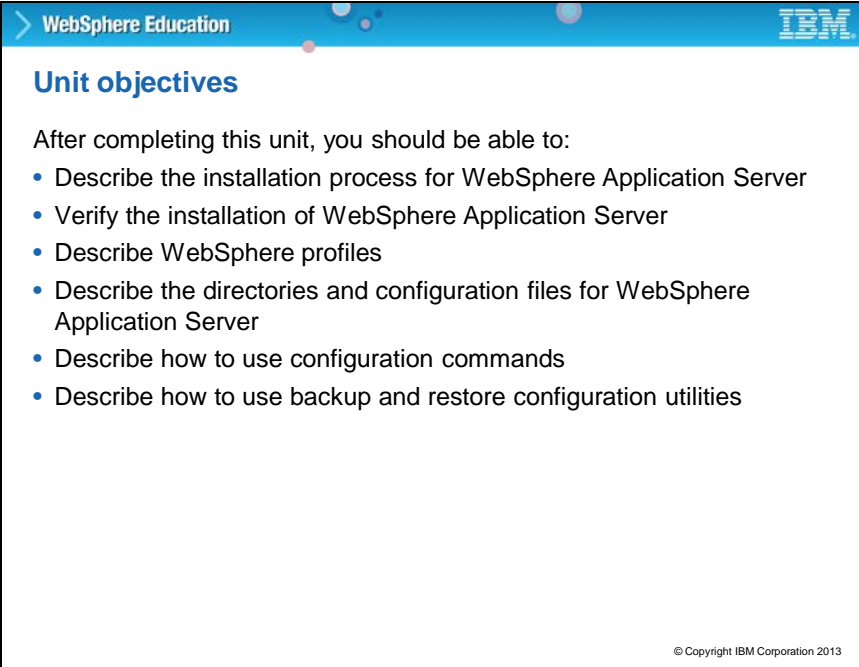


Slide 1



This unit describes the tasks that are involved with the planning, installation, and post-installation of WebSphere Application Server V8.5.5.

Slide 2



The slide is titled 'WebSphere Education' in the top left corner and features the IBM logo in the top right corner. The main heading is 'Unit objectives' in blue. Below this, it states 'After completing this unit, you should be able to:' followed by a bulleted list of six objectives. The slide also includes a copyright notice at the bottom right: '© Copyright IBM Corporation 2013'.

WebSphere Education

IBM

Unit objectives

After completing this unit, you should be able to:

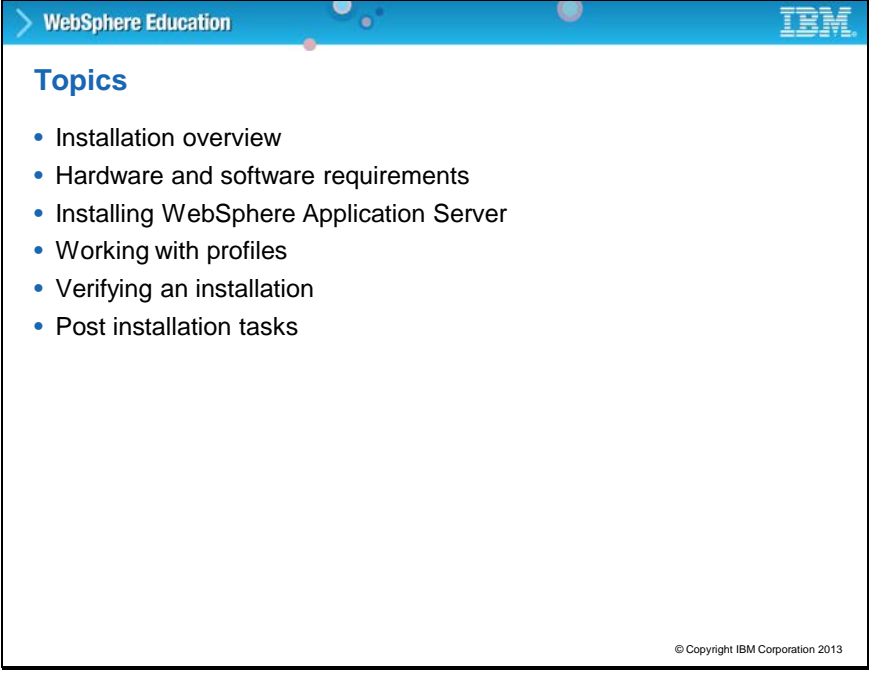
- Describe the installation process for WebSphere Application Server
- Verify the installation of WebSphere Application Server
- Describe WebSphere profiles
- Describe the directories and configuration files for WebSphere Application Server
- Describe how to use configuration commands
- Describe how to use backup and restore configuration utilities

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After completing this unit, you should be able to:

- Describe the installation process for WebSphere Application Server
- Verify the installation of WebSphere Application Server
- Describe WebSphere profiles
- Describe the directories and configuration files for WebSphere Application Server
- Describe how to use configuration commands
- Describe how to use backup and restore configuration utilities

Slide 3



The slide is titled 'WebSphere Education' in the top left corner and features the IBM logo in the top right corner. The main content is a list of topics under the heading 'Topics'. The topics are: Installation overview, Hardware and software requirements, Installing WebSphere Application Server, Working with profiles, Verifying an installation, and Post installation tasks. A copyright notice '© Copyright IBM Corporation 2013' is located in the bottom right corner of the slide.

WebSphere Education

IBM

Topics

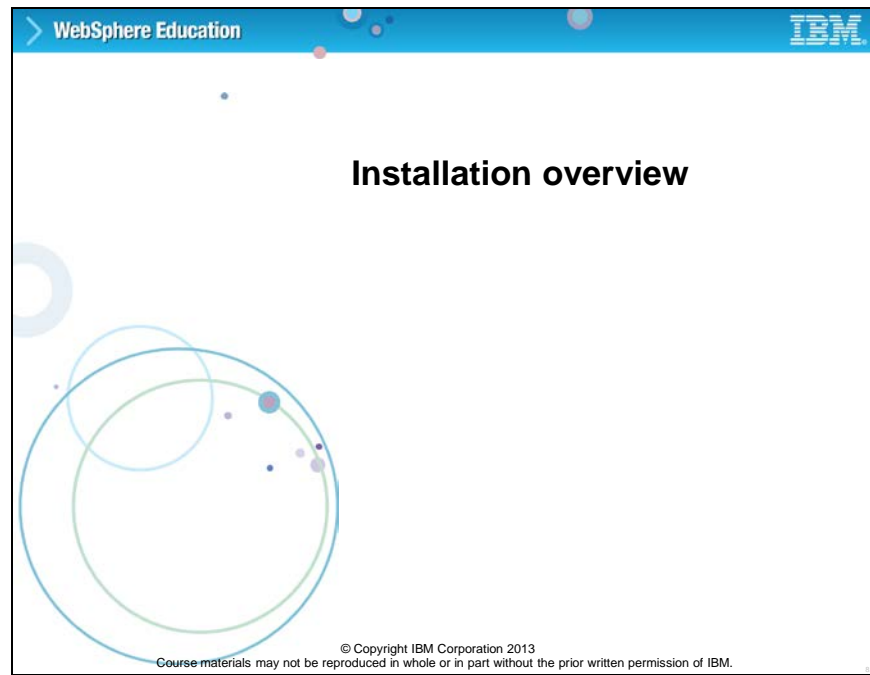
- Installation overview
- Hardware and software requirements
- Installing WebSphere Application Server
- Working with profiles
- Verifying an installation
- Post installation tasks

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The following are topics in this unit:



- Installation overview
- Hardware and software requirements
- Installing WebSphere Application Server
- Working with profiles
- Verifying the installation
- Post installation tasks

Slide 4




Topic: Installation overview. In this topic, you get an overview of the installation process.

Slide 5





Preinstallation tasks



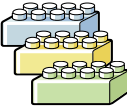
Read the documentation

- WebSphere Information Center platform-specific tips for installing and migrating
- Install readme file




Installation media

- DVD media
- Downloaded repository
- Passport Advantage




Confirm hardware and software

- Obtain necessary products and maintenance
- Check WebSphere website for any maintenance




TCP/IP networking

- Host name of node is not to be in DNS or local hosts file
- Host name of node is not to remain fixed
- DHCP not supported



User ID

- Create and verify user ID for starting services
- Verify user ID for disk read and write access



File system and memory

- Enough space is available
- Enough memory is available

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Before beginning the installation of WebSphere Application Server, read the documentation that is included with the product. Also, review the WebSphere information center for tips on planning the installation process. Confirm that you meet the hardware and software requirements.

Application requirements dictate more hardware and software needs.

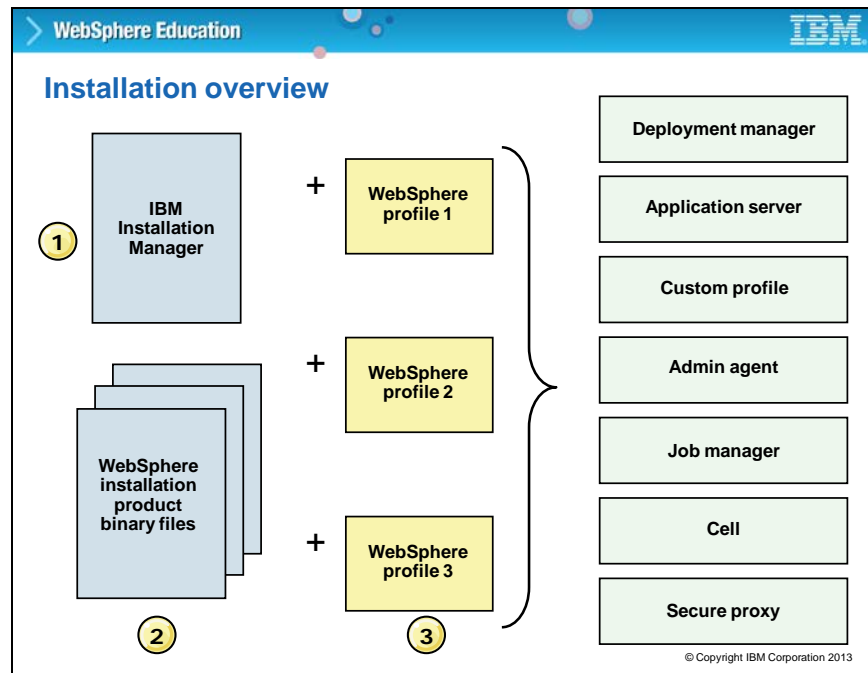
Create and verify that the user ID that is used to install the product has the appropriate rights for starting services. Ensure that the user ID has read and write access to the file system where the product is installed. WebSphere can be installed by using a non-administrator id. Review the information center topic that is titled “Describing installation by using non-administrator id”.

Locate the installation media. The installation files are delivered as a DVD or can be downloaded by using a Passport Advantage id.

WebSphere opens up several ports by default. Ensure that the host name assigned to your system is in DNS or in the local hosts file. The host name must remain fixed after you create a profile. Changing the host name can cause WebSphere not to function properly.

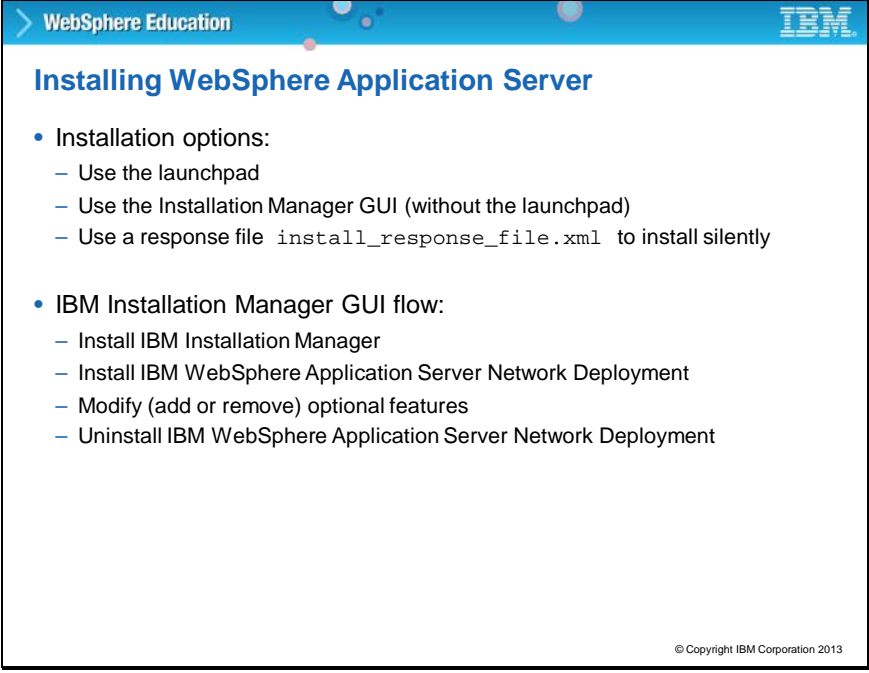
Finally, ensure that you have enough disk space and physical memory on the system to support your application server environment. The applications that you plan to install contribute to the amount of disk space and physical memory needed.

Slide 6



First, locate the product media. Use the launchpad to install the IBM Installation Manager (IIM). After installing IIM, choose the WebSphere package that you want to install. After successfully installing the WebSphere Application Server, select and create the appropriate profile.

Slide 7



The slide is titled "Installing WebSphere Application Server" and is part of a "WebSphere Education" presentation. It lists two main categories of installation options:

- Installation options:
 - Use the launchpad
 - Use the Installation Manager GUI (without the launchpad)
 - Use a response file `install_response_file.xml` to install silently
- IBM Installation Manager GUI flow:
 - Install IBM Installation Manager
 - Install IBM WebSphere Application Server Network Deployment
 - Modify (add or remove) optional features
 - Uninstall IBM WebSphere Application Server Network Deployment

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There are three options for installing the product.

