



## Getting Started

**Note**

Before using this information, be sure to read the general information under Appendix A, "Notices," on page 17.

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## How to send your comments

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- To send comments on articles in the WebSphere Application Server information center:
  1. Display the article in your Web browser and scroll to the end of the article.
  2. Click on the **Feedback** link at the bottom of the information center article, and a separate window containing an e-mail form appears.
  3. Fill out the e-mail form as instructed, and click **Submit feedback** .
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## Chapter 1. Migrating from previous releases of IBM HTTP Server

This section provides information about upgrading from a previous version of IBM® HTTP Server.

Consider the following information before you upgrade the Apache HTTP Server or IBM HTTP Server.

**Best Practice:** If you are using the `mod_ibm_ldap` module for your LDAP configuration, consider migrating your `mod_ibm_ldap` directives to use the `mod_ldap` module. The `mod_ibm_ldap` module is provided with this release of IBM HTTP Server for compatibility with previous releases, however, you must migrate existing configurations to use the `mod_authnz_ldap` and `mod_ldap` modules to ensure future support for your LDAP configuration.

If you are upgrading from a previous version of IBM HTTP Server and you want to install the new version in the same directory location, you must first uninstall the previous version of IBM HTTP Server.

Issue these commands from the `<ihsinst>/bin` directory instead of the system directory: `gsk7cmd`, `gsk7ver`, and `gsk7capicmd`.

Some modules and commands might have changed for this release. See the topics about supported Apache modules and programs for information about updates or changes to modules or programs before you upgrade IBM HTTP Server.

WebSphere® Application Server provides a new plug-in for the Apache HTTP Server and the IBM HTTP Server. See the list item below about upgrading Apache plug-in modules.

Consider the following information when upgrading your version of IBM HTTP Server.

- **Upgrading IBM HTTP Server from your previous installation**

When you upgrade IBM HTTP Server from a previous version, complete these steps to install the new version in the same directory location as the previous version. If the new version is installed in a different directory, you do not need to complete these steps.

1. Uninstall the previous IBM HTTP Server version. This will leave behind any customized configuration files added after the initial installation.
2. Rename the directory containing the files of the uninstalled IBM HTTP Server.
3. Install the new IBM HTTP Server.
4. Overwrite the new IBM HTTP Server configuration files with the saved files from the renamed directory.

- **Migrating the `mod_ibm_ldap` module directives to use the `mod_ldap` module directives.**

If you are using the `mod_ibm_ldap` module for your LDAP configuration, consider migrating your `mod_ibm_ldap` directives to use the `mod_ldap` module directives. The `mod_ibm_ldap` module is provided with this release of IBM HTTP Server for compatibility with previous releases, however, you must

migrate existing configurations to use the `mod_ldap` module directives to ensure future support for your LDAP configuration.

- **Upgrading Apache plug-in modules**

Apache plug-in modules from sources other than the IBM HTTP Server 7.0 installation must be built to support Apache 2.2. The distributors of modules used with older versions of IBM HTTP Server might need to recompile the modules to support Apache 2.2.

- WebSphere Application Server provides a new plug-in for Apache 2.2 and IBM HTTP Server 7.0.
- If you use modules from third party vendors, contact your vendor for a version of the module that works with the Apache 2.2 API (application programming interface).
- If you use modules developed in-house, you must rebuild your modules to support Apache 2.2. The modules might also require some modifications.



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## Chapter 2. Installing IBM HTTP Server

This article describes installing IBM HTTP Server using the launchpad.

Set the umask value to 022. To verify that the umask value is set to 022, run the umask command.

1. Prepare your operating platform for installing IBM HTTP Server as you would for installing any of the installable components on the product disc. Refer to the Information center topic "Preparing the operating system for product installation" that is specific for your WebSphere Application Server product.
2. Insert the product disc and mount the disc if necessary.

**AIX** **HP-UX** **Linux** **Solaris** See "Mounting CD-ROMS on AIX, HP-UX, Linux and Solaris systems" on page 4 for information about mounting the product disc.

