

HP P6000 Control Panel User Guide

Abstract

This document describes the use of the HP P6000 Control Panel and is intended for users and administrators involved in the installation, operation and management of HP P6000 EVA storage systems.



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1 Introduction

What's new

HP P6000 Control Panel version 2.8 includes the following new or updated features compared to version 2.7.

- **HP P6000 Command View support.** HP P6000 Control Panel adds support for version 10.3 of array-based HP P6000 Command View.

2 Working with a Control Panel

Control Panel features

The HP P6000 Control Panel is primarily intended for use by storage system administrators and service personnel. When you log in as a storage administrator, the Administrator options, Service options, and User options are available. When you log in as a user, only the User options are available.

The following menu options are available in the HP P6000 Control Panel.

Administrator options

These options allow storage administrators to view and change storage system settings.

- Configure Administrator login options
- Configure controller device ports
- Configure controller host ports
- Configure network options
- Power down or restart system
- Uninitialize system
- Update management module software
- View detailed system information

Service options

These options allow storage administrators and service personnel to view detailed service logs.

- View last controller fault
- View message logs

User options

These options allow users to view storage system settings and change the user login password.

- Configure User login options
- Launch HP P6000 Command View
- View network information
- View system information

Interface quick tour

1. Management options pane
2. System status pane
3. Content pane
4. Session pane



Management options pane (1). The management options pane displays [administrator options](#), [service options](#), and [user options](#).

System status pane (2). The system status pane displays a summary of [operational states](#) for the storage system and its controllers.

Content pane (3). The content pane displays information and actions that you can perform for the option that is selected.

Session pane (4). The session pane displays the name of the HP P6000 EVA storage system, the user that is logged in, a link to online help, and the logoff button.

Accessing a Control Panel

Every HP P6000 EVA storage system with array-based management includes Control Panel functionality. To access the Control Panel for a given HP P6000 EVA storage system, you must know the IP address of the system.

Procedure

1. Open a browser.
2. Browse to `https://HP P6000 EVA storage system IP address:2373`. The HP P6000 Control Panel login window appears.
Example: `https://21.44.63.101:2373`
3. Log in as a storage user or storage administrator. (User name `user` or `admin` and [password](#). The Control Panel GUI opens.

Capturing Control Panel data

You can capture data from an HP P6000 Control Panel window and paste it into other applications.

Considerations

- You must be logged in as a storage administrator.

Procedure

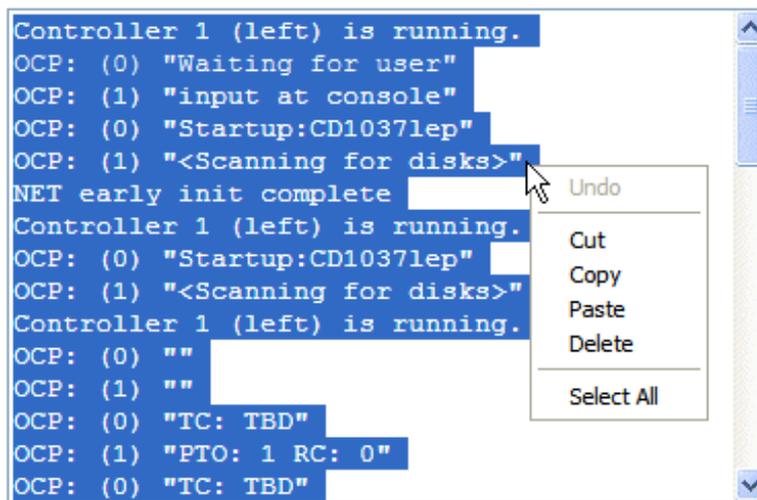
1. Navigate to the desired window.
2. Right-click anywhere within a data text box. A menu opens.
3. Choose **Select All**. The data in the text box is highlighted.
4. Right-click again and select **Copy**. The data is copied.

5. Open a text file and paste the data.

Example

Selecting text on the View Message Logs page.

Controller 1 message log:



Configuring access to HP P6000 Command View (filter list)

You can control which servers are allowed to access the array-based instance of HP P6000 Command View on this storage system. This is done by creating and enabling a filter list of allowed HP P6000 Command View client IP addresses.

Considerations

- You must be logged in as an administrator.
- The HP P6000 Command View client filter list can be enabled and disabled from the Control Panel.
- Proxy server configuration. If the client computer is using a proxy server to access array-based HP P6000 Command View, the proxy server settings in the Control Panel must be configured correctly. Otherwise, the detected client IP address may not match the IP address in the list.
- DNS resolution. If the DNS server settings are not configured correctly in the HP P6000 Control Panel, a host name that is added to the client filter list may not be resolved to the correct IP address.
- If access to the HP P6000 Control Panel is not possible, the HP P6000 Command View client filter list can be disabled by using the reset button on the HP P6000 management module. See HP P6000 [management module](#).
- Restrictions apply. See [Management module IP addresses](#).

To view or change the access list:

1. Select **Administrator Options > Configure Network Options**. The Detailed Network Options page appears.
2. Click **Configure client filter**.
3. Follow the instructions on the page.

Confirming system alerts

In rare cases when a storage system is not in a normal state and requires intervention, an alert message can appear in the Control Panel. Review the message and select an action.

Considerations

- You must be logged in as a storage administrator to see and act on the alert messages.

Procedure

1. Review the message and alternative actions.
2. Click **Yes** or **No** as appropriate.

Example

Confirm System Action

Confirm the system action described in the details below.

Details

A normal storage system has multiple quorum drives containing identical metadata that defines the structure and identity of the system. Your system has detected quorum disks with multiple, *different* system structures. You must choose one structure to continue using your system.

