HP StorageWorks Command View EVA installation guide
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# Contents

## About this guide
- Intended audience .................................................. 7
- Related documentation ............................................ 7
- Document conventions and symbols .............................. 8
- HP technical support ................................................ 9
- Subscription service ................................................ 9
- HP web sites .......................................................... 9
- Documentation feedback .......................................... 9
- Product feedback .................................................... 9

## 1 Preparation .......................................................... 11
- Prerequisites .......................................................... 11
  - Software suite .................................................... 11
  - SMI-S EVA .......................................................... 11
  - Replication licenses ............................................ 12
- Management server types .......................................... 12
- Configuring browser settings ..................................... 12
  - Internet Explorer settings ...................................... 13
  - Mozilla browser settings ...................................... 15
  - Refreshing the browser ......................................... 16
- Setting credentials .................................................. 17
  - Management server ............................................. 17
  - Ensuring successful authorization ............................. 17
- Changing ports for SMI-S EVA installation .................... 18
  - Setting a different port for SMI-S EVA ....................... 18
  - Changing the port for applications running on ports 5988 and 5989 .......... 18

## 2 HP Command View EVA software suite .......................... 19
- Using the typical installation ..................................... 19
- Using the custom installation .................................... 20
- Creating users on Windows ........................................ 21
- Verifying the installation ......................................... 22
- Upgrading the software suite ..................................... 22
  - HP Command View EVA ......................................... 22
  - HP Command View EVA Perf .................................... 23
  - SMI-S EVA .......................................................... 23
- Removing the software suite ...................................... 23

## 3 HP Storage System Scripting Utility .............................. 25
- Installing the utility on a host ................................... 25
- Verifying the installation ......................................... 26

## 4 SMI-S EVA ............................................................ 27
- Managing users in SMI-S EVA .................................... 27
- Creating users on Windows ....................................... 27
- Creating users with the cimuser utility ......................... 27
  - Managing users with the cimuser utility ...................... 28
  - CIM client connection to the SMI-S EVA server .............. 28

HP StorageWorks Command View EVA installation guide 3
Tables

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Document conventions</td>
</tr>
<tr>
<td>2</td>
<td>Internet Explorer settings</td>
</tr>
<tr>
<td>3</td>
<td>Mozilla browser settings</td>
</tr>
</tbody>
</table>
About this guide

This guide describes procedures for installing and removing the following software:

- HP StorageWorks Command View EVA
- HP StorageWorks Command View EVAPerf
- HP StorageWorks Storage System Scripting Utility (SSSU)
- Storage Management Initiative Specification for Enterprise Virtual Array (SMI-S EVA)

Intended audience

This guide is intended for personnel who install software in storage area networks (SANs) that include HP StorageWorks Enterprise Virtual Arrays (EVAs). Readers should be familiar with:

- SANs
- Operating systems, including Windows
- HP StorageWorks EVAs

Related documentation

The following documents are referenced in this guide:

- HP StorageWorks EVA software compatibility reference
- HP StorageWorks Command View EVA user guide
- HP StorageWorks Command View EVA release notes
- HP StorageWorks Storage System Scripting Utility reference
- HP StorageWorks Command View EVA online help (accessible from the HP Command View EVA user interface)
- HP StorageWorks EVA iSCSI connectivity quick start instructions for Windows
- HP StorageWorks EVA iSCSI connectivity user guide

You can find these documents on the Manuals page of the HP Business Support Center web site:

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

In the Storage section, click Storage software, and then select your product.
## Document conventions and symbols