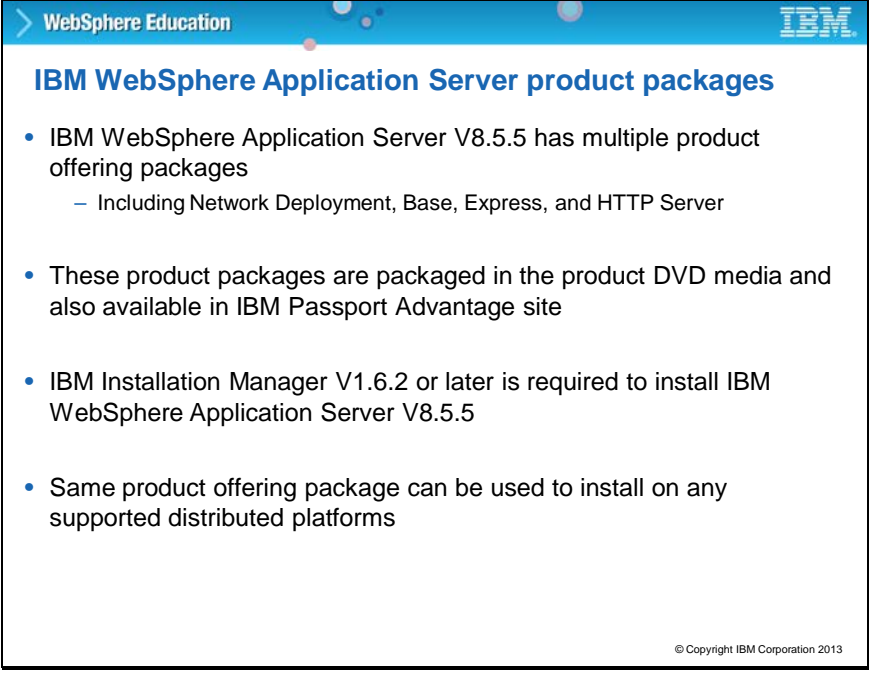
You can use the launchpad program that is in the root directory of the product disk, the installation manager GUI, or install the product silently by using a response file.

The product media includes a launchpad utility, which can be used to install IBM Installation Manager Version 1.5.2 and IBM WebSphere Application Server Version 8.5.

After IBM Installation Manager is installed, it can be used to:

1. Install IBM WebSphere Application Server Network Deployment
2. Add or remove more optional features to the IBM WebSphere Application Server Network Deployment installation
3. Uninstall the installation

Slide 8



The slide is titled "IBM WebSphere Application Server product packages" and is part of a "WebSphere Education" presentation. It lists four bullet points: 1) IBM WebSphere Application Server V8.5.5 has multiple product offering packages, including Network Deployment, Base, Express, and HTTP Server. 2) These product packages are packaged in the product DVD media and also available in IBM Passport Advantage site. 3) IBM Installation Manager V1.6.2 or later is required to install IBM WebSphere Application Server V8.5.5. 4) Same product offering package can be used to install on any supported distributed platforms. The slide includes the IBM logo in the top right corner and a copyright notice "© Copyright IBM Corporation 2013" in the bottom right corner.

- IBM WebSphere Application Server V8.5.5 has multiple product offering packages
 - Including Network Deployment, Base, Express, and HTTP Server
- These product packages are packaged in the product DVD media and also available in IBM Passport Advantage site
- IBM Installation Manager V1.6.2 or later is required to install IBM WebSphere Application Server V8.5.5
- Same product offering package can be used to install on any supported distributed platforms

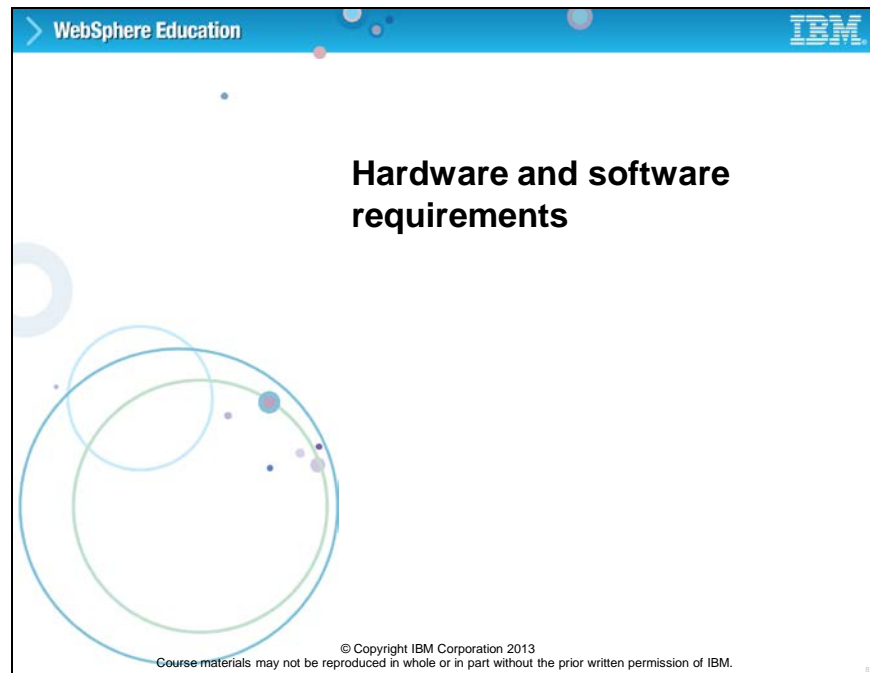
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IBM WebSphere Application Server Version 8.5.5 includes multiple offering packages. For example, Application Server ND, Base, Express, or the IBM HTTP Server is a separate offering.

These offering packages are also available for download and to be installed directly from the IBM Passport Advantage site. A user must have a valid Passport Advantage id and password with entitlement to IBM WebSphere Application Server Version 8.5.5.

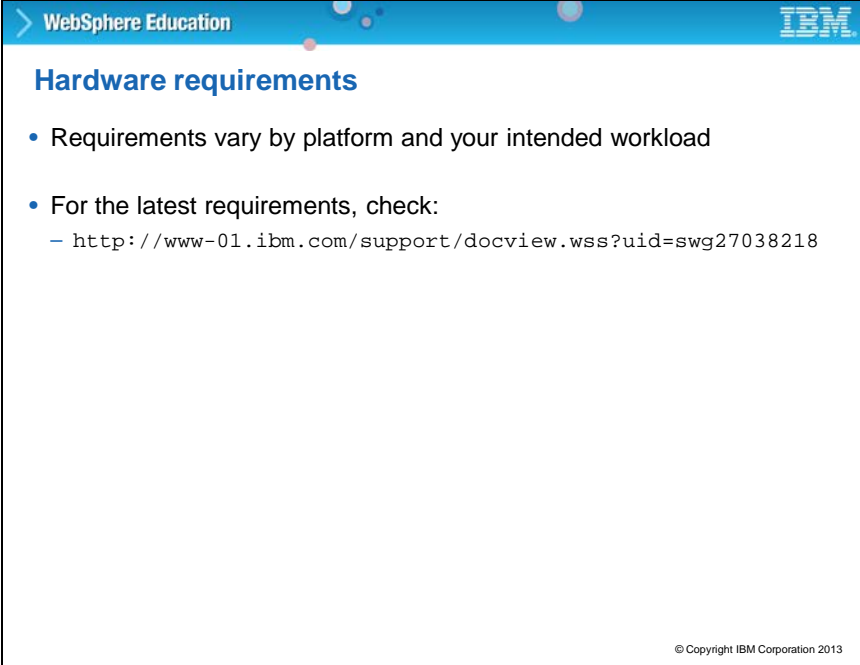
All IBM WebSphere Application Server V8.5.5 offerings must be installed by using the IBM Installation Manager Version 1.6.2 or later. Unlike the previous version of WebSphere Application Server, each offering contains complete program binary files and can be installed on any supported distributed platform. There is not a separate 32-bit and 64-bit application server package.

Slide 9



Topic: Hardware and software requirements. This topic, describes the hardware and software requirements for installing the IBM WebSphere Application Server Network Deployment product.

Slide 10



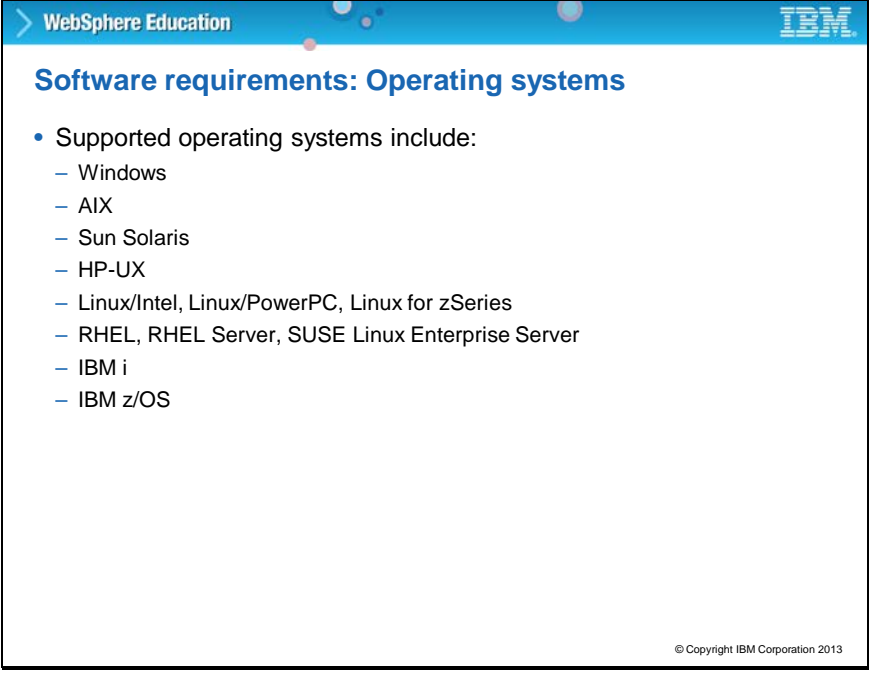
The slide is titled "WebSphere Education" in the top left corner and features the IBM logo in the top right corner. The main heading is "Hardware requirements" in blue. Below this, there is a bulleted list with two items: "Requirements vary by platform and your intended workload" and "For the latest requirements, check:". The second item is followed by a sub-bullet pointing to the URL "http://www-01.ibm.com/support/docview.wss?uid=swg27038218". A small copyright notice "© Copyright IBM Corporation 2013" is located in the bottom right corner of the slide.

- Requirements vary by platform and your intended workload
- For the latest requirements, check:
 - <http://www-01.ibm.com/support/docview.wss?uid=swg27038218>

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Hardware requirements vary by platform and application requirements. The minimum requirements are 1 GB of physical memory and a CD drive. Use this link to check for the latest hardware requirements. Also, consult your application documentation to help determine your hardware requirements.

Slide 11



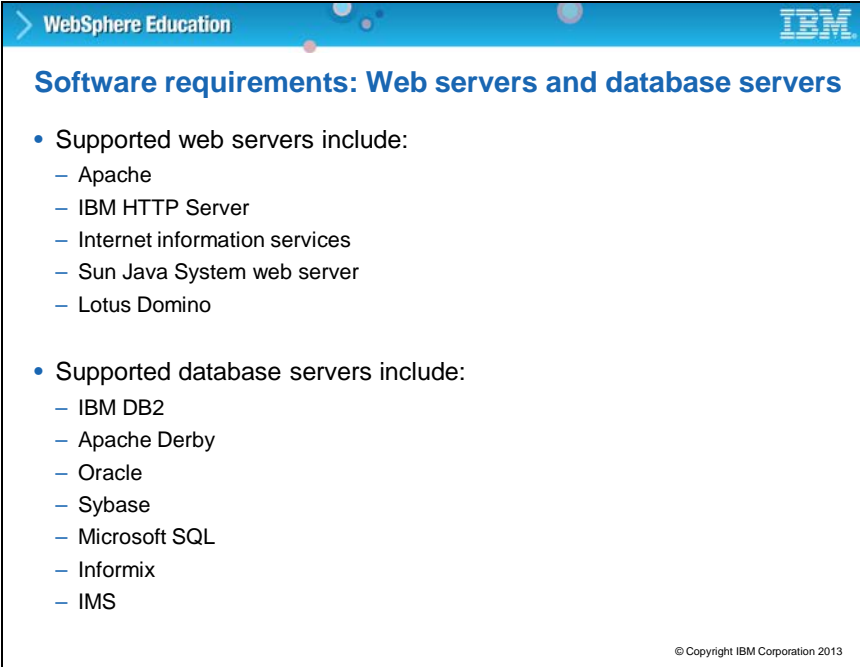
The slide is titled "WebSphere Education" in the top left corner and features the IBM logo in the top right corner. The main heading is "Software requirements: Operating systems". Below this, a bulleted list specifies the supported operating systems. The list includes Windows, AIX, Sun Solaris, HP-UX, Linux/Intel, Linux/PowerPC, Linux for zSeries, RHEL, RHEL Server, SUSE Linux Enterprise Server, IBM i, and IBM z/OS. A small copyright notice "© Copyright IBM Corporation 2013" is located in the bottom right corner of the slide content area.

- Supported operating systems include:
 - Windows
 - AIX
 - Sun Solaris
 - HP-UX
 - Linux/Intel, Linux/PowerPC, Linux for zSeries
 - RHEL, RHEL Server, SUSE Linux Enterprise Server
 - IBM i
 - IBM z/OS

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This list contains the supported operating systems. Software requirements vary by platform and application requirements. Use the software requirements link on the previous slide to check for the latest supported operating system versions and patch levels. Also, consult your application documentation to help determine your software requirements.

Slide 12



The slide is titled "Software requirements: Web servers and database servers" and is part of the "WebSphere Education" series, as indicated by the header. It lists supported web servers and database servers in two bulleted sections. The first section, "Supported web servers include:", lists Apache, IBM HTTP Server, Internet information services, Sun Java System web server, and Lotus Domino. The second section, "Supported database servers include:", lists IBM DB2, Apache Derby, Oracle, Sybase, Microsoft SQL, Informix, and IMS. The IBM logo is in the top right corner, and the copyright notice "© Copyright IBM Corporation 2013" is in the bottom right corner.

