

HP StorageWorks

Performance Advisor XP 2.1

Installation Guide

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Performance Advisor XP 2.1 Installation Guide

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About this guide

This guide provides information about:

- Installing Performance Advisor XP (PA XP)
- Configuring PA XP
- Uninstalling PA XP

Intended audience

This guide is intended for customers and HP authorized service providers experienced with the following:

- Disk array hardware and software
- Storage systems

Prerequisites

Prerequisites for installing this product include:

- Reading through the installation guide
- Meeting all minimum installation requirements
- Reviewing the readme.txt file on the CD for any last minute announcements

Related documentation

In addition to this guide, please refer to other documents for this product:

- HP StorageWorks Performance Advisor XP 2.1 User Guide
- HP StorageWorks Performance Advisor XP 2.1 Configuration Guide
- HP StorageWorks Performance Advisor XP 2.1 CLUI Guide
- HP StorageWorks Performance Advisor XP 2.1 Troubleshooting Guide
- HP StorageWorks Performance Advisor XP 2.1 Readme

These and other HP documents can be found on an HP web site: <http://www.hp.com/support>. Online help is also available for this product by clicking the help icon within the PA XP user interface.

Document conventions and symbols

Table 1 Document conventions

Convention	Element
Medium blue text: Figure 1	Cross-reference links and e-mail addresses
Medium blue, underlined text (http://www.hp.com)	Web site addresses
Bold font	<ul style="list-style-type: none">• Key names• Text typed into a GUI element, such as into a box• GUI elements that are clicked or selected, such as menu and list items, buttons, and check boxes
<i>Italics font</i>	Text emphasis
Monospace font	<ul style="list-style-type: none">• File and directory names• System output• Code• Text typed at the command-line
<i>Monospace, italic font</i>	<ul style="list-style-type: none">• Code variables• Command-line variables
Monospace, bold font	Emphasis of file and directory names, system output, code, and text typed at the command-line



WARNING! Indicates that failure to follow directions could result in bodily harm or death.



CAUTION: Indicates that failure to follow directions could result in damage to equipment or data.



IMPORTANT: Provides clarifying information or specific instructions.



NOTE: Provides additional information.



TIP: Provides helpful hints and shortcuts.

HP technical support

Telephone numbers for worldwide technical support are listed on the HP web site:
<http://www.hp.com/support/>.

Collect the following information before calling:

- Technical support registration number (if applicable)
- Product serial numbers
- Product model names and numbers
- Applicable error messages
- Operating system type and revision level
- Detailed, specific questions

For continuous quality improvement, calls may be recorded or monitored.

HP strongly recommends that customers sign-up online using the Subscriber's choice web site at
<http://www.hp.com/go/e-updates>.

- Subscribing to this service provides you with email updates on the latest product enhancements, newest versions of drivers, and firmware documentation updates as well as instant access to numerous other product resources.
- After signing-up, you can quickly locate your products by selecting **Business support** and then **Storage** under Product Category.

HP-authorized reseller

For the name of your nearest HP-authorized reseller:

- In the United States, call 1-800-345-1518.
- Elsewhere, visit <http://www.hp.com> and click **Contact HP** to find locations and telephone numbers.

Helpful web sites

For additional product information, see the following web sites:

- <http://www.hp.com>
- <http://www.hp.com/go/storage>
- <http://www.hp.com/support/>

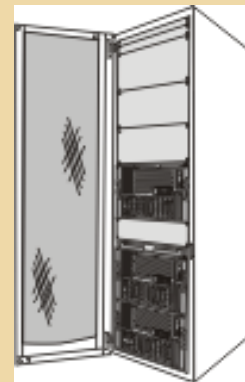
1 Installation overview

Please review the graphical overview presented below prior to following the installation procedures outlined in Chapter 2.

1. Carefully review the minimum product requirements for your browser, disk array, management station, and hosts, as specified in chapter 2 of this installation guide.



2. If you have not configured a command device on the array, you will need to do so. Map the device to the host server.



3. Install Performance Advisor XP on the management station.



4. Install Performance Advisor XP host agent on the host station(s).

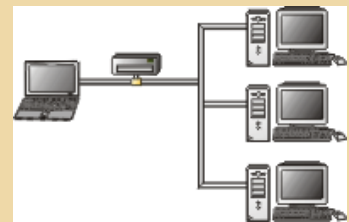


5. Use Performance Advisor XP.



Step 6, below, may be necessary to complete your PA XP configuration. Follow this step if you have host stations where you cannot install PA XP; this will allow you to enter host-to-array connectivity information.