### Table 1 Document conventions

<table>
<thead>
<tr>
<th>Convention</th>
<th>Element</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue text: Table 1</td>
<td>Cross-reference links and e-mail addresses</td>
</tr>
<tr>
<td>Blue, underlined text: <a href="http://www.hp.com">http://www.hp.com</a></td>
<td>Web site addresses</td>
</tr>
<tr>
<td><strong>Bold</strong> text</td>
<td>• Keys that are pressed</td>
</tr>
<tr>
<td></td>
<td>• Text typed into a GUI element, such as a box</td>
</tr>
<tr>
<td></td>
<td>• GUI elements that are clicked or selected, such as menu and list</td>
</tr>
<tr>
<td></td>
<td>items, buttons, tabs, and check boxes</td>
</tr>
<tr>
<td><em>Italic</em> text</td>
<td>Text emphasis</td>
</tr>
<tr>
<td>Monospace text</td>
<td>• File and directory names</td>
</tr>
<tr>
<td></td>
<td>• System output</td>
</tr>
<tr>
<td></td>
<td>• Code</td>
</tr>
<tr>
<td></td>
<td>• Commands, their arguments, and argument values</td>
</tr>
<tr>
<td>Monospace, italic text</td>
<td>• Code variables</td>
</tr>
<tr>
<td></td>
<td>• Command variables</td>
</tr>
<tr>
<td>Monospace, <strong>bold</strong> text</td>
<td>Emphasized monospace text</td>
</tr>
</tbody>
</table>

⚠️ **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 support 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
• Error messages
• Operating system type and revision level
• Detailed questions

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

Subscription service

HP recommends that you register your product at the Subscriber’s Choice for Business web site:  

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

HP web sites

For additional information, see the following HP web sites:
• http://www.hp.com
• http://www.hp.com/go/storage
• http://www.hp.com/service_locator
• http://www.docs.hp.com

Documentation feedback

HP welcomes your feedback.

To make comments and suggestions about product documentation, please send a message to  
storagedocs.feedback@hp.com. All submissions become the property of HP.

Product feedback

To make comments and suggestions about HP Command View EVA, please send a message to  
CVfeedback@hp.com.
## 1 Preparation

This chapter describes prerequisites for installing the HP Command View EVA software suite, management server types, and procedures for configuring browser settings. For descriptions of the software suite components and details about the kit contents, see *HP StorageWorks Command View EVA kit contents*.

### Prerequisites

This section describes prerequisites for installing the software suite and using replication features.

#### Software suite

Before you install the software suite:

- Read *HP StorageWorks Command View EVA release notes* for any installation or post-installation requirements specific to this release.
- Ensure that your environment includes:
  - One or more EVAs
  - A management server running a supported version of Microsoft Windows (see *HP StorageWorks EVA software compatibility reference*)
- Configure the browser settings for any server that will be used to access the HP Command View EVA user interface. For more information, see "Configuring browser settings" on page 12.

registrable

If your environment includes iSCSI devices, see *HP StorageWorks EVA iSCSI connectivity quick start instructions for Windows* for installation instructions, and *HP StorageWorks EVA iSCSI connectivity user guide* for configuration information.

#### SMI-S EVA

Before you install SMI-S EVA:

- Remove any previous version of SMI-S EVA. To determine if a previous version of SMI-S EVA is installed, open Windows Add/Remove Programs and see if HP StorageWorks SMI-S EVA is listed.

**IMPORTANT:**

You must reboot the management server after removing a previous version of SMI-S EVA. Otherwise, the installation will not be successful.

- Install WEBES before or after installing SMI-S EVA. WEBES is necessary to receive alert indications. To download WEBES, go to the following web site and follow the instructions: [http://h18023.www1.hp.com/support/svctools/webes/](http://h18023.www1.hp.com/support/svctools/webes/).
  See *HP StorageWorks EVA software compatibility reference* for the supported version.
- Ensure that you are logged in to the management server as a local user with local administrative privileges (the user must be a member of the local Administrators group).
  You must also be logged into the management server as this local user when you want to use the cituser utility.
• Ensure that an account named administrator exists on the management server in either the administrator or HP Storage Admins group. This administrator account is required to create the CIM administrator account during installation. If an administrator account does not exist on the management server prior to installation, the default CIM administrator account is not created during installation. You must add at least one CIM administrator account to CIMOM after completing the installation. See “Managing users in SMI-S EVA” on page 27 for more information.
• Verify that ports 5988 and 5989 are available. These ports must be available to install the CIMOM server. If these ports are unavailable, see “Changing ports for SMI-S EVA installation” on page 18.
• Install SLP before or after installing SMI-S EVA. SLP enables you to receive information about applications that are registered with it. For example, when CIMOM is registered with SLP, you can receive information about CIMOM, such as the CIMOM URL and attributes. After installing the HP StorageWorks Command View EVA software suite, the SLP installer file titled SLP_Setup.exe is available in the C:\Program Files\Hewlett-Packard\SLP folder.