Click No to cease system operation, and to allow you to replace quorum drives with consistent system structures.

Click Yes to select a single structure from the multiple system structures detected, and to continue operation with degraded quorum metadata.

Yes

No

Connecting to the management module (initial setup)

This topic addresses initially setting the HP P6000 EVA storage system IP address and connecting to the HP P6000 [management module](#). Once set up and connected, you can browse to the HP P6000 Control Panel. See also [Reestablishing the storage system IP address](#).

Considerations

- You cannot save changes in the HP P6000 management module configuration if the storage system is not running or has not been initialized. See [Initialization and uninitialization](#).
- You can connect to the HP P6000 management module through a private or public network. See [Private and public networks](#).

① **IMPORTANT:** HP recommends that you connect the HP P6000 management module through a private network, or configure it behind a firewall or proxy server.

- You will need to access the back of the storage system. The LAN cable to the HP P6000 management module and the reset button are on the back of the controller enclosure. The LAN connection on the HP P6000 management module is MDI-X compliant and supports straight-through or crossover Ethernet cables (Cat 5e or better).
- You must be logged in as a storage administrator to complete the procedure.
- Restrictions apply. See [Management module IP addresses](#).

The following procedures assume that the HP P6000 EVA storage system has already been initialized using HP P6000 SmartStart or HP P6000 Command View.

Procedure when on a public network (initial setup)

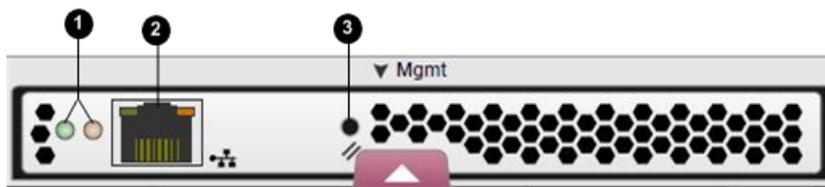
Use this procedure when the HP P6000 EVA management module is connected through a public network.

- ❗ **IMPORTANT:** When your LAN is part of a public network, HP recommends that you temporarily disconnect from the public network while performing this procedure.

1. If currently connected, disconnect the public network LAN cable from the back of the HP P6000 management module in the controller enclosure.
2. Press and hold the recessed **Reset** button for 4 to 5 seconds, then release it. This sets an IP address of 192.168.0.1/24 (IPv4) and fd50:f2eb:a8a::7/48 (IPv6) in private address space. The green indicator on the top left corner of the LAN connector (Ethernet jack) will flash during the reset, which may take up to 2 minutes. When the reset operation is completed, the green indicator light will turn solid green.

- ❗ **IMPORTANT:** At initial setup, you cannot browse to the HP P6000 Control Panel until you perform this step.

1. LEDs 2. LAN connector 3. Reset button



3. Do one of the following:
 - Temporarily connect a LAN cable from a private network to the HP P6000 management module.
 - Temporarily connect a laptop computer directly to the HP P6000 management module using a LAN patch cable.
4. Browse to <https://192.168.0.1:2373> (IPv4) or <https://fd50:f2eb:a8a::7/48> (IPv6) and log in as a storage administrator. The default user name is **admin**. No **password** is required during the initial setup. The HP P6000 Control Panel GUI appears.

- ❗ **IMPORTANT:** HP recommends that you change or delete the default IPv4 and IPv6 addresses to avoid duplicate address detection issues in your network.

HP recommends that you change the default passwords. If you change the password for the storage administrator or storage user account for the HP P6000 Control Panel, be sure to record the new passwords since they cannot be cleared without resetting the HP P6000 management module.

5. Select **Administrator Options > Configure Network Options**.
6. Enter a new IP address and other network settings that apply.

- ❗ **IMPORTANT:** Restrictions apply. See [Management module IP addresses](#).

7. Click **Save Changes**. The IP address changes immediately, causing you to lose connectivity to the HP P6000 Control Panel.

The new IP address is stored and remains in effect, even when the storage system is later shut down or restarted.

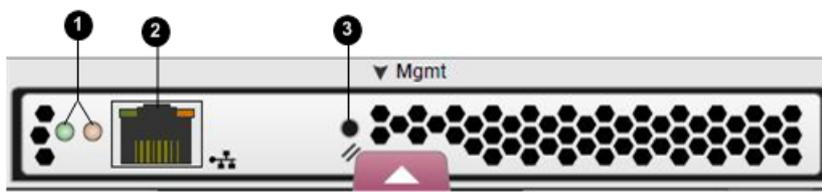
-
- ① **IMPORTANT:** The new IP address will be lost if the storage system is later uninitialized or the HP P6000 management module is reset.
 - 8. Remove the LAN cable to the private network or laptop and reconnect the cable to the public network.
 - 9. From a computer on the public network, browse to `https://new IP address:2373` and log in. The HP P6000 Control Panel GUI appears.

Procedure when on a private network (initial setup)

Use this procedure when the HP P6000 management module is connected through a private network.

1. Press and hold the recessed **Reset** button for 4 to 5 seconds, then release it. This sets an IP address of 192.168.0.1/24 (IPv4) and fd50:f2eb:a8a::7/48 (IPv6) in private address space. The green indicator on the top left corner of the LAN connector (Ethernet jack) will flash during the reset, which may take up to 2 minutes. When the reset operation is completed, the green indicator light will turn solid green.
-
- ① **IMPORTANT:** At initial setup, you cannot browse to the HP P6000 Control Panel until you perform this step.