6. To add connectivity information from the CLUI, see the [UserHostConfig.pdf](#) file at `Tools/CmdLineUserInterface` on the Performance Advisor XP CD. To add connectivity information via the GUI, use the Data Grid Update screen, located under PA XP's Configuration tab.



2 Installing HP StorageWorks Performance Advisor XP

Getting started

Before installing or updating HP StorageWorks Performance Advisor XP (PA XP), make sure that you follow these instructions:

- Verify that your browser, disk array, management station, and hosts meet the minimum product requirements.
See "[Browser minimum requirements](#)" on page 12.
See "[Firmware minimum requirements](#)" on page 12.
See "[Management station minimum requirements](#)" on page 12.
See "[Host agent minimum requirements](#)" on page 13.



NOTE: If you plan to integrate other applications such as HP StorageWorks Command View XP (CV XP), additional free disk space is required. Refer to the individual hard disk space specifications on the product CD for these additional requirements.



NOTE: PA XP 2.1 is compatible with CV XP 2.0 or greater.

- If a version of PA XP lower than 1.7B is installed on the management station and you want to retain your current data, you must upgrade the management station to PA XP 1.7B, and then upgrade the management station to PA XP 2.1.
- If the PA XP host agent is currently installed on any hosts, uninstall it prior to installing the new version of the host agent. Refer to the installation guide for your previous version of PA XP for information on uninstalling the host software.
- If Command View XP is running, make sure that all users are logged off.
- Verify whether or not a Command Device has been created. See "[Creating a command device](#)" on page 22 for further instructions.

Make sure that you install PA XP in the following order:

- 1. Install PA XP on the management station.**
See "[Installing PA XP on the management station](#)" on page 14.
- 2. Install PA XP host agent on the host station.**
See "[Installing the host agent software](#)" on page 16.

Browser minimum requirements

For Windows XP, Windows 2000, and Windows Server 2003 (32-bit): Internet Explorer (IE) version 6.0 with Service Pack 1. Java plug-in 1.4.2 is required.



NOTE: If you want to run the web client on the management station, you must install the Java JRE plug-in separately on the management station. The supported JRE for Windows is available for download on the PA XP installation CD. If you prefer, to download the JRE for Windows from the Web, go to: <http://java.sun.com/products/archive/j2se/1.4.2/index.html>.



NOTE: The web browser must be configured to allow pop-ups in order for PA XP to function properly.

Firmware minimum requirements

Refer to the PA XP 2.1 Readme for required and recommended firmware requirements for each XP disk array model. The Readme is available at the root level of Performance Advisor XP CD 1.

You will need to meet the following hardware and operating system requirements for the management station. See the requirements specific to whether you run PA XP as a standalone product or with HP StorageWorks Command View XP.

Management station minimum requirements



NOTE: For optimal performance, HP recommends that you install PA XP alone on the management station.

PA XP version 2.1 is compatible with CV XP 2.0 or greater. All versions of PA XP can run as standalone products.

The PA XP management station must be a single-processor system.

- CD-ROM drive
- 800 MHz CPU (2 GHz is recommended)
- 1 GB RAM
- 2.5 GB free space on hard drive (NTFS)
- Ethernet LAN card connected to the network
- VGA graphics display with 256 colors (21-inch SVGA graphics display with 32-bit graphics interface is recommended)
- Windows 2000 (Service Pack 4), Windows Server 2003 Standard or Enterprise Edition (32-bit), or Windows XP Professional (SP2)

Host agent minimum requirements

Make sure you meet the following hardware and operating requirements for the host station(s), depending on your system.

Microsoft Windows 2000 and Windows Server 2003

- CD-ROM drive (required only for local installation of the host agent)
- 50 MB free space on hard drive (NTFS)
- Ethernet LAN card connected to the network
- A command device on the array (see ["Creating a command device"](#) on page 22)
- RAID Manager Library version 01.10.02 (included with PA XP)
- Windows 2000 (Service Pack 4), Windows Server 2003 Enterprise Edition (32-bit or 64-bit), or Windows Server 2003 Data Center Edition (64-bit)

HP-UX, Sun Solaris, IBM AIX, or Linux



NOTE: Linux is not supported in connection to XP256 arrays.