3. Start the installation with the launchpad command:
  - **AIX** **HP-UX** **Linux** **Solaris** **launchpad.sh**
  - **Windows** **launchpad.bat**

You can also start the installation from the IHS directory, where IHS is the installable component directory on the product disc. Launch the following command from the product disc:

- **AIX** **HP-UX** **Linux** **Solaris** **./install**
- **Windows** **install.exe**

When using the launchpad, launch the Installation wizard for IBM HTTP Server. Refer to the Information center topic "Using the launchpad to start the installation" that is specific for your WebSphere Application Server product.

After launching the Installation wizard from the launchpad or from the command line, the ISMP wizard initializes and then presents the Welcome panel.

4. Click **Next** to display the License agreement panel.
5. Accept the license agreement and click **Next** to display the operating system prerequisites check panel.
6. Click **Next** to display the installation root directory panel.
7. Specify the root directory information and click **Next** to display the port specification panel. The port specification panel enables you to modify the ports to use for IBM HTTP Server and the IBM HTTP Server administration server. The default port values are 80 for IBM HTTP Server and 8008 for the IBM HTTP administration module. Specify unique port values if the default ports are already in use by another application.

**Tip:** Issue `netstat -an` from the command prompt to display a list of active ports.

8. **Windows** Click **Next** to display the Windows<sup>®</sup> Service Definition panel. You have the option to create a Windows service for IBM HTTP Server and the IBM HTTP Server administration server on this panel. You can configure the services to run as Local System account or a user ID that you specify. The user ID requires the following advanced user rights:
  - Act as part of the operating system and Log on as a service.

- If you are planning to administer IBM HTTP Server using the WebSphere Application Server administrative console, select Run IBM HTTP Server Administration as a Windows Service with Log on as Local System account. A user name and password is not required for this selection.
  - If you will not administer IBM HTTP Server using the WebSphere Application Server administrative console, select Run IBM HTTP Server Administration Server as a Windows Service with Log on as a specified user account. Specify your user ID and password information.
9. Click **Next** to display the IBM HTTP Server Administration Server Authentication panel. If selected, this panel creates a user ID and password to authenticate to the IBM HTTP Server administration server using the Websphere Application Server administrative console. This user ID and password can optionally be created after installation using the htpasswd utility.
  10. AIX HP-UX Linux Solaris Click **Next** to display the IBM HTTP Server Administration Server setup panel. This panel collects information to enable the installation to grant a user ID write access to the necessary IBM HTTP Server and plug-in configuration files. The IBM HTTP Server administration server runs as the specified user ID.
  11. Click **Next** to display the IBM HTTP Server Plug-in for Websphere Application Server panel. This panel collects information to install the Websphere Application Server Plug-in into a directory that is relative to the IBM HTTP Server installation location, using the remote setup type.

**Important:** If the plugin directory does not exist at the same level as the IBM HTTP Server directory, the prompt panel for selecting the plug-ins installer does not display. In that case, launch the plug-ins installer from the launchpad or launch the following command from the plugin directory:

- AIX HP-UX Linux Solaris `./install`
- Windows `install.exe`

12. Click **Next** to review the confirmation panel to verify your selections. Click **Back** to change any of your specifications.
13. Click **Next** to begin installing IBM HTTP Server.

If the installation is successful, the IBM HTTP Server product is installed and the log file is located in the `/logs/install/` directory. However, if the product installation fails, see the `log.txt` file in either the `/logs/install/` directory or the `$/USER/ihslogs/` directory.

Set up IBM HTTP Server administration authentication, using the `htpasswd` utility.

You can get started using Secure Sockets Layer (SSL) connections by making only a few configuration changes.

AIX Windows You can configure the Fast Response Cache Accelerator to boost performance.

You can also make many other configuration changes with Apache directives.

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## Mounting CD-ROMS on AIX, HP-UX, Linux and Solaris systems

This section describes how to mount the CD-ROM for IBM HTTP Server on AIX®, HP-UX®, Linux® and Solaris operating systems.

After inserting a CD-ROM into a drive, some operating systems require you to mount the drive.

Use these procedures to mount the product discs for IBM HTTP Server.