WebSphere Education

IBM

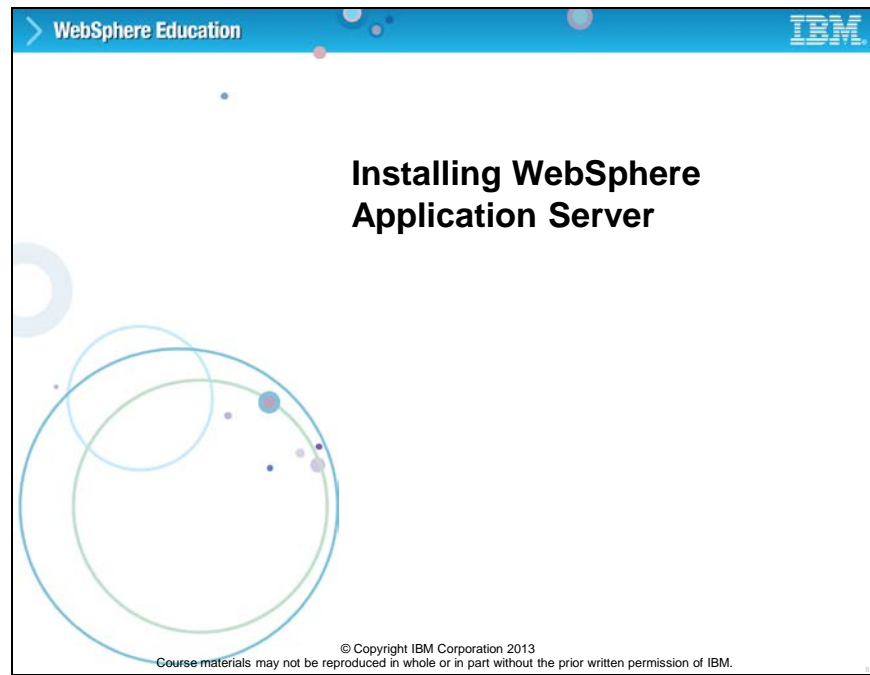
Software requirements: Web servers and database servers

- Supported web servers include:
 - Apache
 - IBM HTTP Server
 - Internet information services
 - Sun Java System web server
 - Lotus Domino
- Supported database servers include:
 - IBM DB2
 - Apache Derby
 - Oracle
 - Sybase
 - Microsoft SQL
 - Informix
 - IMS

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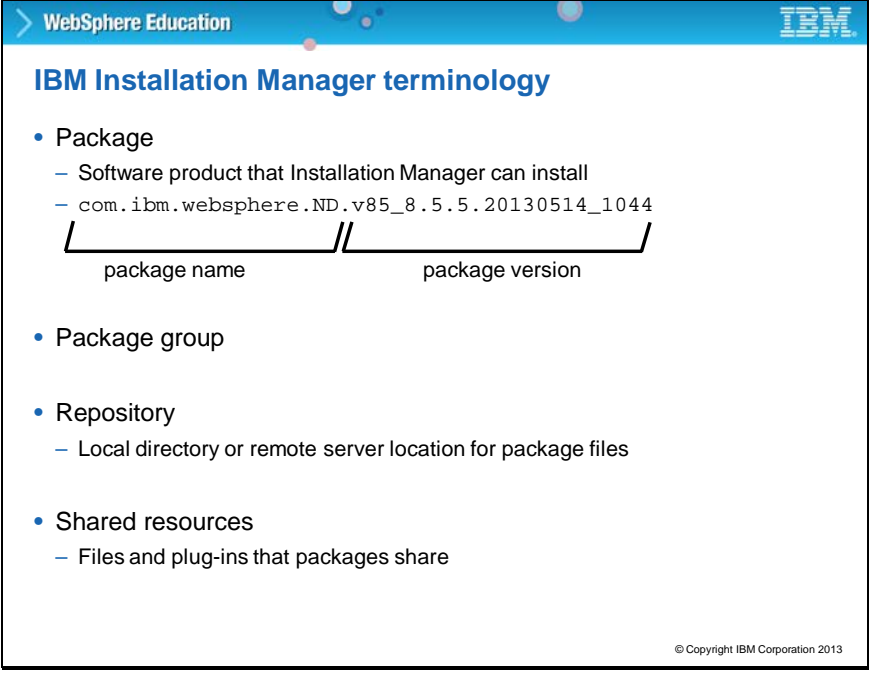
This list contains the supported web servers and the supported database servers. Use the software requirements link on an earlier slide to check for the latest supported web servers, database server versions, and patch levels. Also, consult your application documentation to help determine your database server requirements.

Slide 13



Topic: Installing WebSphere Application Server. This topic introduces the steps of installing WebSphere Application Server.

Slide 14



The slide is titled "IBM Installation Manager terminology" and is part of the "WebSphere Education" series. It lists four key concepts: Package, Package group, Repository, and Shared resources. The "Package" concept is further detailed with a definition and an example identifier, which is then broken down into its "package name" and "package version" components.

- **Package**
 - Software product that Installation Manager can install
 - `com.ibm.websphere.ND.v85_8.5.5.20130514_1044`

`com.ibm.websphere.ND.v85_8.5.5.20130514_1044`

package name
package version
- **Package group**
- **Repository**
 - Local directory or remote server location for package files
- **Shared resources**
 - Files and plug-ins that packages share

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A **package** is a software product that the Installation Manager installs. It is a separately installable unit that can operate independently from other packages of that software. It can be a product, a group of components, or a single component that can be installed by using the Installation Manager. Each package has a name, version, and an identifier as shown in this example:

- Package name: `com.ibm.websphere.ND.v85`
- Package version: `8.5.5.20130514_1044`
- Package identifier: `com.ibm.websphere.ND.v85_8.5.5.20130514_1044`

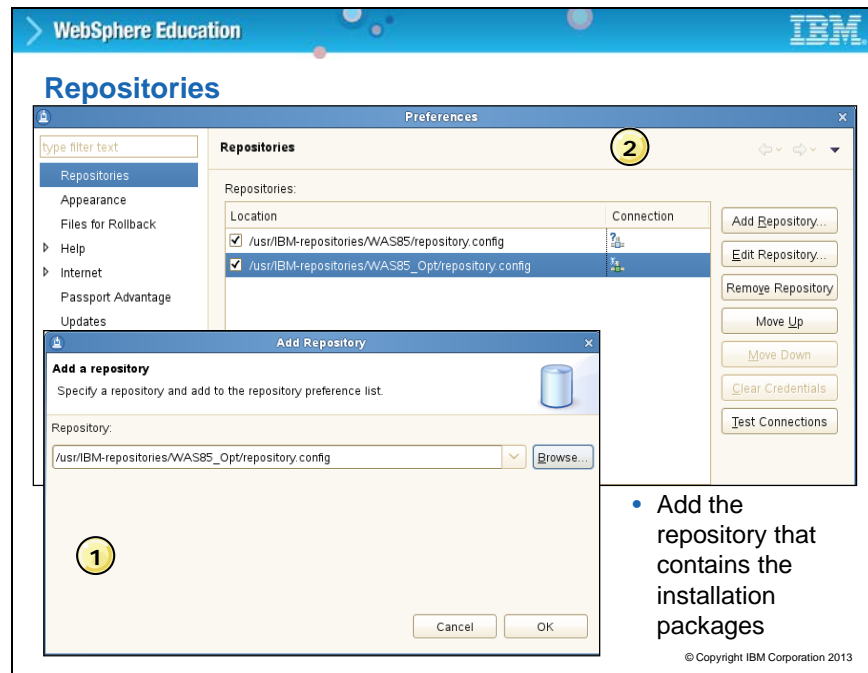
The packages are installed to a defined directory location in the file system. Installation Manager allows you to control where products are installed and at which level.

A **package group** is used when more than one product is installed at the same location. The Installation Manager sets package group names automatically. Some packages support installing to the same package group and other packages must be installed to a new package group. When you install multiple packages at the same time, you can install the packages into different package groups. After creating a package group by successfully installing a package, you cannot change the installation directory. The installation directory contains files and resources specific to the packages that are installed into that package group.

A **repository** is a place where the installable packages can be found. The repository includes metadata that describes the software version and how it is installed. It has a list of files that are organized in a tree structure and can be on a local directory or on a remotely reachable server.

Shared resources provide a place where software files and plug-ins are stored and packages share the resources. You can specify the shared resources directory the first time you install a package and you cannot change the location while packages are installed. Resources in the package that other package groups can use are placed in the shared resources directory.

Slide 15



First, you must configure the repository that contains the WebSphere Application Server installation packages. If Installation Manager is not started, then change to the installation directory of Installation Manager and enter Eclipse. After Installation Manager is started, it takes you to the main page. Next, you add the repository that contains the WebSphere Application Server ND package. To add a repository, you modify the Installation Manager preferences. Click **File > Preferences > Repositories**. This page contains a list of the repositories for the Installation Manager. Click **Add Repository** and enter the path to the **repository.config** file in the location that contains the repository files.

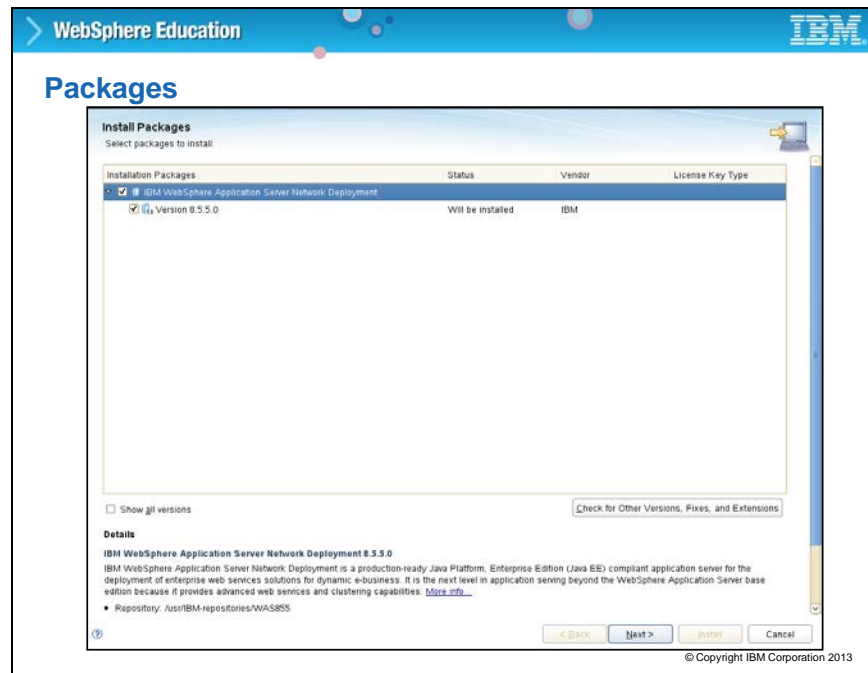
If you are going to install the product by using the web-based installation, then you need access to the Passport Advantage site and access the product from the online repository. The location does not contain a web page that you can access by using a web browser. The location is a remote web-based repository location that you must add to your Installation Manager preferences before the Installation Manager GUI can access the files in this repository to install the product. This live repository is accessed by using Passport Advantage authentication. After you install Installation Manager, you can set the Passport Advantage preference to connect to the live repositories.



After you configure the Installation Manager to access the repositories that contain your product package, select the **Install** option on the main page.

From the main page, you can also discover and update an existing installation, and modify an existing installation by adding or removing features and functions. If you updated an installation, you can roll back to an earlier version of a package or uninstall an existing installation.

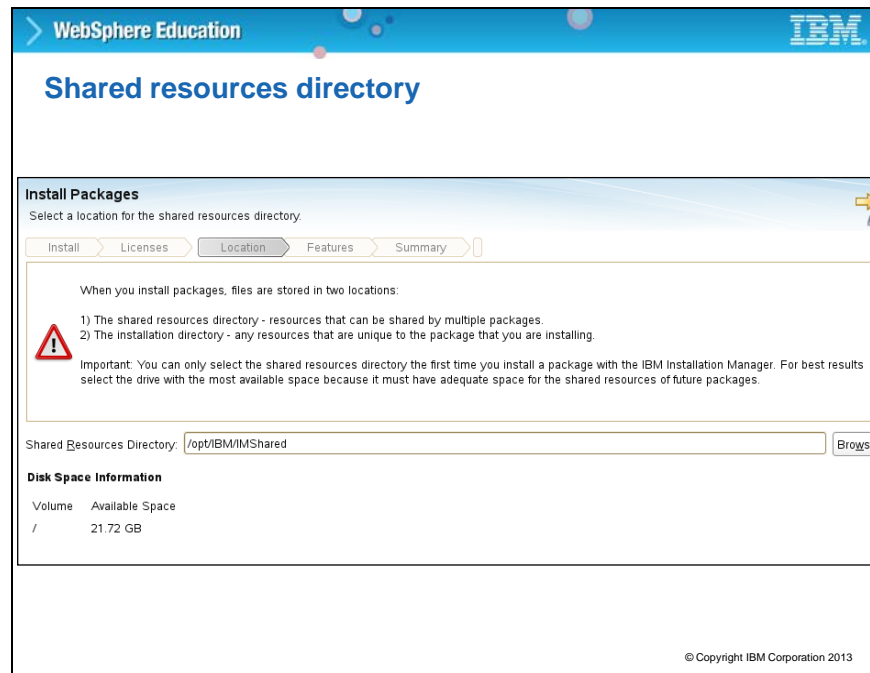
Slide 17



The package installation page displays and shows a list of available installation packages and packages that are installed. The list of packages you can install is retrieved from the repositories you configured in Installation Manager.

Select to install the IBM WebSphere Application Server Network Deployment package and click **Next**.

Slide 18



Select the location for the shared resources directory. The first time that you install a package by using Installation Manager, you must specify the shared resources director. The shared resources directory is where installation artifacts used by one or more package groups are located. After the directory is set, the directory location cannot be modified.

Slide 19

WebSphere Education **IBM**

Package group and installation directory

Install Packages

A package group is a location that contains one or more packages. Some compatible packages can be installed into a common package group and will share a common user interface. Select an existing package group, or create a new one.