- CD-ROM drive (required only for local installation of the host agent)
- Sufficient disk space:
 - HP-UX (146 MB)
 - Sun Solaris (70 MB)
 - IBM AIX (72.5 MB)
 - Linux (192 MB)
- Ethernet LAN card connected to the network
- A command device on the array (see ["Creating a command device"](#) on page 22)
 - RAID Manager Library version 01.10.02 (included with PA XP)
- HP-UX 11.00 with the following patches:
 - PHCO_23791, 23963, 24148
 - PHKL_18543, 23226, 234409, 24826, 24943, 25188
 - PHNE_21731, 23456, 23833
 - PHSS_23440, 17535, 23566
- HP-UX 11.11 with the following PA-RISC patches:
 - PHCO_24777
 - PHKL_24253, 24254, 24256, 24551, 24751
 - PHNE_24035
- HP-UX 11.23
- HP-UX 11.23PI (32-bit and 64-bit)

NOTE: Remote deployment of the Host Agent is not supported for this operating system version.

- Sun Solaris 8 or 9
- IBM AIX 5.1 or 5.2
- Red Hat Enterprise Linux 3.0 (32-bit), Linux Kernel version 2.4.21
- Red Hat Advanced Server Linux 2.1 (32-bit), Linux Kernel version 2.4.9
- UnitedLinux 1.0/SLES8 (32-bit), Linux Kernel version 2.4.21

Installing Performance Advisor XP

Make sure you carefully comply with all pre-installation requirements prior to installing PA XP. If a previous version of PA XP is installed on the management station, see “[Updating Performance Advisor XP](#)” on page 24.



CAUTION: If you are installing PA XP and Command View XP 2.0 on the same management station, you must install Command View XP first and then install PA XP. This installation sequence does not apply if you are installing CV XP 2.1.

Installing PA XP on the management station



NOTE: Microsoft Windows 2000, Windows Server 2003 (32-bit), and Windows XP Professional are the only operating systems that the management station supports.

1. Log in as a user with administrative permissions.
2. Insert PA XP Installation CD 1 in the CD drive.
3. The installation wizard should start automatically. If not, run `PA_Server.exe`. A message appears describing important installation information.
4. Click **Yes** to continue.
5. Click **Next**.
6. After viewing the **System Requirements** dialog box, click **Next**.
7. Select “**I accept the terms of the license agreement**” if you agree to its terms, and click **Next**.
8. If Command View XP is not installed, the installation wizard asks for the management station’s DNS name or IP address. If you have multiple LAN cards configured in the management station, enter the IP address of your corporate LAN, and click **Next**.
9. In the **Setup Type** dialog box, click **Next** to accept the **Complete** selection (default).
10. In the **Choose Host Agent Platforms** dialog box, select the operating systems that the hosts will be running, and click **Next**.
11. Click **Install**. The setup program transfers program files to the destination folder and configures PA XP.
12. When prompted, insert PA XP Installation CD 2., and click **OK** to continue.
13. When installation is complete, click **Finish**.

Verifying installation of PA XP on the management station

To confirm major services

1. Select **Start > Settings > Control Panel**.
2. In the Control Panel, double-click **Administrative Tools**, and then double-click the **Services** icon. The **Services** dialog box appears.
3. If Performance Advisor XP has been installed, the status of HpssApache, HpssCVManagementServer, HpssPaSolid, HpssPaTomcat, and HpssSecurity should be in **Started** mode.
4. Close the **Services** dialog box.

To configure the web browser's web proxy server setting

If your web browser is configured to use a web proxy server, you must configure it to not use a proxy server for the IP address or DNS names of the PA XP management station.

1. In Internet Explorer, click **Tools > Internet Options > Connections > LAN Settings > Advanced**.
2. Add the management station's IP address and fully-qualified DNS name to the **Exceptions** box.
3. Click **OK** to save changes.

To verify successful installation



NOTE: The web browser must be configured to allow pop-ups in order for PA XP to function properly.

To verify successful installation, use the following procedure to start PA XP.

1. Open a web browser.
2. In the browser address line, enter your server name followed by `/pa`, for example,
`http(s)://[server name]/pa`

This process opens the PA XP default applet. If the DNS server cannot locate the management station, enter `http(s)://[IP address]/pa`



NOTE: If the web client does not have JRE 1.4.2 installed, a message appears that enables you to download the JRE from the PA XP management station.

Configuring Windows XP Professional Management Stations

NOTE: This section is only necessary if the PA XP management station is running Windows XP Professional.

You must configure Windows XP Professional's firewall settings to enable browser client access to the management station.

1. Open the Control Panel, and double-click **Windows Firewall**.
2. Click the **General** tab, and verify that the On (recommended) button is selected and the Don't allow exceptions box is not checked.
3. Click the **Exceptions** tab, and verify that the HTTP box is checked.

4. If you are using SSL Apache Server (HTTPS), click **Add Port**. If you are not using SSL Apache Server, skip to step 8.
5. Enter **HTTPS** in the Name box, enter **443** in the Port number box, and select the **TCP** button.
6. Click **OK** to save changes and close the window.
7. Verify that the HTTPS box is checked on the Exceptions tab.
8. Click **OK**.