Replication licenses

If you want to use replication features after installing the software suite, the following licenses are required:
• HP Business Copy EVA (snapshots, snapclones, and mirrorclones)
• HP Continuous Access EVA (data replication)

You must have sufficient licenses for each array on which snapshots, snapclones, and mirrorclones will be created or that will be the source or destination of replicated data. See the QuickSpecs for HP Business Copy EVA and HP Continuous Access EVA for more information.

Management server types

You can install the software on the following servers:
• **HP OpenView Storage Management Appliance (SMA)**—A centralized, dedicated monitoring and management hardware-software solution for the SAN
• **General-purpose server**—A server other than the HP OpenView Storage Management Appliance that runs customer applications, such as file and print services
• **Dedicated management server**—A Windows host that is intended solely for HP storage software, such as HP OpenView Storage Node Manager, HP OpenView Storage Area Manager add-on software modules, or HP StorageWorks EVA software
• **HP ProLiant storage server**—A server similar to the general-purpose server, used to manage EVAs in the SAN as well as traditional NAS-based applications

For hardware and software specifications, see *HP StorageWorks EVA software compatibility reference*.

Configuring browser settings

HP Command View EVA requires certain browser settings. This section describes the recommended browser settings for Internet Explorer and Mozilla. Configure the browser as described in this section; otherwise, the HP Command View EVA user interface will not work properly.

**NOTE:**

Even if you configure the browser settings as recommended in this section, the browser may not display some HP Command View EVA user interface features properly.
Internet Explorer settings

HP recommends that you configure the management server with the security settings appropriate for your environment, and browse to the management server from a client machine using Internet Explorer settings appropriate for HP Command View EVA.

In Windows environments, you may not be able to achieve the proper Internet Explorer settings on a management server with Microsoft’s IE Enhanced Security Configuration (IEESC) or other policy-enforced preconfigured settings. If you are browsing from an IEESC-configured management server, you must remove IEESC and manually configure Internet Explorer with the required HP Command View EVA browser settings.

Table 2 describes the browser settings for Internet Explorer. The settings are not all-inclusive; only those settings that apply to HP Command View EVA are listed. If a setting appears in bold, it is important to configure the setting as described.