1. LEDs 2. LAN connector 3. Reset button



2. Browse to `https://192.168.0.1:2373` (IPv4) or `https://fd50:f2eb:a8a::7/48` (IPv6) and log in as a storage administrator. The default user name is **admin**. No password is required during the initial setup. The HP P6000 Control Panel GUI appears.
-
- ① **IMPORTANT:** HP recommends that you change or delete the default IPv4 and IPv6 addresses to avoid duplicate address detection issues in your network.
HP recommends that you change the default passwords.
If you change the password for the storage administrator or storage user account for the HP P6000 Control Panel, be sure to record the new passwords since they cannot be cleared without resetting the HP P6000 management module.
-
3. Select **Administrator Options > Configure Network Options**.
 4. Enter a new IP address and other network settings that apply.
-
- ① **IMPORTANT:** Restrictions apply. See [Management module IP addresses](#).
-
5. Click **Save Changes**. The IP address changes immediately, causing you to lose connectivity to the Control Panel.
The new IP address is stored and remains in effect, even when the storage system is later shut down or restarted.
-
- ① **IMPORTANT:** The new IP address will be lost if the storage system is later uninitialized or the HP P6000 management module is reset.

6. From a computer on the private network, browse to `https://new IP address:2373` and log in. The HP P6000 Control Panel GUI appears.

Enabling disk device ports

When the storage system detects certain device errors on a [loop pair](#), the device ports are automatically disabled and the [operational state](#) is changed.

Considerations

- You must be logged in as a storage administrator.

Procedure

To locate disabled ports and enable them:

1. Select **Administrator Options > Configure Controller Device Ports**
2. Select a controller and review the operational state of each loop pair.
3. If the Enable Port Pair button is displayed, correct the problem (outside of this application).
4. Return to this application and click the **Enable Port Pair** button.

Locating the storage system WWN label

1. Open the storage system door and remove the bezel from the controller enclosure.
2. The WWN label is below the serial number label on the left side.



3. Replace the bezel.

Reestablishing the storage system IP address

This topic addresses the rare cases, such as following an [uninitialization](#) or the replacement of certain components, when the HP P6000 Control Panel may become unavailable. If browsing to the HP P6000 Control Panel fails after these events, you may have to reestablish the IP address. See also [Connecting to the HP P6000 management module \(initial setup\)](#).

Considerations

- You cannot save changes in the HP P6000 management module configuration if the HP P6000 EVA storage system is not running or has not been initialized. See [Initialization and uninitialization](#).
 - You can connect to the HP P6000 management module through a private or public network. See [Private and public networks](#).
-
- ① **IMPORTANT:** HP recommends that you connect the HP P6000 management module through a private network, or configure it behind a firewall or proxy server.
-
- The following procedures include a step to reset the HP P6000 management module.

❗ **IMPORTANT:** HP recommends that you save logs files that might be needed for troubleshooting before performing the reset step. Log files can be saved via the Capture System Information option on the Server Options page in HP P6000 Command View.

- You will need to access the back of the storage system. The LAN cable to the HP P6000 management module and the reset button are on the back of the controller enclosure. The LAN connection on the HP P6000 management module is MDI-X compliant and supports straight-through or crossover Ethernet cables (Cat 5e or better).
- You must be logged in as a storage administrator to complete the procedure.

The following procedures assume that the HP P6000 EVA storage system has already been initialized using HP P6000 SmartStart or HP P6000 Command View.

Procedure when on a public network (reestablishing the IP address)

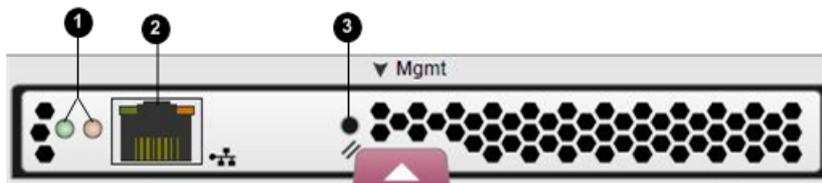
Use this procedure when the HP P6000 management module is connected through a public network.

❗ **IMPORTANT:** When your LAN is part of a public network, HP recommends that you temporarily disconnect from the public network while performing this procedure.

1. If currently connected, disconnect the public network LAN cable from the back of the HP P6000 management module in the controller enclosure.
 2. Press and hold the recessed **Reset** button for 4 to 5 seconds, then release it. This sets an IP address of 192.168.0.1/24 (IPv4) and fd50:f2eb:a8a::7/48 (IPv6) in private address space. The green indicator on the top left corner of the LAN connector (Ethernet jack) will flash during the reset, which may take up to 2 minutes. When the reset operation is completed, the green indicator light will turn solid green.
-

❗ **IMPORTANT:** If the IP address saved in memory has been lost, you cannot browse to the HP P6000 Control Panel until you perform this step.

1. LEDs 2. LAN connector 3. Reset button



3. Do one of the following:
 - Temporarily connect a LAN cable from a private network to the HP P6000 management module.
 - Temporarily connect a laptop computer directly to the HP P6000 management module using a LAN patch cable.
4. Browse to <https://192.168.0.1:2373> (IPv4) or <https://fd50:f2eb:a8a::7/48> (IPv6) and log in as a storage administrator. The default user name is **admin** and **password**. The Control Panel GUI appears.

-
- ❗ **IMPORTANT:** HP recommends that you change or delete the default IPv4 and IPv6 addresses to avoid duplicate address detection issues in your network.

HP recommends that you change the default passwords.

If you change the password for the storage administrator or storage user account for the HP P6000 Control Panel, be sure to record the new passwords since they cannot be cleared without resetting the HP P6000 management module.

5. Select **Administrator Options > Configure Network Options**.
 6. Enter a new IP address and other network settings that apply.
-

- ❗ **IMPORTANT:** Restrictions apply. See [Management module IP addresses](#).
-

7. Click **Save Changes**. The IP address changes immediately, causing you to lose connectivity to the HP P6000 Control Panel.