Installing the host agent software

Prerequisites

The following prerequisites are necessary for installing PA XP host agents:

- One of the supported operating systems. See “[Host agent minimum requirements](#)” on page 13.
- You must have administrator access to the remote host.
- The PA XP management station must have a DNS name.
- A Linux host must be a rexec server (see page 17).
- Only one remote deployment tool may run at a given time.
- Review the online Host Software Installation checklist. To view the checklist, start the host agent deployment utility and click **Host Software Installation Checklist**. Click the link for the remote host’s operating system.



CAUTION: Do not deploy PA XP host agents and Command View SDM host agents to the same host system. They cannot coexist.

There are two ways to install PA XP host agents:

- Use the Host Agent Deployment tool.
- Download the host agent to the remote host from the **Support** tab in PA XP. Then, manually invoke the installation executable.



NOTE: If you plan to install the HP OpenView Storage Area Manager 3.2 host agent and PA XP host agent on the same host, you must install the Storage Area Manager host agent first and then install the PA XP host agent.

Please review the README file on the PA XP CD to find limitations regarding host agent installation.

Windows XP Professional management station configuration

If the management station is running Windows XP Professional and you want to remotely deploy the host agent software from the management station to applicable hosts, you must temporarily disable the Windows XP Professional firewall, deploy the host agent, and then re-enable the firewall.

NOTE: If you do not want to temporarily disable the Windows XP Professional firewall, you can install the host agent software from the product CD or download the host agent software from the Support tab as an alternative to remote deployment.

1. Open the Control Panel, and double-click **Windows Firewall**.
2. Click the **General** tab, select the **Off (not recommended)** button, and click the **OK** button to disable the Windows XP Professional firewall.
3. Deploy the host agent software as described in this section.
4. Open the Control Panel, and double-click **Windows Firewall**.
5. Click the **General** tab, select the **On (recommended)** button, and click the **OK** button to re-enable the Windows XP Professional firewall.

Preliminary host agent installation tasks

If you choose to use local install instead of remote deployment, you do not need to share the drive or set up services such as rexec and rsh on the hosts.

To prepare for installing on Windows platforms:

1. Be sure you have administrator access to the system.
2. Share the system drive (for example, C\$).

To prepare for installing on UNIX platforms (HP-UX, Solaris, and AIX):

1. Be sure you have root or superuser access to the system.
2. Be sure the telnet, rexec, rlogin, and FTP services are enabled. On these platforms, the services should be enabled by default. For more details, consult the configuration instructions to enable exec/rexec from the corresponding operating system manual.
3. Configure the root/superuser account to allow remote access via the exec/rexec and FTP services.

To prepare for installing on UNIX platforms (Linux):



NOTE: For Red Hat Enterprise Linux 3.0, see "To prepare for installing on UNIX platforms (Red Hat Enterprise Linux 3.0):" on page 18.

1. Be sure you have root or superuser access to the system.
2. Set up the rexec server on the Linux host. Verify that you have the rsh server package installed on the Linux host. For example, if you are using Red Hat Linux:
 - Enter `rpm -qa|grep rsh-ser*` at the command prompt.
 - If the command returns an entry, then go to [step 3](#).
 - If the command does not return an entry, install the package:
 - Insert the Red Hat CD in your CD-ROM.
 - Enter
`rpm -Uvh /mnt/cdrom/RedHat/RPMS/rsh-ser*.`

You may need to mount your CD-ROM if the OS cannot find the directory. The command `mount /dev/cdrom` should work.

3. Verify that the rexec service is started.
 - Enter `ntsysv` at command prompt.
 - Check the rexec and rsh services and click **OK**.
 - Restart the service by entering `service xinetd restart`.
 - Edit `/etc/pam.d/login`. Comment out (add “#” to the line):
`# auth required /lib/security/pam_securetty.so`
 - Edit `/etc/pam.d/rexec`. Comment out (add “#” to the line):
`# auth required /lib/security/pam_securetty.so`
 - Edit `/etc/pam.d/ftp`. Comment out (add “#” to the line):
`# auth required /lib/security/pam_listfile.so item=user sense=deny
file=/etc/ftpusers onerr=succeed`
 - Restart the service by entering `service xinetd restart`.
4. Configure the root/superuser account to allow remote access via the exec/rexec and FTP services.
 - Run the `/usr/sbin/ntsysv` command and enable `wu-ftp`.
 - Edit `/etc/pam.d/ftp` by commenting out the following line with #:
`auth required /lib/security/pam_listfile.so item=user sense=deny
file=/etc/ftpusers onerr=succeed`
 - Edit `/etc/ftpusers` by removing or commenting out the following line with #:
`root`
 - Edit `/etc/ftppass` as follows:
 - Change `allow-uid ftp` to `allow-uid ftp root`.
 - Change `allow-gid ftp` to `allow-gid ftp root`.
 - Run the `/sbin/service xinetd restart` command.