☐ Use the existing package group
☒ Create a new package group

Package Group Name	Installation Directory
IBM WebSphere Application Server V8.5	/opt/IBM/WebSphere/AppServer

Package Group Name: IBM WebSphere Application Server V8.5

Installation Directory:

Details

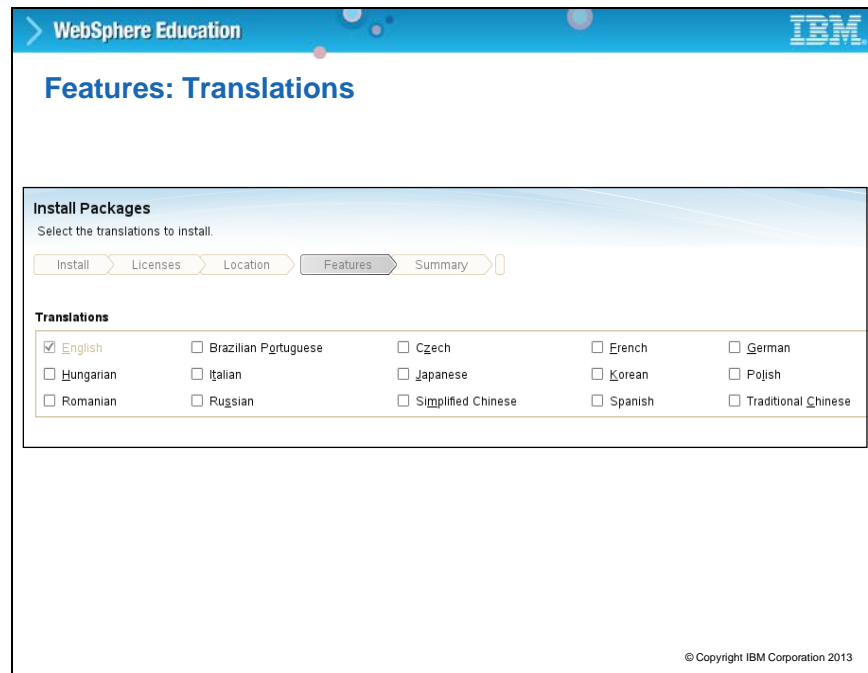
Shared Resources Directory: /opt/IBM/IMShared

Disk Space Information

Volume	Available Space
/	21.72 GB

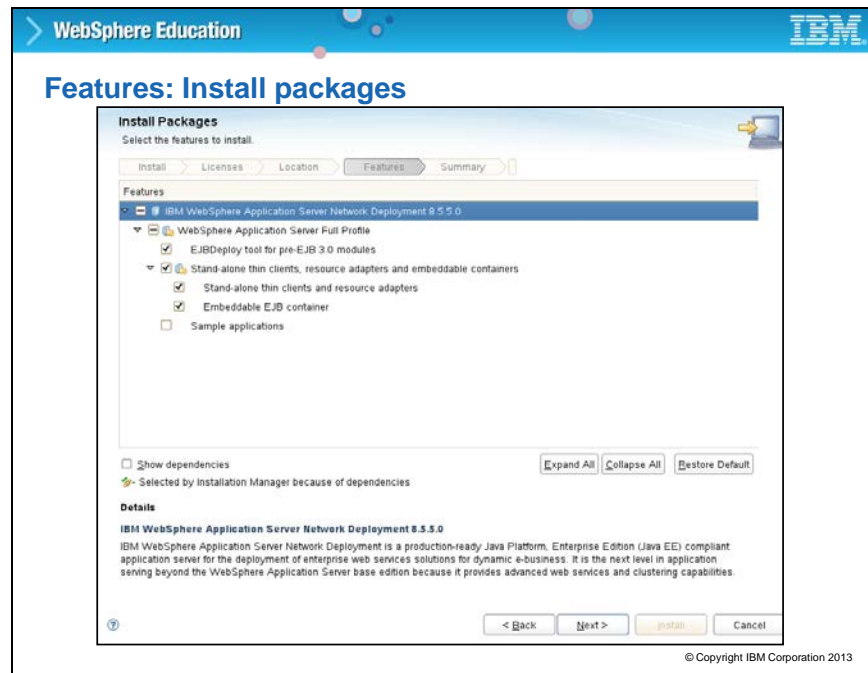
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Next, determine the package group and installation directory. The package group is a location that contains one or more packages. The installation directory is the location for the installation binary files. When you install packages with IBM Installation Manager, you must choose an installation location.



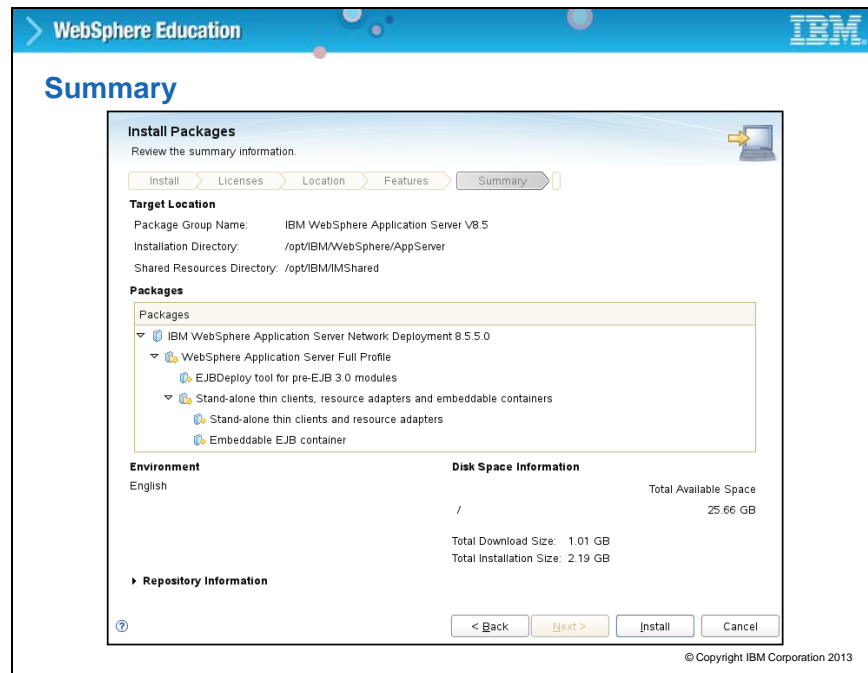
In version 8.5.5, you can select individual language packs for the WebSphere Application Server runtime environment and administrative console. You can confirm the features to install.

Slide 21



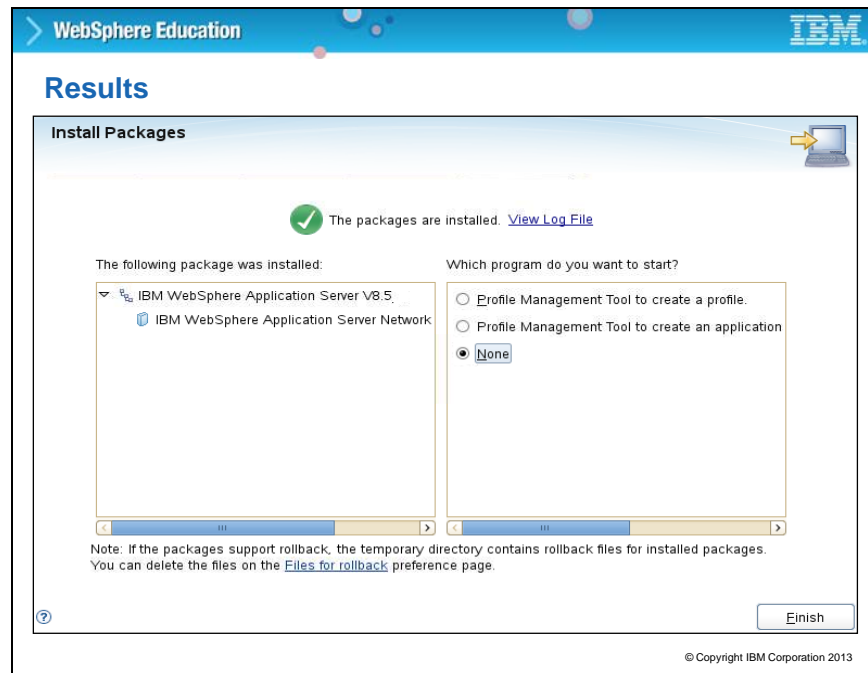
In version 8.5.5, you can select individual features to install. Other features that you can install include the EJBDeploy tool for pre-EJB 3.0 modules, stand-alone thin clients, resource adapters, embeddable containers, and sample applications.

Slide 22



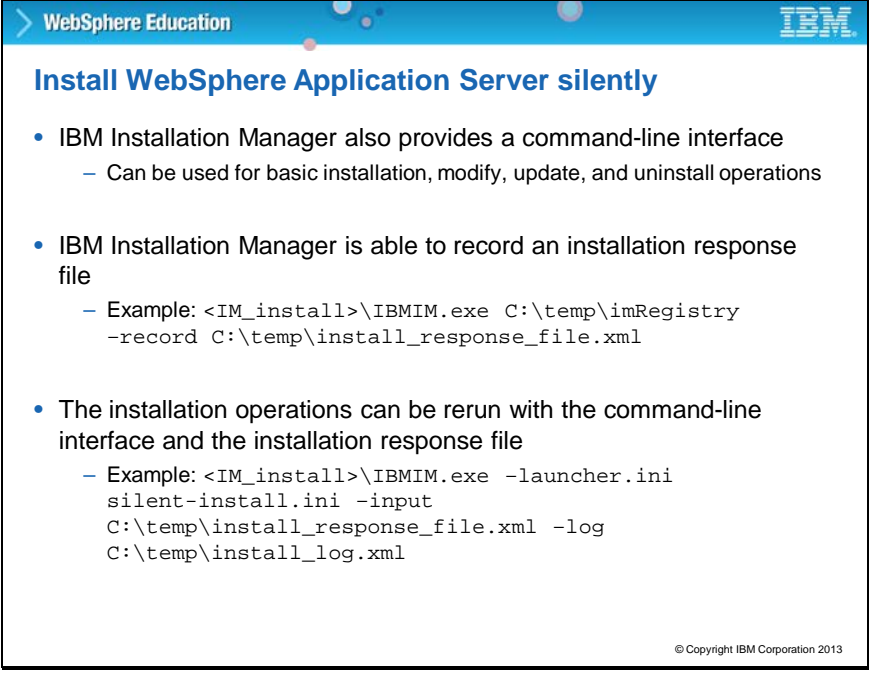
An installation summary panel is displayed. Review the installation location, installation features, and the language pack option before clicking **Install** to start the installation. During the installation, a progress status bar is displayed. You can pause or cancel the installation and resume when you are ready to continue.


Slide 23



If the installation is successful, the program displays a message that indicates that installation is successful. If the installation is not successful, click **View Log File** to troubleshoot the problem. It is always a good idea to view the log file after any installation.

In Version 8.5, product installation is separated from product configuration. The installation of WebSphere Application Server does not automatically create a server profile instance. However, there is an option on the final panel of the installation wizard to start the Profile Management Tool application upon closing of this final installation wizard panel.



WebSphere Education 

Install WebSphere Application Server silently

- IBM Installation Manager also provides a command-line interface
 - Can be used for basic installation, modify, update, and uninstall operations
- IBM Installation Manager is able to record an installation response file
 - Example: `<IM_install>\IBMIM.exe C:\temp\imRegistry -record C:\temp\install_response_file.xml`
- The installation operations can be rerun with the command-line interface and the installation response file
 - Example: `<IM_install>\IBMIM.exe -launcher.ini silent-install.ini -input C:\temp\install_response_file.xml -log C:\temp\install_log.xml`

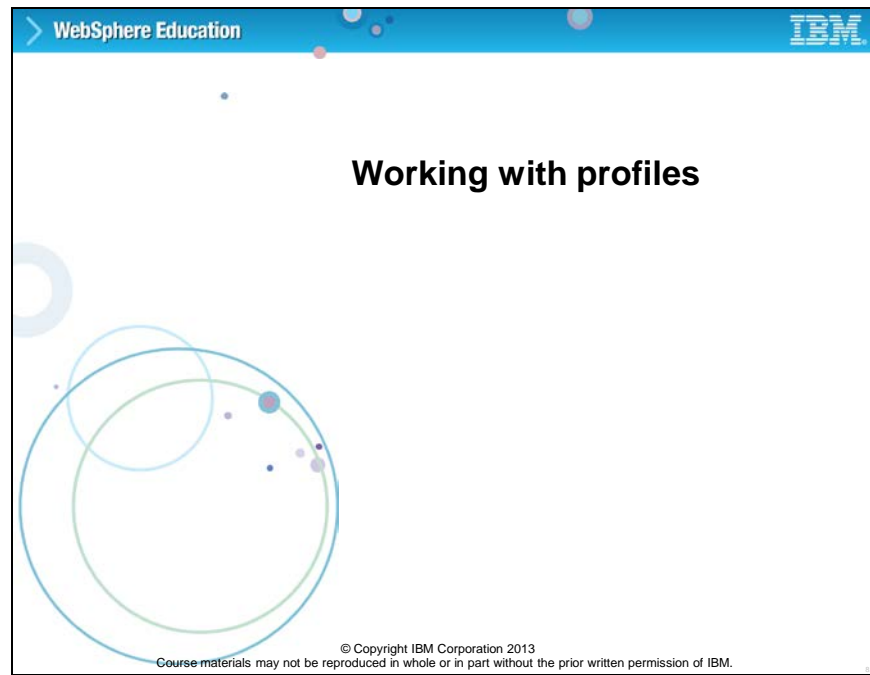
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IBM Installation Manager also provides a command-line interface, which can be used for installation automation, and it is useful when installing WebSphere Application Server in many systems within your enterprise. You can use the command-line interface alone to complete basic installation, modify, update, and uninstall operations, or you can use it with an installation response file to rerun the same installation operations. IBM Installation Manager also can record the operation to an installation response file in its GUI mode, or you can use the sample response file that is provided in the WebSphere Application Server information center. There are instructions in the sample response file to guide you in changing it for your environment.

In the IBM WebSphere Application Server Version 8.5 information center, you can find sample response files that contain complete documentation on how to modify the sample response file to suite your particular installation environment. An example is a different installation location or a choice of optional features.

When you record a new response file, you can specify the **-skipInstall** parameter. Using this parameter indicates that no files are installed, and speeds up the recording. If you use a temporary data location with the **-skipInstall** parameter, Installation Manager writes the installation registry to the specified data location while recording. When you start Installation Manager again without the **-skipInstall** parameter, you then can use your response file to install against the real installation registry.

Slide 25



Topic: Working with profiles. This topic describes the concept of profiles and explains the steps to create a profile.