The new IP address is stored and remains in effect, even when the storage system is shut down or restarted.

- ❗ **IMPORTANT:** The new IP address will be lost if the storage system is uninitialized or the HP P6000 management module is reset.
-

8. Remove the LAN cable to the private network or laptop and reconnect the cable to the public network.
9. From a computer on the public network, browse to `https://new IP address:2373` and log in. The HP P6000 Control Panel GUI appears.

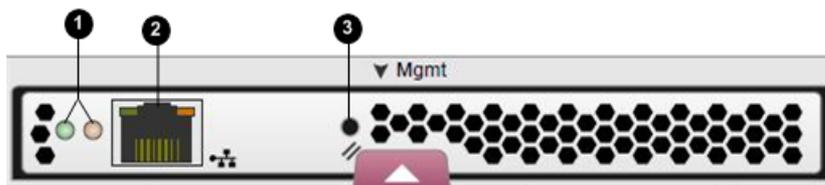
Procedure when on a private network (reestablishing the IP address)

Use this procedure when the HP P6000 management module is connected through a private network.

1. Press and hold the recessed **Reset** button for 4 to 5 seconds, then release it. This sets an IP address of 192.168.0.1/24 (IPv4) and fd50:f2eb:a8a::7/48 (IPv6) in private address space. The green indicator on the top left corner of the LAN connector (Ethernet jack) will flash during the reset, which may take up to 2 minutes. When the reset operation is completed, the green indicator light will turn solid green.
-

- ❗ **IMPORTANT:** If the IP address saved in memory has been lost, you cannot browse to the HP P6000 Control Panel until you perform this step.
-

1. LEDs 2. LAN connector 3. Reset button



2. Browse to `https://192.168.0.1:2373` (IPv4) or `https://fd50:f2eb:a8a::7/48` (IPv6) and log in as a storage administrator. The user name is `admin` and `password`. The HP P6000 Control Panel GUI appears.
 3. Select **Administrator Options > Configure Network Options**.
 4. Enter a new IP address and other network settings that apply.
-

- ❗ **IMPORTANT:** Restrictions apply. See [Management module IP addresses](#).
-

5. Click **Save Changes**. The IP address changes immediately, causing you to lose connectivity to the Control Panel.

The new IP address is stored and remains in effect, even when the storage system is shut down or restarted.

-
- ① **IMPORTANT:** The new IP address will be lost if the storage system is later uninitialized or the HP P6000 management module is reset.
-

6. From a computer on the private network, browse to `https://new IP address:2373` and log in. The Control Panel GUI appears.

Service option pages

HP P6000 Control Panel service option pages include:

- View last controller fault. Review the events associated with a controller's last fault.
- View message logs. Review the log of Control Panel events.

-
- △ **CAUTION:** These HP P6000 Control Panel pages provide service information for storage system administrators and HP service engineers only. Performing service actions without fully understanding the information on these pages can lead to data loss or corruption.
-

Resetting the storage system World Wide Name

Each HP P6000 EVA storage system is assigned a unique WWN when it is manufactured. In rare cases, such as after [uninitialization](#) or replacement of certain components, you may need to reenter its WWN and checksum.

Considerations

- You must be logged in as a storage administrator.
- To perform the procedure, you will need to locate the WWN label on the front of the storage system. See [Locating the WWN label](#).
- Licenses for storage system features are tied to the storage system WWN.

-
- △ **CAUTION:** Failure to enter the correct WWN can result in a loss of licensed features.
-

Procedure

To reset the World Wide Name:

1. Locate and record the WWN and checksum.
2. Select **Administrator Options > View Detailed System Information > Set WWID**
3. Follow the instructions on the page.

Setting the automatic loop recovery policy

A policy controls whether the storage system automatically attempts to recover from [loop pair](#) errors. The policy can be enabled or disabled.

Considerations

- You must be logged in as a storage administrator.

Procedure

To set or view the policy:

1. Select **Administrator Options > Configure Controller Device Ports**.
2. Select a controller. The policy appears in the Automatic Loop Recovery box.
3. If necessary, change the policy and click the **Save Changes** button.

Setting controller power on behavior

The controller power on behavior is set by the Controller Power Option. By default, the option is disabled and the controllers are not automatically started when the HP P6000 management module is powered on or restarted. When the option is enabled, the controllers are automatically started when the management module is powered on or restarted. You can view or change the behavior.

Considerations

- You must be logged in as a storage administrator.

Procedure

To view or change the setting:

1. Select **Administrator Options > Power Down or Restart System**.
2. The setting appears in the Controller Power Option box.
3. If necessary, change the setting and click **Set**.

Procedure for a storage system shut down

After setting this feature, if you shut down the storage system, perform the following steps.

1. Use HP P6000 Command View to shut down the controllers and disk enclosures.
2. Turn off power from the rack power distribution unit.
3. Turn on power from the rack power distribution unit. After the management module starts, the controllers will automatically start.

Setting host ports topology

The topology for the storage system's host ports can be set to Fabric or Direct. Fabric refers to topologies in which hosts are connected to the HP P6000 EVA storage system via switches. Direct refers to topologies in which hosts are directly connected to the HP P6000 EVA storage system without switches. The protocol used with each topology can be Fibre Channel or iSCSI.

Considerations

- You must be logged in as a storage administrator.
- Avoid an incorrect topology setting.

⚠ CAUTION: An incorrect topology setting causes the HP P6000 EVA storage system to lose communication with the storage area network.