To prepare for installing on UNIX platforms (Red Hat Enterprise Linux 3.0):

1. Be sure you have root or superuser access to the system.
2. Install the Legacy Network Packages if the packages are not installed.
3. Edit `/etc/xinetd.d/<service>` (where `<service>` equals `rexec`, `vsftpd`, etc.) to enable the service by default.
4. Edit `/etc/securetty` by adding `rexec`, `rlogin`, `vsftpd`, and `telnet`.
5. Edit `/etc/pam.d/login`. Comment out (add “#” to the line):
`# auth required /lib/security/pam_securetty.so`
6. Edit `/etc/pam.d/rexec`. Comment out (add “#” to the line):
`# auth required /lib/security/pam_securetty.so`
7. Edit `/etc/vsftpd.ftpusers`. Comment out (add “#” to the line):
`# root`
8. Edit `/etc/vsftpd.user_list`. Comment out (add “#” to the line):
`# root`
9. Restart the service by entering `/sbin/service xinetd restart`.
10. Restart `vsftpd` by entering `/sbin/service vsftpd restart`. Make sure no other ftp services are running (for example, `ftpd`).

Installing host agents using the remote deployment tool



NOTE: If Command View XP 2.0 or greater is installed on the same management station as PA XP, the remote deployment tool installs both the Command View Path Connectivity and PA XP host agents on the target hosts.

To designate a single host:

1. Launch the remote deployment application by clicking **Start > Programs > HP StorageWorks > Host Agent Deployment Tools > Install Host Agent**.
2. Add a single host by entering the host name or IP address, administrator user name, and password.
3. Click **Add Host**.

To designate multiple hosts:

1. Launch the remote deployment application by clicking **Start > Programs > HP StorageWorks > Host Agent Deployment Tools > Install Host Agent**.
2. Click **Add Multiple Hosts**. A dialog box displays a table.
3. In the table, enter the host name or the host name or IP address, administrator user name, and password in their respective columns.
4. Click **Add All Hosts Now**.

To install the host agents:

1. The Managed Host list should now contain all the hosts previously added. From this list, click the hosts to which you want to deploy a host agent.
2. Re-authenticate the selected hosts by right-clicking and selecting **Re-authenticate** from the menu.
3. If Command View XP 2.0 (or greater) or Storage Area Manager 3.2 host agents are already installed on a host, enable the PA XP management station to access the host by selecting **Start > Programs > HP StorageWorks > Host Agent Deployment Tools > Update Host Agent Access**, and then selecting **Set IP** for each host and updating access for each host.
4. Click **Install on Selected Hosts**.

If host agent installation fails:

Host Agent installation may fail due to CPU consumption or network instability. Repeat the above procedure with fewer hosts selected until you have successfully installed the Host Agent on all hosts.

If you continue to have difficulty deploying the Host Agent, use the local installation method as an alternative.

To update the host agent access files using the remote deployment tool:

By default, only the management station used to install the host agent has access to the host agent. If you want another management station to access the host, update the host access list by completing the following procedure.

1. Launch the remote deployment application by clicking **Start > Programs > HP StorageWorks > Host Agent Deployment Tools > Update Host Agent Access File**.
2. From the Managed Host list, click the hosts you want to update.

If the Managed Host list does not contain the host you want to update, manually add the host from the Add Single Host box, click **Add Host**, and then click the host from the Managed Host list.

3. Select **Set IP** for each host under the Add-Access Mode column.
4. Select the hosts for which you want to update access, and click **Add Access to Selected Hosts**.

Installing host agents using the local method

To download the host agent file:

1. Access PA XP from your workstation.
2. Click the **Support** tab.
3. Navigate to the Software (Host) section. A list of supported host agents is provided.
4. Click the link for the desired host.
5. Download the Host Agent tar file (which contains all of the required software) to your computer.
6. FTP the Host Agent tar file to the `tmp` directory of the remote host.

To install the host agent locally:

1. Telnet to the remote host as root.
2. Navigate to the `tmp` directory.
3. Untar the host agent tar file by entering:

```
tar -xvf hostagent_<os_name>.tar
```
4. Run the installation script:

For UNIX run:

```
unix_local_install.sh
```

For Windows system running on IA-64 architecture, double-click `setup64.exe`. For other Windows host system architectures, double-click `setup.exe`.