- **AIX** **Mount the CD-ROM using the System Management Interface Tool (SMIT) as follows:**
  1. Log in as a user with root authority.
  2. Insert the CD-ROM in the drive.
  3. Create a CD-ROM mount point by entering the `mkdir -p /cdrom` command, where `cdrom` represents the CD-ROM mount point directory.
  4. Allocate a CD-ROM file system using SMIT by entering the **smit storage** command.
  5. After SMIT starts, click **File Systems > Add / Change / Show / Delete File Systems > CDROM File Systems > Add CDROM File System**.
  6. In the Add a File System window:
    - Enter a device name for your CD-ROM file system in the **DEVICE Name** field. Device names for CD-ROM file systems must be unique. If there is a duplicate device name, you may need to delete a previously-defined CD-ROM file system or use another name for your directory. The example uses `/dev/cd0` as the device name.
    - Enter the CD-ROM mount point directory in the **MOUNT POINT** window. In our example, the mount point directory is `/cdrom`.
    - In the **Mount AUTOMATICALLY at system restart** field, select yes to enable automatic mounting of the file system.
    - Click **OK** to close the window, then click **Cancel** three times to exit SMIT.
  7. Next, mount the CD-ROM file system by entering the **smit mountfs** command.
  8. In the Mount a File System window:
    - Enter the device name for this CD-ROM file system in the **FILE SYSTEM name** field. In our example, the device name is `/dev/cd0`.
    - Enter the CD-ROM mount point in the **Directory over which to mount** field. In our example, the mount point is `/cdrom`.
    - Enter `cdrfs` in the **Type of Filesystem** field. To view the other kinds of file systems you can mount, click **List**.
    - In the **Mount as READ-ONLY system** field, select yes.
    - Accept the remaining default values and click **OK** to close the window.Your CD-ROM file system is now mounted. To view the contents of the CD-ROM, place the disk in the drive and enter the `cd /cdrom` command where `cdrom` is the CD-ROM mount point directory.
- **HP-UX** **Mount the CD-ROM.** Because WebSphere Application Server contains several files with long file names, the mount command can fail. The following steps let you successfully mount your WebSphere Application Server product CD-ROM.
  1. Log in as a user with root authority.
  2. In the `/etc` directory, add the following line to the `pfs_fstab` file:

```
/dev/dsk/c0t2d0 mount_point pfs-rrip ro,hard
```

where `mount_point` represents the mount point of the CD-ROM.
  3. Start the `pfs` daemon by entering the following commands (if they are not already running):

```
/usr/sbin/pfs_mountd &  
/usr/sbin/pfsd 4 &
```

4. Insert the CD-ROM in the drive and enter the following commands:

```
mkdir /cdrom  
/usr/sbin/pfs_mount /cdrom
```

The */cdrom* variable represents the mount point of the CD-ROM.

5. Log out.

- **Linux** **Mount the CD-ROM using the following steps.**

1. Log in as a user with root authority.
2. Insert the CD-ROM in the drive and enter the following command:

```
mount -t iso9660 -o ro /dev/cdrom /cdrom
```

The */cdrom* variable represents the mount point of the CD-ROM.

3. Log out.

Some window managers can automatically mount your CD-ROM for you. Consult your system documentation for more information.

- **Solaris** **Mount the CD-ROM using the following steps.**

1. Log in as a user with root authority.
2. Insert the CD-ROM into the drive.
3. If the Volume Manager is not running on your system, enter the following commands to mount the CD-ROM:

```
mkdir -p /cdrom/unnamed_cdrom  
mount -F hsfs -o ro /dev/dsk/c0t6d0s2 /cdrom/unnamed_cdrom
```

The */cdrom/unnamed\_cdrom* variable represents the CD-ROM mount directory and the */dev/dsk/c0t6d0s2* represents the CD-ROM drive device.

If you are mounting the CD-ROM drive from a remote system using NFS, the CD-ROM file system on the remote machine must be exported with root access. You must also mount that file system with root access on the local machine.

If the Volume Manager (vold) is running on your system, the CD-ROM is automatically mounted as:

```
/cdrom/unnamed_cdrom
```

4. Log out.

Return to the installation procedure to continue.

---

## Installing IBM HTTP Server with a non-administrator user ID

The common way to install IBM HTTP Server is to run the installation program using an administrator user ID. However, it is sometimes necessary to install IBM HTTP Server using a non-administrator (non-root) user ID.

Launching the IBM HTTP Server installation program is done the same way for a non-root installation as it is for a root installation, but there are several installation steps that require root privileges that cannot be completed or must be completed separately. Complete the installation steps as follows:

- **Register the installed program with the operating system.** This cannot be done for a non-root installation. The non-root IBM HTTP Server installation is not listed when using operating system facilities to display installed programs.