WebSphere Education IBM		
Profiles		
<ul style="list-style-type: none"> Profiles define application server configuration 		
Profile types	packages	Functions
Application server (default)	All	Runs your enterprise applications; functions independently from other application servers
Deployment manager	Network Deployment	Provides management capabilities for multiple federated nodes
Job manager	Network Deployment	Provides management capabilities for multiple stand-alone application servers, administrative agents, and deployment managers
Administrative agent	All	Provides management capabilities for multiple stand-alone application servers
Custom (managed)	Network Deployment	Creates and federates a node that contains no predefined application server definitions
Cell	Network Deployment	Provides two profiles: a deployment manager and a federated application server profile
Secure proxy	Network Deployment	Provides a secure proxy configuration-only profile only for use with a DMZ secure proxy server

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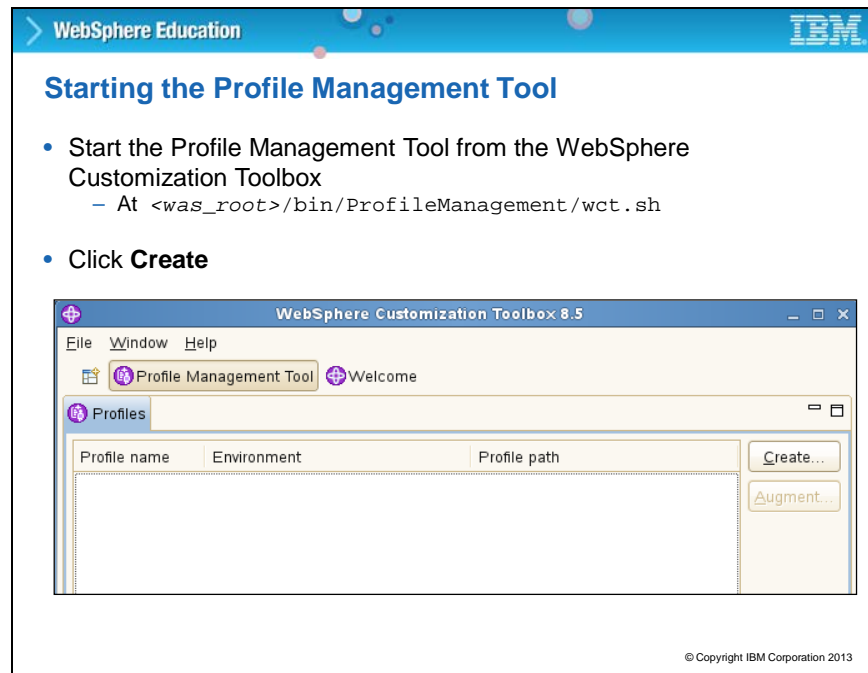
Profiles are created based on templates that are supplied with the product. Each template consists of a set of files that provide the initial settings for the profile and a list of actions to do after the profile is created. Currently, there is no provision for modifying these templates for your use, or for creating templates that are based on existing application servers.

Profiles define application server configurations. WebSphere Application Server V8.5.5 Network Deployment has seven profile types, which are listed and described in the table on the slide. Profiles contain the configuration files that WebSphere uses at run time. Profiles are created by using the Profile Management Tool, which is a graphical interface to the manageprofiles script. Profiles can also be created and managed by using the manageprofiles script.

An application server profile runs your enterprise applications. You can create an application server profile. This profile allows access to applications from the Internet or from an intranet, typically by using Java technology. An application server profile functions independently from other application servers. This profile type is available for all installation packages.

A deployment manager provides management capabilities for multiple federated nodes. A deployment manager can manage nodes that span multiple systems and platforms. A single deployment manager manages the nodes, and the nodes must be federated to the cell of that deployment manager. This profile type is available for network deployment installations.

For more detailed description of all profile types, see the information center.



Start the Profile Management Tool to create a runtime environment. You can use one of the following ways to start the tool.

- At the end of installation, select the check box to open the Profile Management Tool.
- Enter the command to open the WebSphere Customization Toolbox directly from a command prompt and open the Profile Management Tool.
- Select the WebSphere Customization Toolbox option from the First steps console and open the Profile Management Tool.
- [Windows] Use the Start menu to access the WebSphere Customization Toolbox and open the Profile Management Tool.
- [Linux] Use the Linux operating system menus that are used to start programs to start the WebSphere Customization Toolbox and open the Profile Management Tool.

After WebSphere Customization Toolbox is started, select the Profile Management Tool and click **Create**.

Slide 28

WebSphere Education **IBM**

Profile Management Tool: Environment and options

Environment Selection

Select a specific type of environment to create.

Environments:

- WebSphere Application Server
 - Cell (deployment manager and a federated application server) Management
 - Application server**
 - Custom profile
 - Secure proxy (configuration-only)

Optional Application Deployment

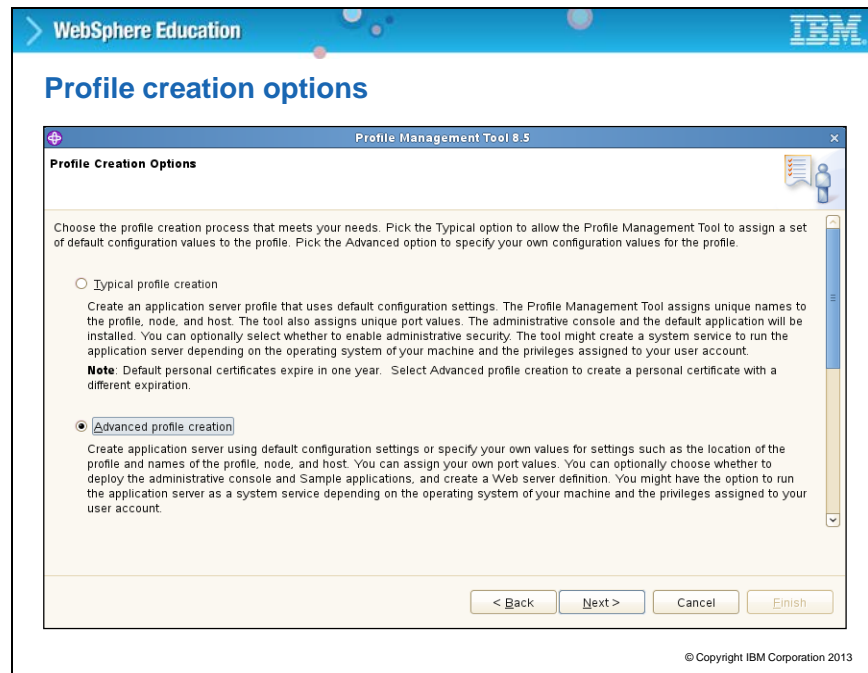
Select the applications to deploy to the WebSphere Application Server environment being created.

- ☒ **Deploy the administrative console (recommended).**
Install a Web-based administrative console that manages the application server. Deploying the administrative console is recommended, but if you deselect this option, the information center contains detailed steps for deploying it after the profile exists.
- ☒ **Deploy the default application.**
Install the default application that contains the Snoop, Hello, and HitCount servlets.

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You are prompted to select the profile environment you want to create. A number of different profiles can be created from this tool. In this example, select the Application Server environment and click **Next**.

You are prompted to choose what applications you want to deploy to your application server environment. As part of the profile creation, both the administrative console and the default application are deployed. It is best to deploy the administrative console so there is an initial point to administer the application server. In a development or test environment, you can install the default application. The default application contains several servlets that provide information about the application server. In a production environment, it is best to uninstall (or not install at all) the default application. Installation of the default application is considered a security risk.



Select either **Typical profile creation** or **Advanced profile creation**, and click **Next**. The Typical profile creation option creates a profile that uses default configuration settings. With the Advanced profile creation option, you can specify your own configuration values for a profile.

Slide 30

WebSphere Education **IBM**

Profile Management Tool: Name, location, and tuning

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:
 Browse...

☐ **Make this profile the default.**
 Each installation of WebSphere Application Server always has one default profile. Commands that run without referring to a specific profile use the default profile. Select this option to make this profile the new default.

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
Standard	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.
Peak	
Development	

See the information center for more information about the performance tuning settings.
[View the online information center](#)

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You are prompted to specify the name of the profile and the profile directory. The profile creation process provides a default name and location. You can change the profile name and location according to the naming standards of your enterprise. The profile name that is provided here is added to a file called profileRegistry.xml, which allows the profile management tool to track the profiles that are created and configured for installation. The profile directory is used to store the configuration files for the profile.

You are also prompted to select performance settings for the application server. There are three settings to tune the performance. Select the performance-tuning setting that most closely matches the type of environment in which the application server runs.

- **Standard** - The standard settings are the standard default configuration settings that are optimized for general-purpose usage.
- **Peak** - The peak settings are appropriate for a production environment where application changes are rare and optimal runtime performance is important.
- **Development** - The development settings are appropriate for a development environment where frequent application updates are done and system resources are at a minimum. Do not use the development settings for production servers.

Slide 31

WebSphere Education **IBM**

Profile Management Tool: Node and host names

Node and Host Names

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

Node name:
was85hostNode01

Server name:
server1

Host name:
was85host

Node name: A node name is used for administration. If the node is federated, the name must be unique within the cell.
Server name: A server name is a logical name for the application server.
Host name: A host name is the domain name system (DNS) name (short or long) or the IP address of this computer and cannot contain spaces.

The following naming rules must be used:

- Names must start and end with alphabetic characters (A-Z, a-z), numbers (0-9), and underscores (_) only.
- Names may contain alphabetic characters (A-Z, a-z), numbers (0-9), periods (.), dashes (-) and underscores (_) only.
- Names must not contain spaces or these characters: / \ * . : ; = + ? | < > _ % ' " [] # \$ ^ { } ()

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The parameters on this panel identify the profile. You prompted to specify the node name, server name, and the host name.

The node name is used to help organize your installation. Use a unique name if you plan to create more than one application server on the system. Notice that a node name is suggested for you. The format of the default name is the short name of the computer name, then a node number sequentially starting at 01. The node name identifies the application server profile in the administrative console. If the node is federated, the node name must be unique within the cell. The server name is a logical name that is assigned to your application server. Typically the name that is used here represents the applications that are installed on this application server.

The host name is the DNS name or IP address of your computer to enable communication with your system. This host name must be in the DNS or local hosts file. After the profile is created, do not change the host name in your DNS. Doing so can cause your application server to not function properly. Click **Next**.

Slide 32

WebSphere Education IBM

Profile Management Tool: Security

Administrative Security

Choose whether to enable administrative security. To enable security, supply a user name and password for logging into administrative tools. This administrative user is created in a repository within the application server. After profile creation finishes, you can add more users, groups, or external repositories.

☒ Enable administrative security

User name:
wasadmin

Password:
.....

Confirm password:
.....

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This page in the wizard allows you to enable administrative security. Selecting this option protects administrative services, such as accessing the configuration repository when you start the application server. This id is considered the primary administrative id. Other administrative users and groups can be created later. This administrative user is created in a repository within the application server and is stored in the profile config directory in a file call fileRegistry.xml.

Slide 33

The screenshot shows the 'Profile Management Tool: Security certificate (1 of 2)' interface. At the top, there's a blue header with 'WebSphere Education' and the IBM logo. Below the header, the title 'Profile Management Tool: Security certificate (1 of 2)' is displayed. The main content area is titled 'Security Certificate (Part 1)' and contains instructions: 'Choose whether to create a default personal certificate and root signing certificate, or import them from keystores. To create new certificates, proceed to Part 2 and provide the certificate information. To import existing certificates from keystores, locate the certificates then proceed to Part 2 and verify the certificate information.'

There are two main sections for certificate creation:

- Default personal certificate:** This section has two radio buttons: 'Create a new default personal certificate.' (which is selected) and 'Import an existing default personal certificate.' Below these are four input fields: 'Path:' (with a 'Browse...' button), 'Password:', 'Keystore type:' (a dropdown menu), and 'Keystore alias:' (a dropdown menu).
- Root signing certificate:** This section also has two radio buttons: 'Create a new root signing certificate.' (selected) and 'Import an existing root signing certificate.' Below these is a 'Path:' input field.

At the bottom right of the form, there is a copyright notice: '© Copyright IBM Corporation 2013'.

Whenever you create a profile, you have the option of creating a personal certificate and signer certificate for the node. Another option is to import an existing certificate and signer certificate for the node. If you select to import these artifacts, you need the password to access the keystores. These certificates are used during SSL communication between clients of WebSphere and between WebSphere processes.

Slide 34

The screenshot shows a web browser window with the title "WebSphere Education" and the IBM logo. The main heading is "Profile Management Tool: Security certificate (2 of 2)". Below this is a sub-heading "Security Certificate (Part 2)". A small icon of a person with a checkmark is in the top right corner. The main content area has a light yellow background and contains the following text: "Modify the certificate information to create new certificates during profile creation. If you are importing existing certificates from keystores, use the information to verify whether the selected certificates contain the appropriate information. If the selected certificates do not, click **Back** to import different certificates." Below this text is a "Restore Defaults" button. The section "Default personal certificate (a personal certificate for this profile, public and private key):" contains three input fields: "Issued to distinguished name:" with the value "cn=was85host,ou=was85hostNode01 Cell,ou=was85hostNode01,o=IBM,c=US", "Issued by distinguished name:" with the value "cn=was85host,ou=Root Certificate,ou=was85hostNode01 Cell,ou=was85hostNode01,o=IBM,c=US", and "Expiration period in years:" with a dropdown menu showing "1". The section "Root signing certificate (personal certificate for signing other certificates, public and private key):" contains one input field: "Expiration period in years:" with a dropdown menu showing "15". The footer of the page says "© Copyright IBM Corporation 2013".

If you chose to create a default personal certificate and signer certificate, you are prompted here to provide the distinguished name for the certificates. The personal certificate has a default expiration of one year and the signer certificate has a default expiration of 15 years. These values can be changed. Also, a default password of WebAS is provided to protect the keystore that holds your certificates. Change this password. Click **Next**.

Slide 35

WebSphere Education
IBM

Profile Management Tool: Ports

Port Values Assignment

The values in the following fields define the ports for the application server and do not conflict with other ports. Another installation of WebSphere Application Server or other programs might use the same ports. Verify that each port value is unique.