Procedure

To view or change the setting:

1. Select **Administrator Options > Configure Controller Host Ports**.
2. Select the controller. The setting appears in the Topology box.
3. If necessary, change the topology and click **Save Changes**.

Setting the storage system password

Considerations

- You must be logged in as a storage administrator.
- Storage system passwords must comply with format guidelines. See [Passwords](#).
- Synchronizing the password with server-based HP P6000 Command View

❗ IMPORTANT: If the storage system is managed by an instance of server-based HP P6000 Command View, HP strongly recommends that you store or update the password in HP P6000 Command View immediately after creating or changing the password on the storage system.

In HP P6000 Command View, the relevant online help procedures are: *Accessing password protected storage systems*, *Enabling management of a password-protected storage system*, and *Updating storage system passwords*.

Procedure

1. Select **Administrator Options > Configure Administrator login options**. The Administrator Login Options page opens.
2. Follow the instructions on the page.

Troubleshooting

Login error (ABM client filter related)

Problem

The login to array-based HP P6000 Command View indicates *Access Denied*.

Explanation / resolution

The HP P6000 Command View client filter in the Control Panel is enabled and access has been denied.

1. Review the client filter list and do one of the following:
 - If the denied computer is not on the client list and you want to allow access, add the client computer's IP address to the list.
 - If you want to allow access for all computers, disable the client filter.

See [Configuring access to HP P6000 Command View \(filter list\)](#).

2. If the denied computer is on the list, review the following:
 - a. Proxy server configuration. If the client computer is using a proxy server to access array-based HP P6000 Command View, the proxy server settings must be configured correctly. Otherwise, the detected client IP address may not match the IP address in the list.
 - b. DNS resolution issue. If the DNS server settings are not configured correctly in the HP P6000 Control Panel, a host name that is added to the client filter list may not be resolved to the correct IP address.

Operation failed error (upgrade related)

Problem

The login to HP P6000 Control Panel indicates *Operation Failed!*, *Request did not contain a required security token or token was invalid. Access to server denied*.

Explanation / resolution

After upgrading array-based HP P6000 Command View on the management module, a browser's cache may contain an invalid security certificate. HP recommends clearing a browser's cache then logging in again.

- In Internet Explorer select **Tools > Internet Options > Browsing history > Delete > Temporary Internet files > Delete files**.
- In Mozilla Firefox select **Tools > Clear Recent History > Everything > Details > Cache > Clear Now**.

Updating management module software

HP updates for HP P6000 management module software include HP P6000 Control Panel functionality.

General considerations

- You must first obtain the new HP P6000 management module software file from HP.
- You must be logged in as a storage administrator.
- HP recommends that you read any notes on page 2 of the installation wizard before you confirm the installation.
- If both the controller software and the HP P6000 management module software are to be updated, complete the controller software update first, then update the management module software.
- After upgrading, you may need to clear the cache of any browser that is used to access the HP P6000 Control Panel. See [Logon access denied to Control Panel](#).

Internal IP address considerations when updating

- The [management module IP addresses](#) which are used internally by the storage system can vary with versions of HP P6000 management module software. If the new software uses different internal IP addresses than the previous version, you must reboot the management module after the update.

Procedure

1. Select **Administrator Options > Update management module software**. The Update Management Module software page opens.
2. Follow the instructions on the page.

Unbypassing disk drives

When the storage system detects certain errors, a physical disk's ports on a [loop pair](#) are disabled for I/O (*bypassed*).

Considerations

- You must be logged in as a storage administrator.

Procedure

1. Select **Administrator Options > Configure Controller Device Ports**.
2. Select a controller.
3. Click **Unbypass All**.

Uninitializing a storage system

The HP P6000 Control Panel allows storage administrators to uninitialize HP P6000 EVA storage systems. Storage administrators can also use HP P6000 Command View. See also [Initialization and uninitialization](#).

Considerations

- You must be logged in as a storage administrator.

⚠ CAUTION: Uninitialization deletes all user data and configuration information on the storage system. If you uninitialize a storage system, you must re-initialize it before it can be used for storage again.

Procedure

1. Select **Administrator Options > Uninitialize Storage System**.
2. Follow the instructions on the page.

3 Storage system concepts

Controllers

HP P6000 EVA storage systems contain a redundant pair of disk array controllers that manage storage system operation and serve as the physical interface to the SAN. All host I/O and management commands from HP P6000 Command View are processed by the controller pair. More information is available in HP P6000 EVA user guides. See [related information](#).

Controller type identification

HP P6000 controller identification format is **HSVxxx**. The following table shows the relationship between controller types and storage system models.

Controller Hardware Type	Controller Software Type	HP P6000 EVA Models
HSV100	VCS	EVA 3000
HSV110	VCS	EVA 5000
HSV200	XCS	EVA 4000, EVA 4100, EVA 6000 and EVA 6100
HSV210	XCS	EVA 8000 and EVA 8100
HSV300	XCS	EVA 4400
HSV300-S	XCS	EVA 4400 with embedded Fibre Channel switch
HSV340	XCS	P6300 EVA, P6350 EVA
HSV360	XCS	P6500 EVA, P6550 EVA
HSV400	XCS	EVA 6400
HSV450	XCS	EVA 8400

Controller power-on behavior

When the management module on an HP P6000 EVA storage system is powered on or restarted, the default behavior is to not power on the controllers. This behavior is set with the Controller Power Option and can be changed so that the controllers are automatically powered on. See [Setting controller power on behavior](#). The default, the Controller Power Option is disabled.

When the Controller Power Option is disabled, and power to the storage system is turned on from the rack power distribution unit, only the disk enclosures boot up. When the option is enabled, the controllers also boot up, making the entire storage system ready for use.