### Table 2 Internet Explorer settings

<table>
<thead>
<tr>
<th>Menu option</th>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>View</td>
<td>Text Size</td>
<td><strong>Medium</strong>&lt;br&gt;This setting may affect the screen resolution setting. If it distorts HP Command View EVA page layouts, select a text size that enables text to fit in tables in the content pane.</td>
</tr>
<tr>
<td>Tools &gt; Internet Options &gt; General</td>
<td><strong>Temporary Internet Files &gt; Settings</strong></td>
<td><strong>Check for newer versions of stored pages</strong>&lt;br&gt;• <strong>Automatically</strong>—For a homogeneous EVA environment (EVA arrays only)&lt;br&gt;• <strong>Never</strong>—For a heterogeneous EVA environment (EVA and HSG80 arrays)</td>
</tr>
<tr>
<td></td>
<td><strong>Amount of disk space to use</strong></td>
<td><strong>10 MB</strong>&lt;br&gt;(minimum)</td>
</tr>
<tr>
<td>Colors</td>
<td>Use Windows colors</td>
<td><strong>Selected</strong></td>
</tr>
<tr>
<td></td>
<td>Use hover color</td>
<td><strong>Selected</strong></td>
</tr>
<tr>
<td>Fonts</td>
<td>Language script</td>
<td><strong>Latin-based</strong></td>
</tr>
<tr>
<td>Tools &gt; Internet Options &gt; Security &gt; Local Intranet &gt; Custom Level</td>
<td>Downloads</td>
<td><strong>Automatic prompting for file downloads</strong>&lt;br&gt;&lt;strong&gt;Enable&lt;/strong&gt;</td>
</tr>
<tr>
<td></td>
<td><strong>File download</strong></td>
<td><strong>Enable</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Font download</strong></td>
<td><strong>Enable</strong></td>
</tr>
<tr>
<td>Java VM</td>
<td>Java permissions</td>
<td><strong>Low safety</strong></td>
</tr>
<tr>
<td>Menu option</td>
<td>Setting</td>
<td>Value</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-------------------------------------------------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>Access data sources across domains</td>
<td>Prompt</td>
</tr>
<tr>
<td>Allow META REFRESH</td>
<td>Enable</td>
<td></td>
</tr>
<tr>
<td>Allow scripting of Internet Explorer web browser controls</td>
<td>Enable</td>
<td></td>
</tr>
<tr>
<td>Allow script-initiated windows without size or position constraints</td>
<td>Enable</td>
<td></td>
</tr>
<tr>
<td>Allow web pages to use restricted protocols for active content</td>
<td>Prompt</td>
<td></td>
</tr>
<tr>
<td>Display mixed content</td>
<td>Enable</td>
<td></td>
</tr>
<tr>
<td>Open files based on content, not file extension</td>
<td>Enable</td>
<td></td>
</tr>
<tr>
<td>Software channel permissions</td>
<td>Low safety</td>
<td></td>
</tr>
<tr>
<td>Submit nonencrypted form data</td>
<td>Enable</td>
<td></td>
</tr>
<tr>
<td>Use pop-up blocker</td>
<td>Disable</td>
<td></td>
</tr>
<tr>
<td>Userdata persistence</td>
<td>Disable</td>
<td></td>
</tr>
<tr>
<td>Web sites in less privileged web content zone can navigate into this zone</td>
<td>Enable</td>
<td></td>
</tr>
<tr>
<td>Scripting</td>
<td>Active scripting</td>
<td>Enable</td>
</tr>
<tr>
<td>Scripting of Java applets</td>
<td>Enable</td>
<td></td>
</tr>
<tr>
<td>User authentication</td>
<td>Logon</td>
<td>Automatic logon only in Intranet zone</td>
</tr>
<tr>
<td>Tools &gt; Internet Options &gt; Privacy</td>
<td>SETTINGS</td>
<td></td>
</tr>
<tr>
<td>Accept All Cookies</td>
<td>Bar at the very bottom of the scale</td>
<td></td>
</tr>
<tr>
<td>Pop-up Blocker</td>
<td>Not selected</td>
<td></td>
</tr>
<tr>
<td>Tools &gt; Internet Options &gt; Connections</td>
<td>LOCAL AREA NETWORK (LAN) SETTINGS</td>
<td></td>
</tr>
<tr>
<td>Configure to enable browsing to the management server on which HP Command View EVA is installed</td>
<td>Settings will vary based on your local network configuration</td>
<td></td>
</tr>
<tr>
<td>Tools &gt; Internet Options &gt; Advanced</td>
<td>BROWSING</td>
<td></td>
</tr>
<tr>
<td>Disable script debugging (Internet Explorer)</td>
<td>Selected</td>
<td></td>
</tr>
<tr>
<td>Disable script debugging (Other)</td>
<td>Selected</td>
<td></td>
</tr>
<tr>
<td>Display a notification about every script error</td>
<td>Not selected</td>
<td></td>
</tr>
<tr>
<td>Enable third-party browser extensions (requires restart)</td>
<td>Selected</td>
<td></td>
</tr>
<tr>
<td>Enable visual styles on buttons and controls in web pages</td>
<td>Selected</td>
<td></td>
</tr>
<tr>
<td>Reuse windows for launching shortcuts</td>
<td>Not selected</td>
<td></td>
</tr>
<tr>
<td>Show friendly HTTP error messages</td>
<td>Selected</td>
<td></td>
</tr>
<tr>
<td>Menu option</td>
<td>Setting</td>
<td>Value</td>
</tr>
<tr>
<td>---------------------</td>
<td>----------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Multimedia</td>
<td>Enable Automatic Image Resizing</td>
<td>Selected</td>
</tr>
<tr>
<td></td>
<td>Play animations in web pages</td>
<td>Selected</td>
</tr>
<tr>
<td></td>
<td>Show pictures</td>
<td>Selected</td>
</tr>
<tr>
<td></td>
<td>Smart image dithering</td>
<td>Selected</td>
</tr>
<tr>
<td>Security</td>
<td>Check for server certificate revocation</td>
<td>Not selected</td>
</tr>
<tr>
<td></td>
<td>Check for signatures on downloaded programs</td>
<td>Selected</td>
</tr>
<tr>
<td></td>
<td>Do not save encrypted pages to disk</td>
<td>Not selected</td>
</tr>
<tr>
<td></td>
<td>Use SSL 2.0</td>
<td>Selected</td>
</tr>
<tr>
<td></td>
<td>Use SSL 3.0</td>
<td>Selected</td>
</tr>
<tr>
<td></td>
<td>Warn about invalid site certificates</td>
<td>Selected</td>
</tr>
<tr>
<td></td>
<td>Warn if changing between secure and not secure mode</td>
<td>Selected</td>
</tr>
<tr>
<td></td>
<td>Warn if forms submittal being redirected</td>
<td>Selected</td>
</tr>
<tr>
<td>VM</td>
<td>JIT compiler for virtual machine enabled (requires restart)</td>
<td>Selected</td>
</tr>
</tbody>
</table>