Default Port Values
Recommended Port Values

Administrative console port (Default 9060):	9061
Administrative console secure port (Default 9043):	9045
HTTP transport port (Default 9080):	9081
HTTPS transport port (Default 9443):	9444
Bootstrap port (Default 2809):	2811
SIP port (Default 5060):	5063
SIP secure port (Default 5061):	5062
SOAP connector port (Default 8890):	8882
Administrative interprocess communication port (Default 9633):	9634
SAS SSL ServerAuth port (Default 9401):	9409
CSIV2 ServerAuth listener port (Default 9403):	9408

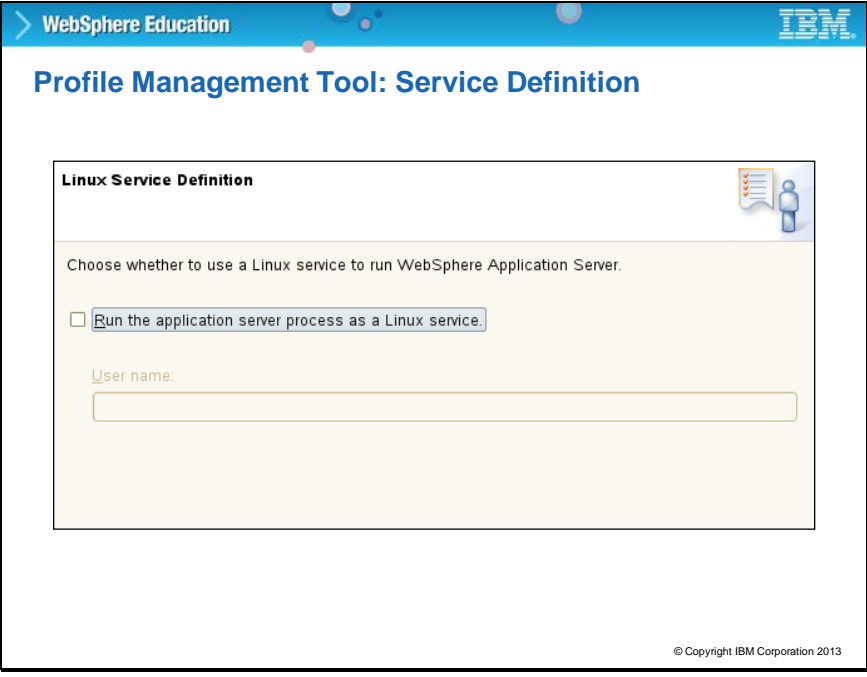
- Review port value assignments

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Verify that the port value assignments are correct and that there are no port conflicts. If you chose not to deploy the administrative console, then the administrative console ports are disabled on the Ports panel.

Validation of ports occurs when you access the Port value assignment panel. Conflicts can still occur between the Port value assignment panel and the profile creation complete panel because ports are not assigned until profile creation completes.

If you suspect a port conflict, then you can investigate the port conflict after the profile is created. Determine the ports that are used during profile creation by examining the portdef.props files.



The image shows a screenshot of the 'WebSphere Education' interface, specifically the 'Profile Management Tool: Service Definition' window. The window has a blue header bar with the 'WebSphere Education' logo on the left and the 'IBM' logo on the right. Below the header, the title 'Profile Management Tool: Service Definition' is displayed in blue. The main content area is titled 'Linux Service Definition' and contains a checkbox labeled 'Run the application server process as a Linux service.' which is currently unchecked. Below the checkbox, there is a text input field labeled 'User name:'. The bottom right corner of the window contains the copyright notice '© Copyright IBM Corporation 2013'.

WebSphere Education

IBM

Profile Management Tool: Service Definition

Linux Service Definition

Choose whether to use a Linux service to run WebSphere Application Server.

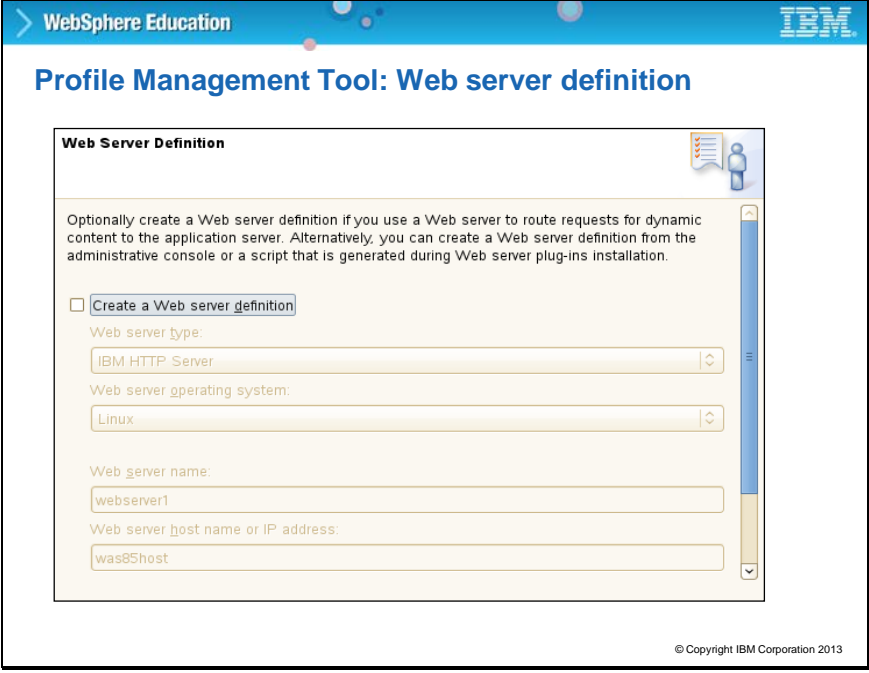
☐ Run the application server process as a Linux service.

User name:

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Depending on your operating system, you can choose to run the application server as a Windows or Linux service. If you choose this option, you are required to provide the account that is used to start this service.

Slide 37



The screenshot shows the 'WebSphere Education' interface with the 'Profile Management Tool: Web server definition' panel. The panel is titled 'Web Server Definition' and contains a checkbox labeled 'Create a Web server definition'. Below this, there are four input fields: 'Web server type' (set to 'IBM HTTP Server'), 'Web server operating system' (set to 'Linux'), 'Web server name' (set to 'webserver1'), and 'Web server host name or IP address' (set to 'was85host'). A vertical scrollbar is visible on the right side of the panel. The IBM logo is in the top right corner, and the copyright notice '© Copyright IBM Corporation 2013' is at the bottom right.

WebSphere Education

Profile Management Tool: Web server definition

Web Server Definition

Optionally create a Web server definition if you use a Web server to route requests for dynamic content to the application server. Alternatively, you can create a Web server definition from the administrative console or a script that is generated during Web server plug-ins installation.

☐ Create a Web server definition

Web server type:
IBM HTTP Server

Web server operating system:
Linux

Web server name:
webserver1

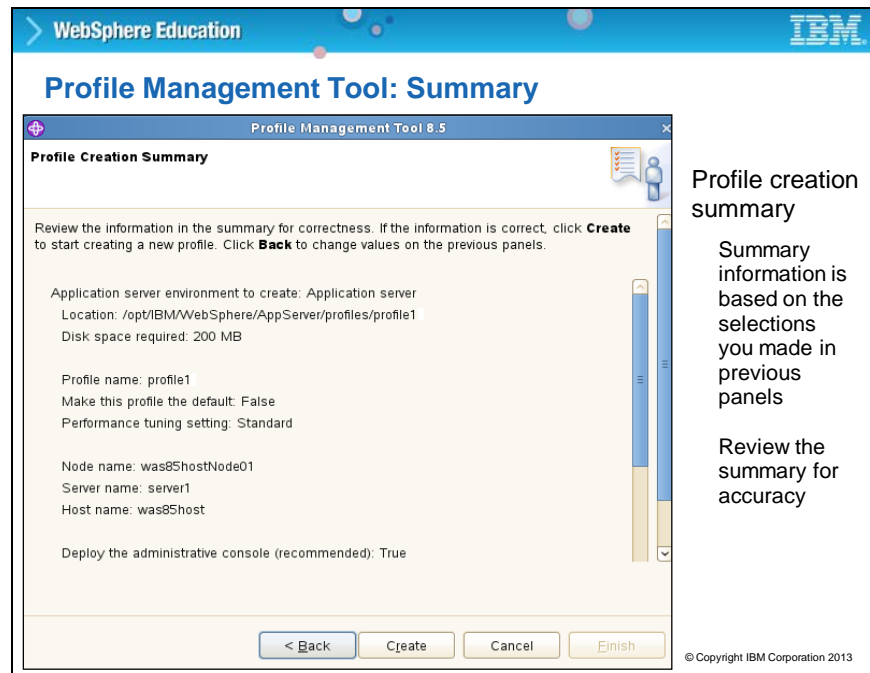
Web server host name or IP address:
was85host

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For advanced profile creation, if you choose to include a web server definition in the profile, specify the web server characteristics, and click **Next** until you complete all the web server definition panels.

If you use a web server to route requests to the product, include a web server definition. You can include the definition now, or define the web server later. If you define the web server definition during the creation of this profile, then you can install the web server and its plug-in after you create the profile. However, you must install both components to the paths that you specify on the web server definition panels. If you define the web server to the product after you create this profile, then you must define the web server in a separate profile.

Slide 38



This page provides a summary of the options you chose for the profile creation. Review the summary and click **Next**.

Profile Management Tool: Results

Profile Creation Complete

The Profile Management Tool created the profile successfully.

The next step is to decide whether to federate the application server into a deployment manager cell.

To federate the application server, use either the **addNode** command or the administrative console of the deployment manager. Using the administrative console requires the application server to be running.

You can start and stop the application server from the command line or the First steps console. The First steps console also has links to an installation verification test and other information and features that relate to the application server.

☐ Launch the First steps console.

To start the Profile Management Tool later, `app_server_root\bin\ProfileManagement d` steps console.

[< Back](#) [Next >](#)

Profile creation results


- Optionally start the First steps console when finished
- Each profile that you create is displayed in the profile list

Profile name	Environment	Profile path
Dmgr	Management	/opt/IBM/WebSphere/AppServer/pro
profile1	Application server	/opt/IBM/WebSphere/AppServer/pro
profile2	Custom profile	/opt/IBM/WebSphere/AppServer/pro

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When the profile creation completes, the tool displays the profile creation complete panel. Optionally, select **Launch the First steps console**. With the First steps console, you can create more profiles and start the application server.

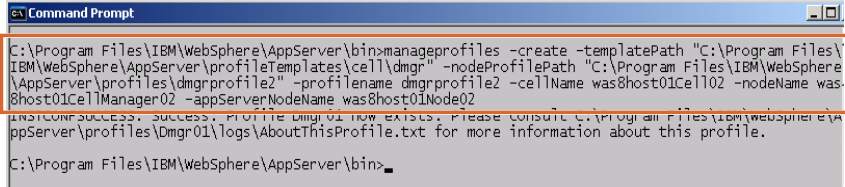
Each profile that is created by using this installation is listed in the Profile Management Tool. Click **Finish** to exit.

WebSphere Education 

Profile creation with command-line tool

- The **manageprofiles** command-line tool allows you to create, list, alter, or delete profiles

manageprofiles -<mode> -<argument> <argument parameter>

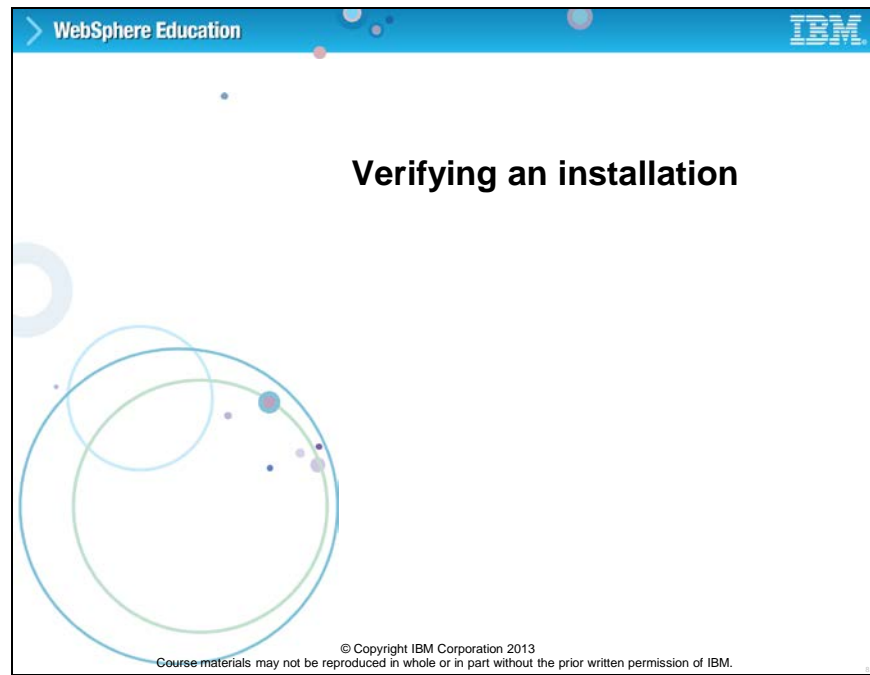


```
C:\Program Files\IBM\WebSphere\AppServer\bin>manageprofiles -create -templatePath "C:\Program Files\IBM\WebSphere\AppServer\profileTemplates\cell\dmgr" -nodeProfilePath "C:\Program Files\IBM\WebSphere\AppServer\profiles\dmgrprofile2" -profileName dmgrprofile2 -cellName was8host01Cell02 -nodeName was8host01CellManager02 -appServerNodeName was8host01Node02
INFOCPSUCCESS: Success. Profile dmgr01 now exists. Please consult C:\Program Files\IBM\WebSphere\AppServer\profiles\dmgr01\logs\AboutThisProfile.txt for more information about this profile.
C:\Program Files\IBM\WebSphere\AppServer\bin>
```

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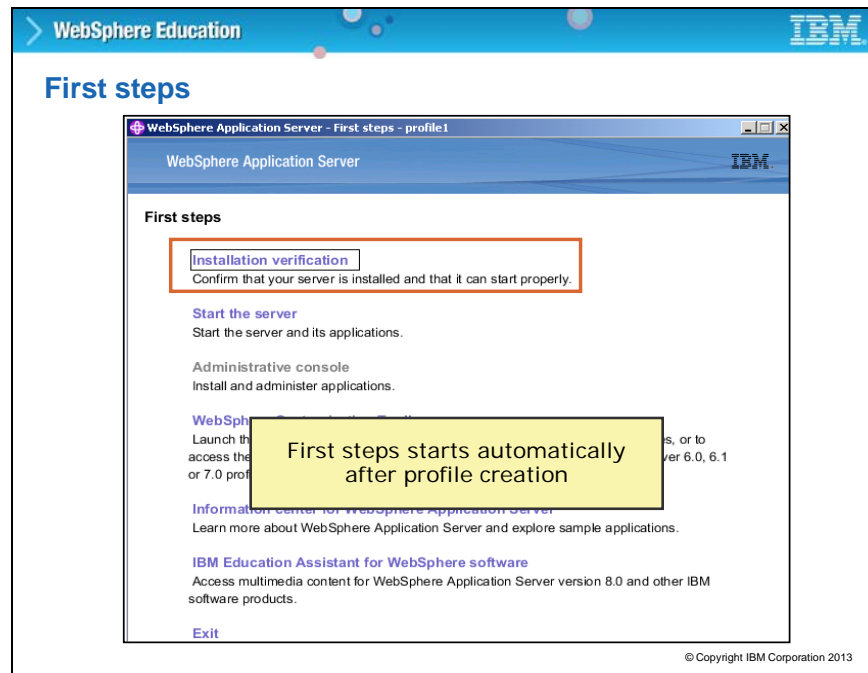
You can use the **manageprofiles** command to create and manage profiles. The command-line tool allows you to create, list, alter, or delete profiles. The **manageprofiles** command and its graphical user interface, the Profile Management Tool, are the only ways to create runtime environments. On the slide, you can see there are multiple parameters for this command. Consult the information center for an explanation of each parameter.