Management module considerations

- When the Controller Power Option is enabled, and the management module is removed from its slot and reinserted to reset power or restart the management module from the Control Panel, only the controllers automatically boot up after a full shutdown. In this case, you must ensure that the disk enclosures are powered on first; otherwise, the controller boot up process may be interrupted.
- When the reset button on an HP P6000 management module is pressed, the Controller Power Option is reset to its default setting of *disabled*.
- Before performing a hot swap of an HP P6000 management module, ensure that the controllers are powered on. Hot swap of a management module can only occur when the controllers are powered on and accessible by the HP P6000 Control Panel.

Disk device ports

Disk *device ports* are the HP P6000 EVA storage system ports that logically and physically connect the internal controllers with the physical disk enclosures. Device port connectors and cables are located on the back of each controller. More information is available in HP P6000 user guides. See [related information](#).

Disk device loop pairs

HP P6000 disk device port connections include two loops, *loop A* and *loop B*. Every physical disk that is inserted into a drive enclosure is automatically connected to both loops. The loops operate independently during normal operation, but provide redundant connections in case one fails. More information is available in HP P6000 user guides. See [related information](#).

Host ports

Host ports are the HP P6000 EVA storage system ports that logically and physically connect a storage system with external hosts (servers). Host port connectors and cables are located on the back of each controller. More information is available in HP P6000 user guides. See [related information](#).

HP P6000 Command View software suite

The *HP P6000 Command View software suite* includes the following:

- **HP P6000 Command View software** — For managing HP P6000 EVA storage systems, provisioning of storage to servers, and instant replication of storage volumes.
- **HP P6000 Performance Advisor software** — Monitors HP P6000 storage systems and provides metrics that help analyze performance.
- **HP Management Integration Framework software** — Provides additional storage system security and access management. See [HP Management Integration Framework software](#).
- **HP P6000 SmartStart** — Provides a DVD-based wizard that helps you install HP P6000 Command View. The wizard also helps you configure, provision and mount storage volumes on Windows and Linux servers.
- **HP Storage System Scripting Utility (SSSU) software** — Provides comprehensive command line support, server-to-storage system communication, and tools for automating storage-related tasks.
- **HP P6000 Performance Data Collector software** — Collects HP P6000 EVA performance data that is displayed by HP P6000 Performance Advisor. The software also displays performance data graphically in Windows Performance Monitor (Perfmon) or in tabular form in a command prompt window.
- **HP EVA to 3PAR StoreServ Online Import software** — Migrates virtual disks on HP P6000 EVA storage systems to virtual volumes on HP 3PAR storage systems.

HP P6000 Command View ABM and SBM versions

HP P6000 Command View is the primary storage management software for HP P6000 EVA storage systems and is available in two versions

Array-based storage management (ABM). The array-based version of HP P6000 Command View comes factory-installed on HP P6000 EVA storage system models which have internal [management modules](#). The array-based version manages only the storage system on which it is installed. In many cases, the array-based version eliminates the need for a separate management server in the SAN.

Server-based storage management (SBM). The server-based version of HP P6000 Command View is customer installed on a server in the SAN. The server-based version provides management of

multiple HP P6000 EVA storage systems. The server on which HP P6000 Command View is installed is called a storage management server.

HP Management Integration Framework software

HP Management Integration Framework software provides storage-related security features and user interface capabilities and is included with HP P6000 Command View.

HP Management Integration Framework software provides the following interfaces and high level features:

- Security interface.
- Enhanced storage-related security integration and Management Group administration.
- Configuration interface.
- Command line tools.
- Automatic discovery of machines on a LAN.
- User interface integration for Management Integration Framework capable products.

Initialization and uninitialization

Initialization

Initialization makes a new storage system ready to use with your hosts. The HP P6000 Control Panel does not include an initialization feature. Storage administrators can initialize a new storage system by using HP P6000 Command View or HP P6000 SmartStart.

Initialization can include one or more of the following actions:

- Establishes the storage system name.
- Creates one or two default disk groups.
- Sets a disk-failure protection level (disk spares).
- Sets the storage system date and time.

Uninitialization

The HP P6000 Control Panel allows storage administrators to uninitialize HP P6000 EVA storage systems. Storage administrators can also use HP P6000 Command View.

⚠ CAUTION: Uninitialization deletes all user data and configuration information on the storage system. If you uninitialize a storage system, you must re-initialize it before it can be used for storage again.

When a storage system is uninitialized, certain logical structures are removed and all user data is irretrievably deleted.

- All application data on the storage system is deleted and cannot be recovered.
- All presentation to hosts ends and I/O with the hosts stops.
- All source virtual disks and snapclones are deleted.
- All local replication is stopped. Snapshot and mirrorclone virtual disks are deleted.
- All remote replication is stopped. All DR groups on the storage system are deleted. All virtual disks in the DR groups are deleted. (Remote copies of the virtual disks are not deleted.)

Uninitialization followed by power down

ⓘ IMPORTANT: If a storage system is uninitialized and then powered down before it is re-initialized, the HP P6000 management module IP address and network configuration information will be lost.

To restore this information, see [Reestablishing the storage system IP address](#).

More information on initialization and uninitialization is in the *HP P6000 Command View User Guide*. See [related information](#).

Internet Protocol configurations

- IP addresses on the Detailed Network Options page are specified using standard IPv4 or IPv6 formats.
- IP addresses on the Configure Client Filter for HP P6000 Command View page can be specified using standard IPv4 and IPv6 formats and CIDR formats.