5. For UNIX hosts, the installation script displays a series of prompts. Respond to these prompts as appropriate for your environment.

Verifying installation of PA XP on the host station

To verify that installation was successful, you should be able to start PA XP by using the following procedure:

1. Open your web browser.
2. In the browser address line, type your server name followed by `pa`, for example,
`http(s)://[server name]/pa`
3. Select the **Host ID** field in the Data Grid screen. Confirm that your host station appears in the drop-down list box. It may take several minutes to appear if your host agent has hundreds or thousands of logical devices. You may need to click the browser's **Refresh** button to update the screen with the latest list of host agents.

This process opens the PA XP default applet. If the DNS server cannot locate the management station, enter `http(s)://[IP address]/pa`.

Enabling the host agent to use SSL (HTTPS)

If you want to use secure sockets layer (SSL) protocol (HTTPS) on the host agent for file and data transfer, you must manually update the `paxp_service.properties` and `java.security` files on each host.



NOTE: This section applies to hosts only. Once SSL is enabled for hosts, you must enable SSL on the management station. Refer to the Configuring Apache and Java for SSL white paper (SSLWhitepaper.pdf) to enable SSL on the management station. This white paper is located at the root level of the installation CD.

Microsoft Windows

1. Use the Services application in the Windows Control Panel to stop the **HP OpenView SAM HostAgent** service.
2. In a text editor, open the file `C:\Program Files\Hewlett-Packard\sanmgr\hostagent\config\paxp_service.properties`.
3. In the file, change `Protocol=http` to `Protocol=https`.
4. Verify that the management station's host name is a fully qualified DNS name and not an IP Address. For example:
`ManagementStation.Hostname=managementstation.mycompany.com`
5. Save and close the file.
6. In a text editor, open the file `C:\Program Files\Hewlett-Packard\sanmgr\jre\lib\java.security`.
7. Find the `keystore.type` tags in the file and modify the entries so that they appear as follows:
`keystore.type=jks`
`#keystore.type=jceks`
8. Add the SSL provider by adding the following line to the provider section:
`security.provider.4=com.sun.net.ssl.internal.ssl.Provider`
9. Save and close the file.
10. Use the Services application in the Windows Control Panel to start the **HP OpenView SAM HostAgent** service.

UNIX

1. Stop the Host Agent process by entering:
`/opt/sanmgr/hostagent/sbin/HA_trigger stop`
2. In a text editor, open the file `/opt/sanmgr/hostagent/config/paxp_service.properties`.
3. In the file, change `Protocol=http` to `Protocol=https`.
4. Verify that the management station's host name is a fully qualified DNS name and not an IP Address. For example:
`ManagementStation.Hostname=managementstation.mycompany.com`
5. Save and close the file.



NOTE: Steps 6 through 8 are not necessary for AIX hosts.

6. In a text editor, open the file `/opt/sanmgr/jre/lib/security/java.security`.
7. Find the `keystore.type` tags in the file and modify the entries so that they appear as follows:
`keystore.type=jks`
`#keystore.type=jceks`
8. Add the SSL provider by adding the following line to the provider section:
`security.provider.4=com.sun.net.ssl.internal.ssl.Provider`
9. Save and close the file.
10. Start the Host Agent process by entering:
`/opt/sanmgr/hostagent/sbin/HA_trigger start`

Creating a command device

If you are currently running Raid Manager (Business Copy and Continuous Access), you will have command devices already in place that can be used for PA XP. If Raid Manager is not currently in use, you will need to create a command device. To do so, you can use either the Command View XP or Remote Control applications.

For XP12000 arrays, command devices must be configured as SLPRO to report full SLPR data.



NOTE: If you need further assistance, please contact your certified HP technical support representative.

Command View XP

1. Log in as administrator.
2. Connect to the desired array.
3. Click the **LUN Manager** button.
4. Highlight the volume to be used as a command device.



CAUTION: The volume designated as the command device is used only by the disk array and is blocked from the user. The command device can be any device that is accessible by the host.

Make sure that no data exists on a volume that you select as a command device. Any data that might reside on the volume that you select becomes unavailable to the host. Also, make sure no file system has been mounted and no data is stored there.

-
5. Follow the instructions provided for your array:
For XP256, XP48, and XP512: Click **Set/Release Cmd Dev**.
For XP128, XP1024, and XP12000: Right-click the highlighted volume and select **Command Device: OFF->ON**. Select **Yes** in the resulting dialogue box. Your command device is now set and indicated by "C" on the volume icon in the LUN column.