- **Windows** Create the Windows service entries for IBM HTTP Server and IBM HTTP Administration Server. This cannot be done for a non-root installation. Neither of these service entries are created and IBM HTTP Server cannot start as a service.

Start IBM HTTP Server as follows:

```
<ihs_install_directory>/bin/httpd.exe
```

Start the IBM HTTP administration server as follows:

```
<ihs_install_directory>/bin/httpd.exe -f <ihs_install_directory>/conf/admin.conf
```

Stop IBM HTTP server as follows:

- Press Control+C in the IBM HTTP Server window, or
- End the httpd.exe processes using the Windows Task Manager

- **Windows** Create an entry in Start > Programs. This cannot be done for a non-root installation. No entries are created.
- **Windows** Create an entry in Add/Remove programs. This cannot be done for a non-root installation. No entry is created.
- **Windows** Install AFP. This cannot be done for a non-root installation. Do not enable AFP for the non-administrator IBM HTTP Server installation, even if AFP is already installed from a previous administrator installation. Only enable AFP for one instance of IBM HTTP Server.
- **Silent installations.** To enable a non-root installation, add the following option to the silent installation response file:  
-OPT allowNonRootSilentInstall="true"

Uninstall a non-root installation of IBM HTTP as follows:

**AIX**

**HP-UX**

**Linux**

**Solaris**

```
<ihs_install_directory>/uninstall/uninstall
```

**Windows**

```
<ihs_install_directory>\uninstall\uninstall.exe
```

---

## Creating multiple instances of IBM HTTP Server on Windows operating systems

On Windows operating systems, you can create multiple instances of IBM HTTP Server by manually creating additional service names.

When you install IBM HTTP Server, you create one IBM HTTP Server as a Windows service with a default name. If you need to run with more than one IBM HTTP Server instance, you can manually create additional service names.

1. Install a new service name. Use the httpd.exe program, which is located in the bin directory of the IBM HTTP Server installation. The command syntax for installing a new service name is:

```
httpd -k install -n <new_service_name> -f  
  <path_to_new_configuration_file>
```

This command allows you to associate a unique configuration file with each service name.

2. Specify different IP addresses or ports in the Listen directives of each configuration file and specify different log file names.
3. Optional: Change settings of the new service using the Windows Services control panel. The new service name will have "Log On" set to "Local System Account" and will have "Startup Type" set to "Automatic." You can change

these default settings using the Windows Services control panel. It might be necessary to change the "Log On" setting of the new service name to match the "Log On" of the main installation in order to ensure that file permissions will allow the new service name to run.

4. Disable the Fast Response Cache Accelerator (FRCA). When running multiple instances of IBM HTTP Server, you must disable the FRCA (AFPA directives) in all configuration files.

After creating a new service name, you can add it to the WebSphere Administration Server administrative console by creating a new Web server definition and specifying the new service name and the path to the new configuration file.

The syntax for uninstalling an existing service name is:

```
httpd -k uninstall -n <service_name>
```

---

## Chapter 3. Installing IBM HTTP Server silently

A silent installation uses the installation wizard to install the product in silent mode, without the graphical user interface. Instead of displaying a wizard interface, the silent installation enables the installation program to read all of your responses from a file that you provide.

Installing IBM HTTP Server using silent installation refers to using a file to supply installation options without user interaction. To configure the installation, change the options in the response file before you issue the installation command. Silent installation mode does not accept interactive installation options. To specify non-default options during a silent installation, you must use the response file. To install silently, you must accept the license agreement in the agreement option.

Verify that the required disk space is available.

See Preparing the operating system for product installation for more information. Do not use the default response file that is shipped on the product disc to install the product, because the value of the `silentInstallLicenseAcceptance` bean is "false". Copy the file to change the value to "true".