IP address formats

Format and example	Remarks
IPv4 192.168.1.1	IPv4 IP address are generally shown in decimal notation, separated by dots (periods).
IPv4 with CIDR notation 192.168.1.1/24	
IPv6 2001:0DB8:0000:0000:0000:0000:1428:57AB	IPv6 IP addresses are generally shown in eight groups of four hexadecimal digits, separated by colons.
IPv6 with compressed notation 2001:DB8::1428:57AB	
IPv6 with CIDR notation 2001:DB8::1428:57AB/9	

Classless Inter-Domain Routing (CIDR) specifies an IP address range using a combination of an IP address and a value indicating the number of 1-bits that start a mask (similar to a subnet mask), for example `xxx.xxx.xxx.xxx/n` (IPv4) or `xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx:xxxx/n` (IPv6). For an IP address to be included in a CIDR notated address range, the *n* leftmost 1-bits in the given IP address must match the *n* leftmost 1-bits in the IP Address portion of the CIDR notated address.

Management module

HP P6000 EVA storage systems with array-based management contain a hardware component called the *management module*. The module includes an RJ45 jack for connecting the storage system to your LAN (Ethernet network). It also includes the software that runs the HP P6000 Control Panel.

The HP P6000 management module provides access to service data via the HP P6000 Control Panel and is always active, even when the controller enclosure is in standby mode.

Management module reset button

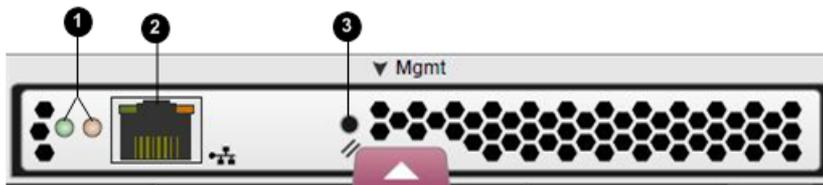
The *Reset* button on the HP P6000 management module performs the following functions:

- Sets the IP address for the storage system. See [Reestablishing the storage system IP address](#).
- Sets the logon credentials (user name, [password](#)) for *both* the HP P6000 Control Panel and array-based HP P6000 Command View to their default values:
admin, blank (no password)
user, blank (no password)
- Disables the HP P6000 Command View client filter list. See [Configuring access to HP P6000 Command View](#).

- Erases all log files that are stored on the management module.
- Sets the Controller Power Option to *disabled*. See also [Controller power on behavior](#).

The amber indicator on the top right corner of the LAN connector (Ethernet jack) will flash during the reset, which may take up to 2 minutes. When the reset operation is completed, the green indicator light in the upper left corner of the LAN connector will turn solid green.

1. LEDs
2. LAN connector
3. Reset button



Management module software

Management module software can be updated using the HP P6000 Control Panel. See [Updating management module software](#). After the files are uploaded, the software is automatically loaded to nonvolatile memory.

Management module IP addresses

The HP P6000 [management module](#) has an internal network and an interface to external networks.

External network interface

The external network interface communicates with devices such as:

- Web browsers connected to the HP P6000 Control Panel or HP P6000 Command View
- DNS servers
- Routers
- NTP servers

Storage administrators can enter the IP addresses for connecting to these devices using the Detailed Network Options page.

Internal network

The storage system's internal network provides communication between the storage controllers and the management module. The HP P6000 Control Panel does not allow reserved internal IP addresses to be entered for network devices. The reserved internal IP addresses vary with the version of HP P6000 management module software as follows:

- *February 2010 release and later.* The reserved internal IP addresses are 10.253.251.230 through 10.253.251.249.
- *Releases prior to February 2010.* The reserved IP addresses are 10.0.0.1, 10.0.0.2, and 10.0.0.3. In addition, the use of IP addresses 10.0.0.0 through 10.255.255.255 for connecting to an external network is not supported by the management module.

Operational states

Icon	Description
	Good. The device is operating normally.
	Attention. The device is not operating normally and may fail. Or, the device is in a transitional state that is not one of its steady states.
	Failed. The device has failed.
	Unknown. The operational state of the device is unknown.

Passwords

- ① **IMPORTANT:** When an HP P6000 EVA storage system with array-based management is first installed, HP P6000 Control Panel and storage system passwords are blank. For security purposes, HP recommends that you immediately create passwords.

Storage system password

The *storage system password* is the password that other HP P6000 management software, such as a server-based instance of HP P6000 Command View, must send to be granted storage administrator access to an HP P6000 array-based storage system. In the HP P6000 Control Panel this password is also called a *management server password*.

Storage system password requirements:

- Must be 8-16 characters
- Can include the letters A to Z, in upper or lower case
- Can include the numbers 0 to 9
- Can include the special characters: ! " # \$ % & ' () * + , - . / : ; < = > ? @ [] ^ _ ' { | }
- Cannot include the special characters: ~ \
- Cannot include spaces

Control Panel passwords

The *Administrator password* is the password that must be entered when logging in to the HP P6000 Control Panel as a storage administrator. Storage administrators can view information, change settings and perform actions.

The *User password* is the password that must be entered when logging in to the HP P6000 Control Panel as a user. Users can only view information and change the user login password.

- ① **IMPORTANT:** If you change the password for the HP P6000 Control Panel administrator or user accounts, be sure to record the new passwords since they cannot be cleared without resetting the management module.

Private and public networks

Because HP P6000 EVA storage systems with array-based management are connected to your local area network, it is important that you configure the connection properly to ensure that your HP P6000 system is secure. HP recommends that you connect to a private network, or configure it behind a firewall or proxy server.

The Internet Assigned Numbers Authority (IANA) reserves the following IP address ranges for private internets:

10.0.0.0 - 10.255.255.255
172.16.0.0 - 172.31.255.255
192.168.0.0 - 192.168.255.255

See also [Management module IP addresses](#).