NOTE: The volume designated as the command device is used only by the disk array and is blocked from the user. The command device can be any device that is accessible by the host.

The command device uses 16 MB of space. The remaining volume space is reserved for RAID Manager and its utilities. You cannot use logical unit size expansion (LUSE) volumes as a command device. However, you can use custom volume size (CVS) devices as small as 36 MB.

To create a command device (remote control)

NOTE: This procedure is for XP256 arrays.

1. Connect to the desired array.
2. Go to the LUN Management application.
3. In the menu, select the offline mode.
4. Highlight the volume to be used as a command device.



CAUTION: Make sure that no data exists on a volume that you select as a command device. Any data that might reside on the volume that you select becomes unavailable to the host. Also, make sure no file system has been mounted and no data is stored there.

5. Click **Command Device**.
6. Click **OK**.

Stopping and starting services

The Performance Advisor XP services start automatically after installation and when the management station is restarted.

To stop services

Select **Start > Programs > HP StorageWorks > Stop services**.

To start services

Select **Start > Programs > HP StorageWorks > Start services**.

To restart services

Select **Start > Programs > HP StorageWorks > Restart services**.

Modifying or repairing Performance Advisor XP

Use the Modify option to install or uninstall components. Use the Repair option to reinstall PA XP.

1. Insert the PA XP CD in the CD drive.
2. Run `PA_Server.exe` located on the CD.
3. Click **Next**.
4. To modify PA XP:
 - a. Click **Modify**, and click **Next**.
 - b. Select the components you want to install and clear the components you want removed.
 - c. Click **Next**.
 - d. Select the operating systems that your hosts are running in the Choose Host Agent Platforms window, and click **Next**.
 - e. The setup program transfers and/or removes application files to and from the destination folder, and configures PA XP. When complete, click **Finish**.
5. To repair PA XP:
 - a. Click **Repair** and click **Next**.
 - b. The setup program transfers application files to the destination folder and configures PA XP. When complete, click **Finish**.

Updating Performance Advisor XP

This section describes the procedure to upgrade from a previous version of PA XP to PA XP 2.1. If a version of PA XP lower than 1.7B is installed on the management station and you want to retain your current data, you must upgrade the management station to PA XP 1.7B, and then upgrade the management station to PA XP 2.1.

If the PA XP host agent is currently installed on any hosts, uninstall it prior to installing the new version of the host agent. Refer to the installation guide for your previous version of PA XP for information on uninstalling the host agent software.

See “Getting started” on page 11 for other important information before continuing with the update procedure.

1. Log in to the PA XP management station with administrative permissions.
2. Insert PA XP Installation CD 1 in the CD drive.
3. The installation wizard starts. If not, run `PA_Server.exe`. A message appears that describes important installation information.
4. Click **Yes** to continue.
5. Click **Next**.
6. When prompted, insert PA XP Installation CD 2, and click **OK** to continue.
7. When installation is complete, click **Finish**.

Migrating to another management station

If you are moving from an existing management station to a new management station, use the Backup Utility to migrate PA XP data, settings, and preferences. You can use this tool to preserve your data and configuration preferences when upgrading hardware by saving your existing settings and then restoring them on the new management station.

To use the Backup Utility, both management stations must have the same version of PA XP installed. This tool is not compatible with older versions of PA XP.

Migrating your data using the Backup Utility:

1. Click **Start > Programs > HP StorageWorks > Backup Utility**. The Backup Utility window is displayed.
2. Complete the backup process:
 - a. Click **Backup**. The **Open File** dialog box is displayed.
 - b. Choose a location, such as a network drive or shared file system, to save the backup file and click **Open**. A confirmation dialog box is displayed.
 - c. Click **Yes** to proceed. The **Backup Progress** status window is displayed.
 - d. When the backup process is completed, the **Finished** button becomes available. Click **Finished**. A confirmation message is displayed.
 - e. Click **OK**.
3. If necessary, install PA XP 2.1 or later on the new management station.

4. Complete the restore process:
 - a. Click **Restore**. The **Open File** dialog box is displayed.
 - b. Navigate to where the backup file is located and click **Open**. A confirmation dialog box is displayed.
 - c. Click **Yes** to proceed. The **Restore Progress** status window is displayed.
 - d. When the restore process is completed, the **Finished** button becomes available. Click **Finished**. A confirmation message is displayed.
 - e. Click **OK**.

Saving or restoring your data from the Windows Command Line:

- To save your files, enter `%HPSS_HOME%\bin\backuputility -backup <target-path>`, where *target-path* is the location, such as a network drive or shared file system, where you want to save the backup file.
- To restore your files, enter `%HPSS_HOME%\bin\backuputility -restore <target-path>`, where *target-path* is the location where you want to restore the file.