- AIX** **HP-UX** **Linux** **Solaris** Log on as root.
  - Windows** Log on as a member of the administrator group. Considerations for Windows operating systems follow:
    - Some steps for installing silently require the administrator group user to have the following advanced user rights:
      - Act as part of the operating system*
      - Log on as a service*
    - The installation wizard grants your Windows user ID the advanced user rights, if the user ID belongs to the administrator group. The silent installation does not grant these rights. If you create a new user ID on a Windows platform to perform the silent installation, you must restart the system to activate the proper authorizations for the user ID, before you can perform a successful silent installation.
    - When installing IBM HTTP Server as a Windows service, do not use a user ID that contains spaces. A user ID with spaces cannot be validated. Such a user ID is not allowed to continue the installation. To work around this problem, install with the service configured to run as LocalSystem, and then modify the user ID after install.
  - Copy the `responsefile.txt` file to your disk drive and rename it, for example `myoptionsfile.txt`. You can now customize it. Accept the IBM HTTP Server license by setting `-OPT silentInstallLicenseAcceptance.value="true"` in your response file.
  - Issue the proper command to use your custom response file. For example, issue one of the following commands:
    - AIX** **HP-UX** **Linux** **Solaris** `mmt_cdrom/IHS/install -options myoptionsfile.txt -silent`
    - Windows** `"CD-ROM drive:\IHS\install" -options "myoptionsfile.txt" -silent`
- AIX** **HP-UX** **Linux** **Solaris** To silently install IBM HTTP Server, the X Windows software must be installed on the system.

You can find the sample options response file in the IBM HTTP Server directory on the product CD.

If the installation is successful, the IBM HTTP Server product is installed and the log file is located in the `/logs/install/` directory. However, if the product installation fails, see the `log.txt` file in either the `/logs/install/` directory or the `$USER/ihslogs/` directory.

**Linux** The IBM HTTP Server installation may hang during the silent install of GSKit. The following message displays in the `installConfig.log` file:

```
<message>error: failed to stat /mnt/xxx: Stale NFS file handle</message>
```

This problem might occur if the system has an unresponsive Network File System (NFS) mount, then the Linux `rpm` command, which is used to install the GSKit, attempts to query the unresponsive file system mount until it times out. To work around this problem, unmount the stale NFS mount, and then mount it again.



---

## Chapter 4. Uninstalling IBM HTTP Server

This section contains procedures for uninstalling the IBM HTTP Server. The uninstaller program is customized for each product installation, with specific disk locations and routines for removing installed features. The uninstaller program does not remove configuration and log files.

1. Stop IBM HTTP Server.
2. Go to the directory where you installed the IBM HTTP Server. Change to the `uninstall` directory located in the root directory.
3. Double-click **uninstall** to launch the uninstallation program. You can also choose to do a silent uninstall by running the `uninstall -silent` command.
4. Click **Next** to begin uninstalling the product. The Uninstaller wizard displays a Confirmation panel that lists the product and features that you are uninstalling.
5. Click **Next** to continue uninstalling the product. The Uninstaller wizard deletes existing profiles first. After deleting profiles, the Uninstaller wizard deletes core product files by component.
6. Click **Finish** to close the wizard after the wizard removes the product.

The IBM HTTP Server uninstallation is now complete. The uninstallation is logged in the `log.txt` file in the `<lhs_install_directory>/logs/uninstall` directory.

---

### Manually uninstalling IBM HTTP Server

Uninstall IBM HTTP Server by running the operating system's uninstaller program and performing some manual steps to remove log files and registry entries. Such registry entries can prevent you from reinstalling the product into the original directory. If you are not planning to reinstall, you do not have to uninstall manually.

Determine the installation root directory for the product so that you remove the correct product and produce a clean system. Before you start the uninstall procedure, save any files you have modified under `HTTPServer_root`, `HTTPServer_root/conf`, or `HTTPServer_root/bin` directories, including: `httpd.conf`, `admin.conf`, any other configuration files, script files, password files, or Web documents that you might have created.

Use the `installRegistryUtils` command to examine the installation locations for all installed IBM HTTP Server products. Perform the following procedure to produce a clean system.

1. Log on as the same user ID that installed the product.
2. Make sure that the instances of IBM HTTP Server and IBM HTTP Server administration server being removed are stopped.
3. Issue the `uninstall` command. If you have already run the uninstaller program or if you cannot run the uninstaller program, skip this step. AIX

HP-UX

Linux

Solaris

```
HTTPServer_root/uninstall/uninstall
```

Windows

```
HTTPServer_root/uninstall/uninstall.exe
```

The Uninstaller wizard begins and displays the Welcome panel. Continue with the uninstall process until it is finished.