Slide 41



Topic: Verifying an installation. In this topic, you learn how to verify an installation.

Slide 42



If you select to start the First steps console after the profile creation, the program will be started. From this page, you are able to verify the installation by starting the installation verification tool, or start the server and then open the administrative console. You can also start the WebSphere Customization Toolbox, view the information center, access the IBM Education Assistant for WebSphere, or exit.

WebSphere Education

Installation verification

```

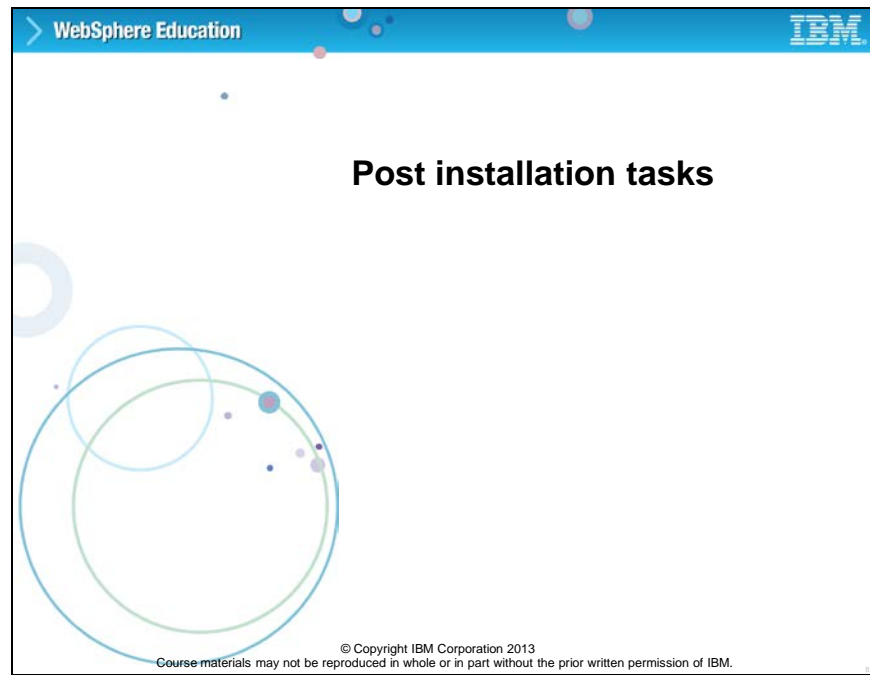
[10/17/11 11:28:24:071 EDT] 00000007 wtp W org.eclipse.jst.j2ee.commonarchivecore.interna
[10/17/11 11:28:24:087 EDT] 00000007 wtp W org.eclipse.jst.j2ee.commonarchivecore.interna
[10/17/11 11:28:24:087 EDT] 00000007 wtp W org.eclipse.jst.j2ee.commonarchivecore.interna
[10/17/11 11:28:24:087 EDT] 00000007 wtp W org.eclipse.jst.j2ee.commonarchivecore.interna
[10/17/11 11:28:24:087 EDT] 00000007 wtp W org.eclipse.jst.j2ee.commonarchivecore.interna
[10/17/11 11:28:24:103 EDT] 00000007 wtp W org.eclipse.jst.j2ee.commonarchivecore.interna
[10/17/11 11:28:24:196 EDT] 00000007 wtp W org.eclipse.jst.j2ee.commonarchivecore.interna
[10/17/11 11:28:26:478 EDT] 00000007 wtp W org.eclipse.jst.j2ee.commonarchivecore.interna
[10/17/11 11:28:26:478 EDT] 00000007 wtp W org.eclipse.jst.j2ee.commonarchivecore.interna
IVTL0040I: 126 errors/warnings are detected in the C:\Program Files\IBM\WebSphere\AppServer\pr
IVTL0070I: The Installation Verification Tool verification succeeded.
IVTL0080I: The installation verification is complete.
          
```

- When successful, the Installation Verification Tool starts the application server and displays a successful completion message

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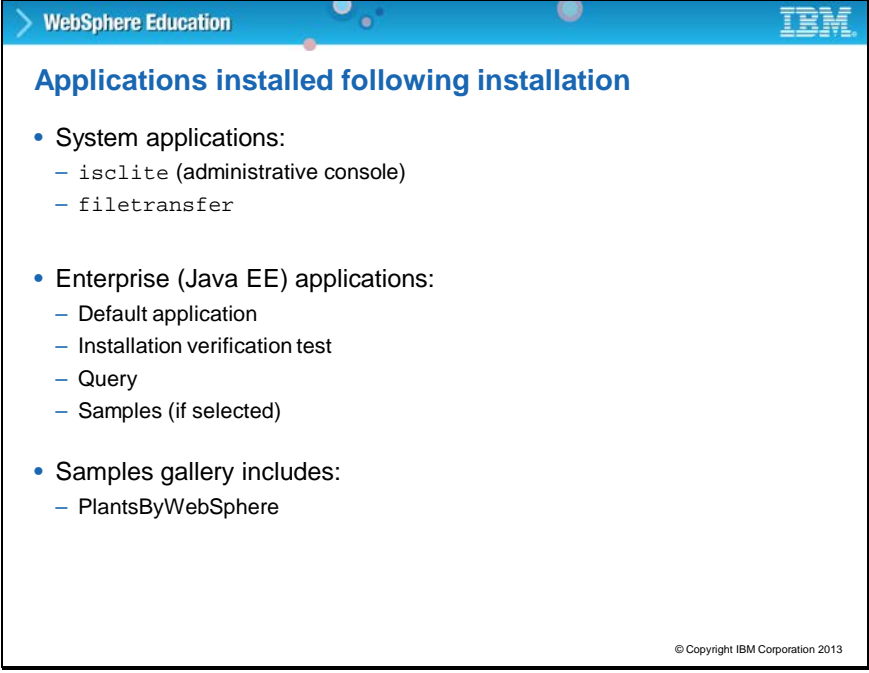
The installation verification tool starts the server process of a profile automatically if the server is not running. After the server initializes, the installation verification tool runs a series of verification tests. The tool displays pass or fail status in a console window. The tool also logs results to the `ivtClient.log` file in the logs directory for the profile. As the tool verifies your system, it reports any detectable errors in the `SystemOut.log` file.

Slide 44



Topic: Post installation tasks. This topic describes the post installation tasks.

Slide 45



The slide is titled "WebSphere Education" and "IBM". The main heading is "Applications installed following installation". It lists three categories of applications:

- System applications:
 - isclite (administrative console)
 - filetransfer
- Enterprise (Java EE) applications:
 - Default application
 - Installation verification test
 - Query
 - Samples (if selected)
- Samples gallery includes:
 - PlantsByWebSphere

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Depending on the options you chose during installation and profile creation, several applications might be installed.

A *system application* is a Java Platform, Enterprise Edition (Java EE) enterprise application that is central to a WebSphere Application Server product. Because a system application is an important part of a WebSphere Application Server product, a system application is deployed when the product is installed and is updated only through a product fix or upgrade. System applications consist of isclite (administrative console) and the filetransfer application. These applications are not listed in the administrative console and you cannot administer them.

Enterprise applications consist of the Default Application, Installation verification test, and the Query application. If you selected sample applications, the PlantsByWebSphere sample application is installed.

Slide 46

WebSphere Education

IBM

Uninstall

IBM Installation Manager


Cannot custom uninstall parts of WebSphere installation

- All the components are removed
- Logs and properties files are not removed

Silent uninstallation is supported by running IBM Installation Manager as a background process


Always use IBM Installation Manager to uninstall

- Do not use Add/Remove program to uninstall WebSphere




Install

Install software packages.




Update

Discover and install updates and fixes to installed software packages.




Modify

Change installed software packages by adding or removing features and functions.



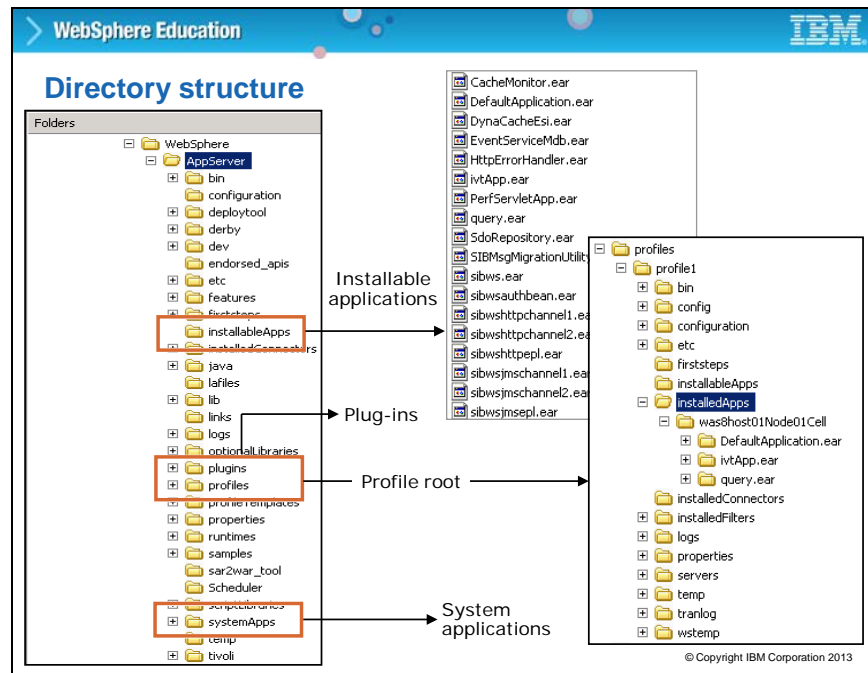
Roll Back



Uninstall

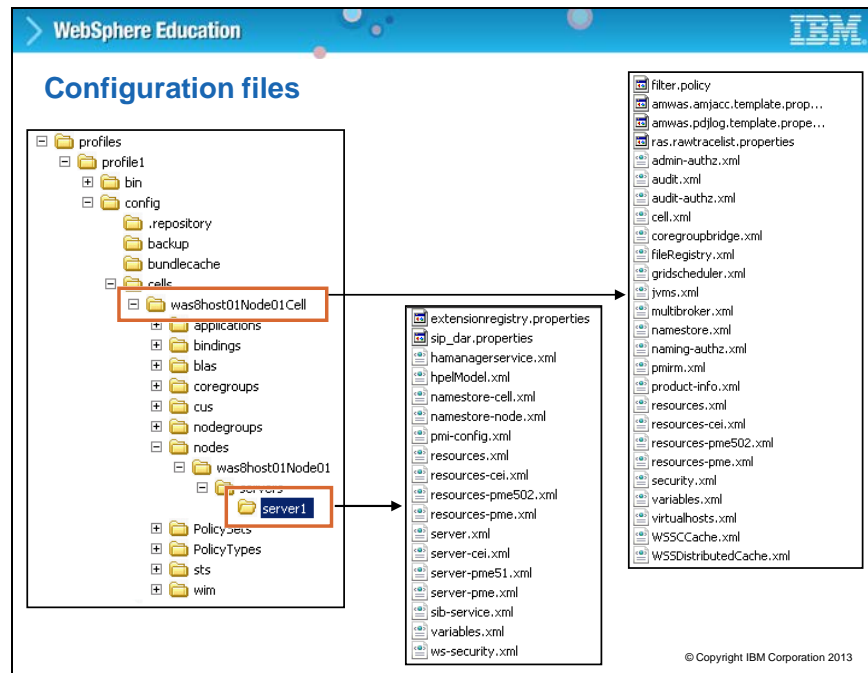
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In WebSphere Application Server V8.5, you use the Installation Manager to uninstall the product. You cannot uninstall parts of the installation. All components are removed. However, logs and properties files are not removed. The product can also be uninstalled by using the silent option.



This screen capture displays the directory structure after a profile is created. Take note of the **profiles** directory. Beneath the **profiles** directory are the files and directories that represent the runtime environment for the application server. This picture shows a single profile, but there can be a deployment manager and other profiles in the **profiles** directory.

In a Network Deployment environment, the profiles directory changes each time that you add, change, or delete a profile. The profiles directory is the default repository for profiles. However, you can put a profile anywhere on the system, provided enough disk space is available.



Beneath the **config** directory of the profile, you find configuration files that are specific to the application server for the profile. Configuration files are typically well-formed xml files.