World Wide Name (WWN)

A World Wide Node Name (WWN) is a globally unique 64-bit identifier assigned to each device in a Fibre Channel storage area network. WWNs are typically displayed as four-character hexadecimal groups. Example: 3600-5B64-C92E-2EC1.

4 Support and other resources

Release history

HP P6000 Control Panel releases:

Release	Version	New features
2013 (Sep)	2.8	See What's New
2012 (Oct)	2.7	<ul style="list-style-type: none">• HP P6000 Command View support. HP P6000 Control Panel adds support for version 10.2 of array-based HP P6000 Command View.
2012 (May)	2.6	<ul style="list-style-type: none">• HP P6000 Command View support. Updated. HP P6000 Control Panel adds support for version 10.1 of array-based HP P6000 Command View.
2011 (Oct)	2.5	<ul style="list-style-type: none">• Product name. Changed. The product name is changed from <i>HP P6000 Web-based Operator Control Panel</i> to <i>HP P6000 Control Panel</i>. Note that <i>P6000</i> is the HP storage platform <i>family name</i>; it does not refer to a specific model.• HP P6000 Command View support. Updated. HP P6000 Control Panel adds support for version 10.0 of array-based HP P6000 Command View.
2011 (Mar)	2.4	<ul style="list-style-type: none">• Product name. Changed. The product name is changed from <i>HP StorageWorks Web-based Operator Control Panel</i> to <i>HP P6000 Web-based Operator Control Panel (WOCP)</i>. Note that <i>P6000</i> is the HP storage platform <i>family name</i>; it does not refer to a specific model.• HP P6000 Command View support. Updated. HP P6000 WOCP adds support for version 9.4 of array-based HP P6000 Command View.• Controller power option. New. See Controller power on behavior.• Power the whole system off. Changed. The Power the whole system off action now includes powering down the disk shelves and drives.• P6300 and P6500 support. Added. HP P6000 WOCP also supports HP P6300 and HP P6500 storage systems.
2010 (Aug)	2.3.1	<ul style="list-style-type: none">• HP Command View EVA support. Updated. HP EVA WOCP adds support for version 9.3 of array-based HP Command View EVA.• HP EVA management module reset. Changed. The reset behavior has changed. See Management module reset button.• HP Management Integration Framework support. Updated. HP EVA WOCP adds support for version 1.2 of HP Management Integration Framework.• Management Integration Framework software name. References to <i>Management Infrastructure</i> software have been changed to <i>Management Integration Framework</i> software.
2010 (Feb)	2.3	<ul style="list-style-type: none">• IPv6 support. Support for Internet Protocol version 6 (IPv6) is added.• Internal IP addresses. The WOCP interface prevents entry of reserved internal IP addresses. See Management module IP addresses.

Release	Version	New features
		<ul style="list-style-type: none"> • Management Integration Framework software compatibility. The HP EVA WOCP is compatible with HP Management Integration Framework software.
2009 (Mar)	2.2	<ul style="list-style-type: none"> • HP Command View EVA access filter. Specify the IP addresses of computers that are allowed to access array-based HP Command View EVA. See Configuring access to HP Command View EVA.
2008 (Dec)	2.1	<ul style="list-style-type: none"> • Restart an HP EVA management module. Restart a storage system's internal management module. • Run array-based HP Command View EVA. Run the array-based version of HP Command View EVA from the WOCP. . • Stop the HP EVA WOCP. Stop the WOCP application. • HP EVA WOCP port number. Changed. The port number for the HP EVA WOCP is now 2373. See Accessing a WOCP. • Search feature. Online help includes a search feature.
2008 (Feb)	1.0	Initial release

Contacting HP

HP technical support

For worldwide technical support information, see the HP support website:

<http://www.hp.com/support>

Before contacting HP, collect the following information:

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

Subscription service

HP recommends that you register your product at the Subscriber's Choice for Business website:

<http://www.hp.com/go/wwalerts>

After registering, you will receive e-mail notification of product enhancements, new driver versions, software updates, and other product resources.

Documentation feedback

HP welcomes your feedback. To make comments and suggestions about product documentation you can:

- Send an e-mail to storagedocsFeedback@hp.com.

All submissions become the property of HP.

Related information

Documents

To find related documents, browse to the Manuals page of the HP Business Support Center web site:

<http://www.hp.com/support/manuals>

- For most related documentation, navigate to the **Storage** section, select a storage category (Storage Software and product).

Websites

- HP.com
<http://www.hp.com>
- HP storage
<http://www.hp.com/go/storage>
- HP manuals
<http://www.hp.com/support/manuals>
- HP download drivers and software
<http://www.hp.com/support/downloads>
- HP software depot
<http://www.software.hp.com>

Customer self repair

HP CSR programs allow you to repair your HP storage product. If a CSR part needs replacing, HP ships the part directly to you so that you can install it at your convenience. Some parts do not qualify for CSR. Your HP-authorized service provider will determine whether a repair can be accomplished by CSR.

For more information about CSR, contact your local service provider. For North America, see the CSR website:

<http://www.hp.com/go/selfrepair>

This product has no customer-replaceable components.

Glossary

This glossary provides the spelled-out form of technical abbreviations and acronyms found in this document. The glossary does not include definitions of terms. To find definitions and detailed explanations of terms and concepts, use the search feature, table of contents or index.

ABM	Array Based Management.
ALPA	Arbitrated Loop Physical Address.
DNS	Domain Name System.
DR	Data Replication.
EVA	Enterprise Virtual Array.
I/O	Input Output.
iSCSI	Internet Small Computer System Interface.
LAN	Local Area Network.
SAN	Storage Area Network.
SAS	Serial Attached SCSI.
SBM	Server Based Management.
UUID	Unique Universal Identifier.

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