4. **IMPORTANT:** If you installed IBM HTTP Server as root or administrator, the following steps clean up the registries when an uninstall request fails. If the uninstall process completes successfully, you do not need to manually perform these steps. **AIX**

- a. List IBM HTTP Server components that are installed. enter the following command to search for related packages:

```
lslpp -l | grep -i IHS
```

Package names for IBM HTTP Server are: WSIHS70 and WSIHS70LicensingComponent.

To remove a package, issue the following command:

```
geninstall -u packagename
```

Do not remove packages for IBM HTTP Server products that you are not uninstalling.

- b. Change directories to the /usr/IBM directory, or the equivalent top directory of your install.
- c. Enter the following command to delete the IBM HTTP Server directory:  

```
rm -rf HTTPServer
```
- d. Use the installRegistryUtils command to examine the installation locations for all installed IBM HTTP Server products and remove the products from the install registry that you want to uninstall.
- e. Edit the vpd.properties file. This file is located in the root directory or in the /usr/lib/objrepos directory. Do not delete or rename the vpd.properties file because the InstallShield MultiPlatform (ISMP) program uses it for other products that it installs. If the IBM HTTP Server product that you are uninstalling is the only product with entries in the vpd.properties file, you can delete this file.

#### **HP-UX**

- a. Use HP-UX System Administration Manager (SAM) to remove packages.
  - 1) Start the SAM utility with the /usr/sbin/sam command
  - 2) Verify that your DISPLAY and TERM environment variables are set properly
  - 3) Click **Software management**
  - 4) Click **View installed software**
  - 5) Search for IBM HTTP Server entries in the SD list
  - 6) Close the SD list
  - 7) Click **Remove local host software**
  - 8) Click any of the following instances that display in the SD Remove List: - IBM HTTP Server
  - 9) Click **Actions > Mark for remove**
  - 10) Click **Actions > Remove**
  - 11) Click **OK** in the Remove analysis dialog box
  - 12) Click **Logs** to display real-time removal of selected packages
  - 13) Click Done when all packages are removed
  - 14) Exit SAM
  - 15) Search for the packages to verify their removal

- b. Enter the following command to display the IBM HTTP Server package:  

```
swlist | grep IHS
```

The package name for IBM HTTP Server is: WSIHS70.

- c. Enter the following command to remove IBM HTTP Server directories in the *HTTPServer\_root* directory:  

```
rm -rf HTTPServer_root
```
- d. Use the `installRegistryUtils` command to examine the installation locations for all the installed IBM HTTP Server products and remove the products from the install registry that you want to uninstall.

#### Linux

- a. Search for IBM HTTP Server related packages. Do not remove packages for IBM HTTP Server products that you are not uninstalling.
- b. If there are packages to delete, enter the following command to remove any packages for the product that you are uninstalling.

```
rpm -e packagename
```

Alternatively, you can enter the following command that will list all the IBM HTTP Server packages and then verify that everything in the list is something you want to delete:

```
rpm -qa | grep IHS
```

If there is a problem with package dependencies, you can use the following command to remove the packages:

```
rpm -e packagename --nodeps --justdb
```

The `nodeps` option skips the dependency check. The `justdb` option updates only the package database, and not the file system. Using only the `nodeps` option can cause a failure in package removal if there is any mismatch in the dependent file system (files and directories).

- c. enter the following command to remove IBM HTTP Server directories in the *HTTPServer\_root* directory:  

```
rm -rf HTTPServer_root
```
- d. Edit the `vpd.properties` file. Do not delete or rename the `vpd.properties` file because the InstallShield MultiPlatform (ISMP) program uses it for other products that it installs. If the IBM HTTP Server product that you are uninstalling is the only product with entries in the `vpd.properties` file, you can delete this file.
- e. Use the `installRegistryUtils` command to examine the installation locations for all installed IBM HTTP Server products and remove the products from the install registry that you want to uninstall.

#### Solaris

- a. Search for IBM HTTP Server related packages. enter the following command to list all the packages for the IBM HTTP Server products:

```
pkginfo | grep IHS
```

If no packages appear when using these commands, skip the next step. The resulting list of packages has the following format:

- application WSIHS70
- IBM HTTP Server

- b. Change directories to the directory where package information is registered:

```
cd /var/sadm/pkg
```

- c. Issue the following command to remove any IBM HTTP Server related packages, for example:

```
pkgrm packagename1 packagename2 ...
```

Do not remove packages for IBM HTTP Server products that you are not uninstalling. Issue the following commands from the /var/sadm/pkg directory to search for and remove any IBM HTTP Server product related packages that are registered in the /var/sadm/pkg directory.