Slide 49

WebSphere Education
IBM

Common command-line tools

- **startServer** starts a server

```

C:\Program Files\IBM\WebSphere\AppServer\bin>startServer server1 -profileName profile1
ADMU0110I: Tool information is being logged in file C:\Program Files\IBM\WebSphere\AppServer\profiles\profile1\logs\server1\startServer.log
ADMU0128I: Starting tool with the profile1 profile
ADMU3100I: Reading configuration for server: server1
ADMU3200I: Server launched. Waiting for initialization status.
ADMU3000I: Server server1 open for e-business; process id is 5060

```

- **stopServer** stops a server

```

C:\Program Files\IBM\WebSphere\AppServer\bin>stopServer server1 -profileName profile1 -username wasadmin -password webSphere
ADMU0110I: Tool information is being logged in file C:\Program Files\IBM\WebSphere\AppServer\profiles\profile1\logs\server1\stopServer.log
ADMU0128I: Starting tool with the profile1 profile
ADMU3100I: Reading configuration for server: server1
DMU3201I: Server stop request issued. Waiting for stop status.
DMU4000I: Server server1 stop completed.

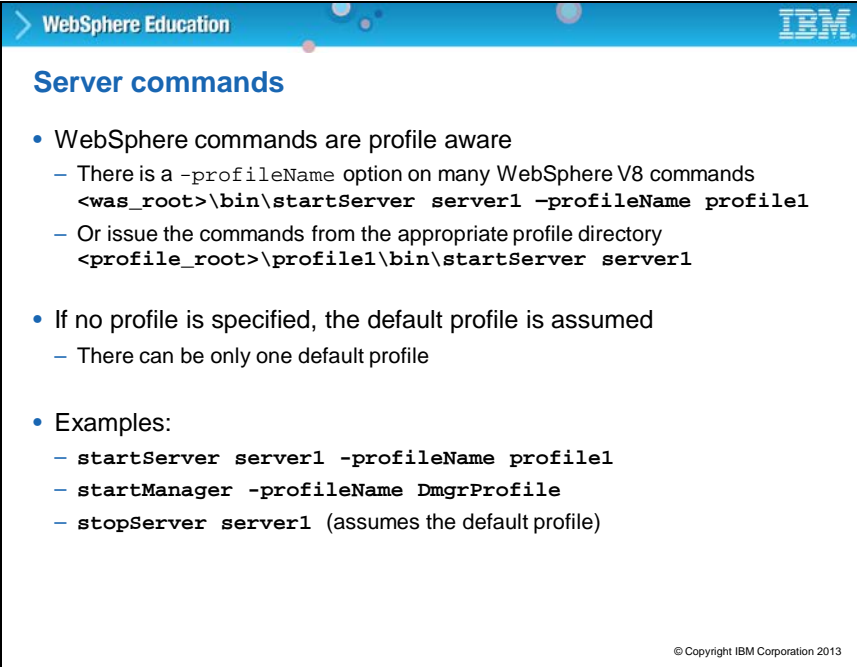
```

- **serverStatus** displays server status
- **versionInfo** displays installed product versions

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Four common command-line tools are often used for administration.

- The **startServer** command is used to start an instance of an application server. The startServer command reads the configuration file for the specified server process and starts that server process.
- The **stopServer** command reads the configuration file for the specified server process. This command sends a Java management extensions (JMX) command to the server that tells it to shut down. The server process can be an application server, a DMZ Secure Proxy Server for IBM WebSphere Application Server, an administrative agent server, or a job manager server. By default, the stopServer command does not return control to the command line until the server completes the shutdown process. There is a -nowait option to return immediately, and other options to control the behavior of the stopServer command. For more information about where to run this command, see the Using command-line tools topic.
- The **serverStatus** command displays the status of one or all of the servers that are configured on a node.
- The **versionInfo** tool displays important data about the product and the installed fix packs and interim fixes, such as the build version and build date. The tool is useful when working with support personnel to determine the cause of any problem.



The slide is titled "Server commands" and is part of a "WebSphere Education" presentation. It contains a bulleted list of information about WebSphere commands. The first bullet point states that WebSphere commands are profile aware, with two sub-points: one explaining the `-profileName` option and providing the command `<was_root>\bin\startServer server1 -profileName profile1`, and another explaining that commands can be issued from the profile directory with the command `<profile_root>\profile1\bin\startServer server1`. The second bullet point states that if no profile is specified, the default profile is assumed, with a sub-point noting that there can be only one default profile. The third bullet point provides examples of commands: `startServer server1 -profileName profile1`, `startManager -profileName DmgrProfile`, and `stopServer server1` (noting it assumes the default profile). The IBM logo is in the top right corner, and a copyright notice is at the bottom right.

WebSphere Education

Server commands

- WebSphere commands are profile aware
 - There is a `-profileName` option on many WebSphere V8 commands
`<was_root>\bin\startServer server1 -profileName profile1`
 - Or issue the commands from the appropriate profile directory
`<profile_root>\profile1\bin\startServer server1`
- If no profile is specified, the default profile is assumed
 - There can be only one default profile
- Examples:
 - `startServer server1 -profileName profile1`
 - `startManager -profileName DmgrProfile`
 - `stopServer server1` (assumes the default profile)

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WebSphere commands are profile aware. These commands can be entered either from the bin directory of the WebSphere Application Server root or they can be issued from the bin directory of the profile. If the command is issued from the WebSphere Application Server root, then you must supply the profile name by using `-profileName` option.

If no profile is specified, then the command assumes the default profile. There is only one default profile. The default profile can be specified during the profile creation or it is the first profile that is created for an installation.

In the first two examples that are shown here, the `-profileName` option is provided with the server commands. The third command assumes the default profile to run against since the `-profileName` option is not included.

Slide 51

WebSphere Education
IBM

Configuration backup and restore

- Backup configuration files: **backupConfig <backup_file>.zip**

```

C:\Program Files\IBM\WebSphere\AppServer\profiles\profile1\bin>backupConfig WebSphereConfig_2011_10_10.zip -nostop -username wasadmin -password webisphere
ADMU0128I: Tool information is being logged in file C:\Program Files\IBM\WebSphere\AppServer\profiles\profile1\logs\backupConfig.log
ADMU0128I: Starting tool with the profile1 profile
ADMU5001I: Backing up config directory C:\Program Files\IBM\WebSphere\AppServer\profiles\profile1\config to file C:\Program Files\IBM\WebSphere\AppServer\profiles\profile1\bin\WebSphereConfig_2011_10_10.zip

```

- Restore configuration files: **restoreConfig <backup_file>.zip**

```

C:\Program Files\IBM\WebSphere\AppServer\profiles\profile1\bin>restoreConfig WebSphereConfig_2011_10_10.zip -nostop -username wasadmin -password webisphere
ADMU0128I: Tool information is being logged in file C:\Program Files\IBM\WebSphere\AppServer\profiles\profile1\logs\restoreConfig.log
ADMU0128I: Starting tool with the profile1 profile
ADMU5502I: The directory C:\Program Files\IBM\WebSphere\AppServer\profiles\profile1\config already exists; renaming to C:\Program Files\IBM\WebSphere\AppServer\profiles\profile1\config.old
ADMU5504I: Restore location successfully renamed
ADMU5505I: Restoring file WebSphereConfig_2011_10_10.zip to location C:\Program Files\IBM\WebSphere\AppServer\profiles\profile1\config

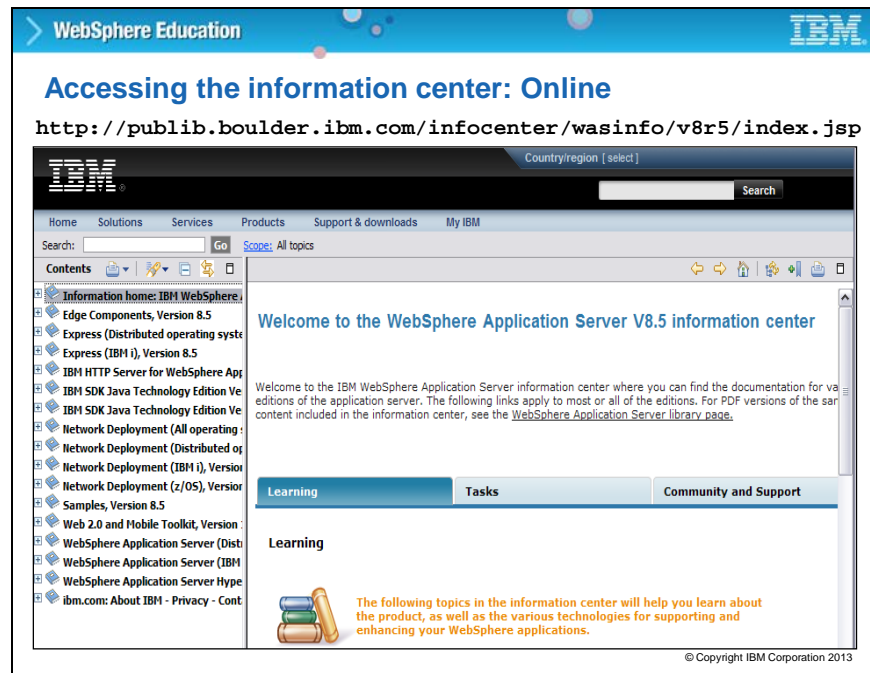
```

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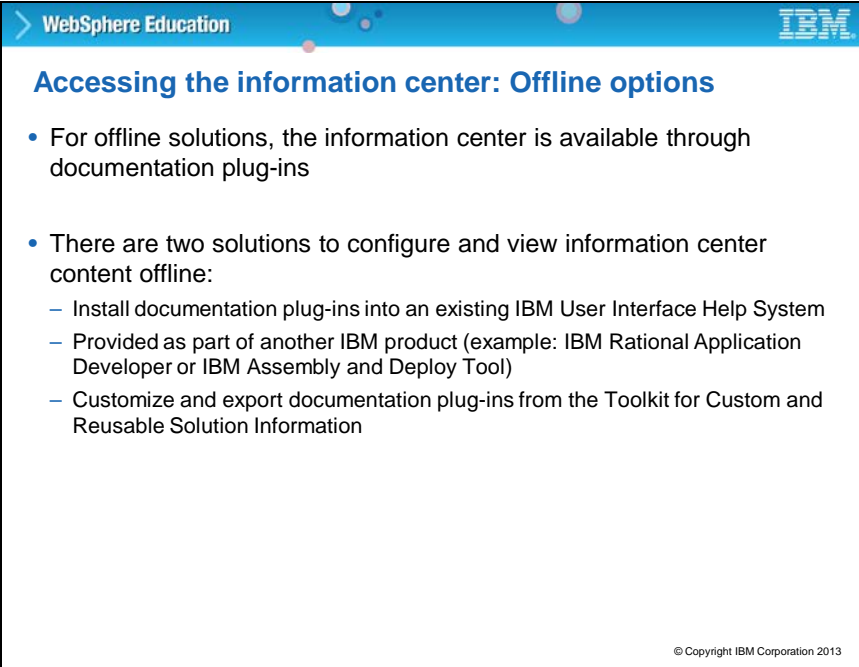
Commands for backing up and restoring a configuration are shown here. When you use the backupConfig command, all the servers on the node stop before the backup is made, which ensures partially synchronized information is not saved by default. For more information about where to run this command, see command-line tools. If you do not have root authority, you must specify a path for the backup file in a location where you have write permission. The backup file is saved in compressed file format.

The restoreConfig command is a simple utility to restore the configuration of your node after backing up the configuration by using the backupConfig command. By default, all servers on the node stop before the configuration restores so that a node synchronization does not occur during the restoration. If the configuration directory exists, it is renamed before the restoration occurs.

Slide 52



The information center can be accessed online by using the url on the slide. The information center is a help center that allows the user to browse the product documentation.



The slide is titled "Accessing the information center: Offline options" and is part of a "WebSphere Education" presentation. It contains a bulleted list of two main solutions for accessing information center content offline. The first solution is to install documentation plug-ins into an existing IBM User Interface Help System. The second solution is to provide the plug-ins as part of another IBM product, such as the IBM Rational Application Developer or IBM Assembly and Deploy Tool. A third option is to customize and export documentation plug-ins from the Toolkit for Custom and Reusable Solution Information. The IBM logo is visible in the top right corner, and the copyright notice "© Copyright IBM Corporation 2013" is at the bottom right.

WebSphere Education

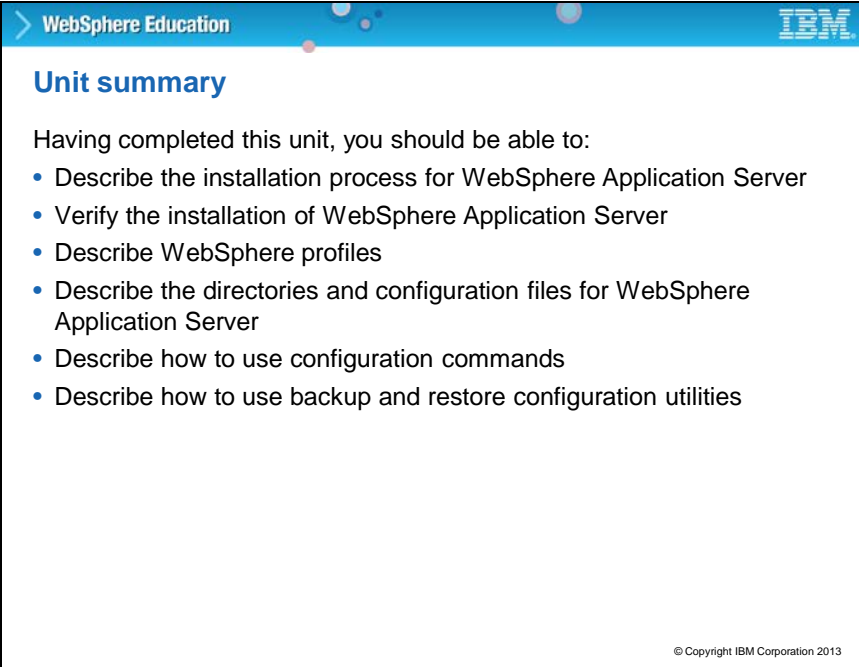
Accessing the information center: Offline options

- For offline solutions, the information center is available through documentation plug-ins
- There are two solutions to configure and view information center content offline:
 - Install documentation plug-ins into an existing IBM User Interface Help System
 - Provided as part of another IBM product (example: IBM Rational Application Developer or IBM Assembly and Deploy Tool)
 - Customize and export documentation plug-ins from the Toolkit for Custom and Reusable Solution Information

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There are two solutions to configure and view the information center content offline. Install the documentation plug-in into an existing IBM User Interface Help System that is provided as part of another IBM product. The IBM Rational Application Developer or IBM Assembly and Deploy Tool are two products where the plug-ins can be installed. The other option is to customize and export documentation plug-ins from the Toolkit for Custom and Reusable Solution Information.

Slide 54



The slide is titled 'WebSphere Education' in the top left corner and features the IBM logo in the top right corner. The main heading is 'Unit summary' in blue. Below it, a paragraph states: 'Having completed this unit, you should be able to:'. This is followed by a bulleted list of six items. At the bottom right, there is a small copyright notice: '© Copyright IBM Corporation 2013'.

WebSphere Education

IBM

Unit summary

Having completed this unit, you should be able to:

- Describe the installation process for WebSphere Application Server
- Verify the installation of WebSphere Application Server
- Describe WebSphere profiles
- Describe the directories and configuration files for WebSphere Application Server
- Describe how to use configuration commands
- Describe how to use backup and restore configuration utilities

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You completed this unit.

Having completed this unit, you should be able to:

- Describe the installation process for WebSphere Application Server
- Verify the installation of WebSphere Application Server
- Describe WebSphere profiles
- Describe the directories and configuration files for WebSphere Application Server
- Describe how to use configuration commands
- Describe how to use backup and restore configuration utilities