3 Using Performance Advisor XP

How to use Performance Advisor XP

1. To begin viewing data collected by the PA XP software, in the address line of a web browser, type `http(s)://[server name]/pa`.
2. Enter the password for PA XP. For the administrator, the user name is `administrator` and the password is `administrator`. For a general user, the user name is `user` and the password is `user`.



NOTE: Refer to the PA XP user guide or the online Help for information about changing the password. The default user name and password used for HP StorageWorks Performance Advisor XP software are known by HP service personnel. The information is not available on the Web.

3. Click the **Configuration** tab to open the Data Collection Configuration screen. To begin collecting data, select a command device on the host that you want to use. Perform data collection on only one host per array. For more information, see the user guide or the online Help topic for with the Data Collection Configuration screen.



NOTE: Please follow a general rule of one minute per 1,000 LDEVs for the management station (computer) to keep up with collection. Remember that PA XP collects performance data on all LDEVs in the array. It is not limited to the number of LDEVs that the host station is mapped to use. **Setting the collection rate too narrow hampers the management station by diminishing its responsiveness.**

4 Uninstalling Performance Advisor XP

To uninstall PA XP you must first uninstall the host agent from each host, then uninstall PA XP from the management station.

Uninstalling the PA XP host agent

There are two ways to uninstall the PA XP host agent:

- Use the Host Agent Deployment tool
- Use the local uninstall method

Uninstalling the host agents using the remote deployment tool



NOTE: The remote deployment tool uninstalls Command View XP Path Connectivity and Performance Advisor XP host agents if both are installed on the same host.



NOTE: If the Storage Area Manager 3.2 host agent is also installed on the host, uninstall the PA XP host agent prior to uninstalling the Storage Area Manager host agent. Uninstalling the Storage Area Manager host agent first may result in uninstallation of some PA XP components.

1. Launch the remote deployment application by clicking **Start > Programs > HP StorageWorks > Host Agent Deployment Tools > Uninstall Host Agent**.
2. Click the hosts you want to remove from the Managed Host list.

If the Managed Host list does not contain the host agent you want to remove, manually add the host from the Add Single Host box, click **Add Host**, and then click the host from the Managed Host list.

3. Re-authenticate the selected hosts by right-clicking and selecting **Re-authenticate** from the menu.
4. Click **Uninstall from Selected Hosts**.

If host agent uninstallation fails:

Host Agent uninstallation may fail due to CPU consumption or network instability. Repeat the above procedure with fewer hosts selected until you have successfully uninstalled the Host Agent from all hosts.

If you continue to have difficulty using the Remote Deployment tool to uninstall the Host Agent, use the local installation method as an alternative.

Uninstalling the host agents using the local uninstall method



NOTE: If the Command View XP Path Connectivity and Performance Advisor XP host agents are installed on the same host, this procedure will have the following behavior:

For Unix hosts, the local uninstall script prompts you to choose which host agent to uninstall.

For Windows hosts, the local uninstall procedure removes both host agents on the host.



NOTE: If the Storage Area Manger 3.2 host agent is also installed on the host, uninstall the PA XP host agent prior to uninstalling the Storage Area Manager host agent. Uninstalling the Storage Area Manager host agent first may result in uninstallation of some PA XP components.

To uninstall from Windows hosts:

1. At the host, select **Start > Settings > Control Panel**.
2. Double-click **Add/Remove Programs**.
3. Select **HP StorageWorks XP 2.1 Host Agent Installer**.
4. Click **Change**, and follow the online instructions to uninstall the Command View XP Path Connectivity host agent.

To uninstall from hosts other than Windows:

1. Telnet to the remote host as root.
 2. Navigate to the `tmp` directory.
 3. Untar the host agent tar file by entering:

```
tar -xvf hostagent_<os_name>.tar
```
 4. Run the uninstall script by entering:

```
unix_local_uninstall.sh
```
-

Uninstalling the PA XP management station

Complete the following instructions only if you want to uninstall PA XP.



NOTE: If you are uninstalling PA XP and Command View XP from the same management station, you must uninstall PA XP first and then uninstall Command View XP.

1. From the Control Panel in Windows, click **Add/Remove Programs**.
2. Click **HP StorageWorks Performance Advisor XP**.
3. Click **Change**.
4. Click **Next**.
5. Select **Remove**, and click **Next**.
6. Click **Remove**.
7. Click **Finish**. A message appears indicating that uninstallation was successful.
8. Reboot the management station to ensure the PA XP services are completely removed.

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