Change directories to the correct directory for IBM HTTP Server products:

```
cd /var/sadm/pkg
ls |grep IHS|xargs -i pkgrm -n {}
```

The package names for IBM HTTP Server are: WSIHS70 and WSIHS70LI. If there is a problem removing the packages, remove the related package directories in the /var/sadm/pkg directory, including the preremove files. For example, remove the following file before issuing the pkgrm -n WSIHS70 command:

```
/var/sadm/pkg/WSIHS70/install/preremove
```

- d. To remove IBM HTTP Server directories in the *HTTPServer\_root* directory, enter the following command:

```
rm -rf HTTPServer_root
```

- e. Use the installRegistryUtils command to examine the installation locations for all installed IBM HTTP Server products and remove the products from the install registry that you want to uninstall.

#### Windows

- a. Log on with Administrator privilege to complete the steps for updating the registry.
- b. Verify that you have an Emergency Recovery Disk. Instructions for creating this disk are in the Windows help documentation. This step is a safeguard. This procedure does not require the recovery disk.
- c. Use the regback.exe program from the Windows Resource Kit to back up the registry. This step is a safeguard. This procedure does not require the backup copy of the registry.
- d. Delete product registry entries for the IBM HTTP Server product that you are uninstalling. Edit the Windows system registry by entering the theregedit.exe command from a command prompt.

#### CAUTION:

**Edit the Registry carefully. You can easily make a mistake while using the registry editor to view and edit registry contents. The editor does not warn you of editing errors, which can be extremely dangerous. A corrupt registry can disrupt your system to the point where your only option is to reinstall the Windows operating system.**

- 1) Press **Ctrl-F** to search for all instances of HTTP Server to determine whether you should delete each entry. You might not be able to remove all of the entries related to IBM HTTP Server, which is not a problem.
- 2) Expand and select keys related to IBM HTTP Server products and IBM HTTP Server Window Services listed below:

```
HKEY_LOCAL_MACHINE\SOFTWARE\IBM\HTTP Server\7.0.0.0
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\IBMHTTPServer7.0
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\IBMHTTPAdministration7.0
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\IBM HTTP Server 7.0.0.0
```

**Note:** Depending on how you installed the product, the following registry keys that are previously listed are only optionally included: HKLM\...IBMHTTPServer7.0 and HKLM\...IBMHTTPAdministration7.0

- 3) Click **Edit > Delete** from the menu bar for each related key.
  - 4) Click **Yes** when asked to confirm deletion of the key.
  - 5) Click **Registry > Exit** from the menu bar when you are finished.
- 8.
- e. Delete the installation root directory for the product that you are uninstalling.
  - f. Open a Windows Explorer window and browse to the C:\Documents and Settings\All Users\Start Menu\Programs directory. If you have an installation of a IBM HTTP Server product, delete the following directory folder: IBM HTTP Server V7.0.
  - g. Delete the %WINDIR%\IsUninst.exe file.
  - h. Edit the vpd.properties file. The file is located in the installation directory of the operating system, such as the C:\WINNT directory or the C:\windows directory. Do not delete or rename the vpd.properties file because the InstallShield MultiPlatform (ISMP) program uses it for other products that it installs. If the IBM HTTP Server product that you are uninstalling is the only product with entries in the vpd.properties file, you can delete this file.
  - i. Use the installRegistryUtils command to examine the installation locations for all installed IBM HTTP Server products and remove the products from the install registry that you want to uninstall.
  - j. Restart your machine.

This procedure results in removing IBM HTTP Server from your system. There will be no trace of the previously deleted installation. You can reinstall IBM HTTP Server into the same directories after manually uninstalling the product.



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## Appendix A. Notices

References in this publication to IBM products, programs, or services do not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM product, program, or service is not intended to state or imply that only IBM's product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any of IBM's intellectual property rights may be used instead of the IBM product, program, or service. Evaluation and verification of operation in conjunction with other products, except those expressly designated by IBM, is the user's responsibility.

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