**Mozilla browser settings**

Table 3 describes the browser settings for Mozilla. The settings are not all-inclusive; only those settings that apply to HP Command View EVA are listed. If a setting appears in bold, it is important to configure the setting as described.

The recommended settings should enable the browser to properly display HP Command View EVA fonts and page layouts. Many UNIX environments, however, do not handle fonts and page layouts consistently. You may have to make adjustments for the most readable HP Command View EVA page layouts. For example, if your browser is set for large fonts, it may cause HP Command View EVA’s property tables to appear crowded and unreadable. You may want to reduce the font size for your browser.

**NOTE:**

Toolips are not available in Mozilla.

**Table 3 Mozilla browser settings**

<table>
<thead>
<tr>
<th>Menu option</th>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edit &gt; Preferences &gt; Appearance</td>
<td>Allow documents to use other fonts</td>
<td>Selected</td>
</tr>
<tr>
<td></td>
<td>When a web page specifies its own colors and background, always use the colors and background specified by the web page</td>
<td>Selected</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Menu option</th>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edit &gt; Preferences &gt; Privacy &amp; Security</td>
<td>Cookie Acceptance Policy</td>
<td>Allow all cookies</td>
</tr>
<tr>
<td></td>
<td>Cookie Lifetime Policy</td>
<td>Accept cookies normally</td>
</tr>
<tr>
<td>Menu option</td>
<td>Setting</td>
<td>Value</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Images</td>
<td>Image Acceptance Policy</td>
<td>Accept all images</td>
</tr>
<tr>
<td></td>
<td>Animated images should loop</td>
<td>As many times as the image specifies</td>
</tr>
<tr>
<td>Pop-Up Windows</td>
<td>Block unrequested pop-up windows</td>
<td>Not selected</td>
</tr>
<tr>
<td>Forms &gt; Forms Manager</td>
<td>Save form data from web pages when completing forms</td>
<td>Selected</td>
</tr>
<tr>
<td>Passwords &gt; Encrypting versus Obscuring</td>
<td>Use encryption when storing sensitive data</td>
<td>Not selected</td>
</tr>
<tr>
<td>SSL &gt; SSL Protocol Versions</td>
<td>Enable SSL version 2</td>
<td>Selected</td>
</tr>
<tr>
<td></td>
<td>Enable SSL version 3</td>
<td>Selected</td>
</tr>
<tr>
<td>SSL &gt; SSL Warnings</td>
<td>All options</td>
<td>Not selected</td>
</tr>
<tr>
<td>Validation &gt; OCSP</td>
<td>Set Mozilla to use OCSP as follows</td>
<td>Do not use OCSP for certificate validation</td>
</tr>
<tr>
<td>Edit &gt; Preferences &gt; Advanced</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Features that help interpret web pages</td>
<td>Java</td>
<td>Selected</td>
</tr>
<tr>
<td>Scripts &amp; Plug-Ins</td>
<td>Enable Javascript for Navigator</td>
<td>Selected</td>
</tr>
<tr>
<td></td>
<td>Allow scripts to</td>
<td>Select all options</td>
</tr>
<tr>
<td>Cache &gt; Set cache options</td>
<td>Cache</td>
<td>10 MB</td>
</tr>
<tr>
<td></td>
<td>Compare the page in cache to the page on the network</td>
<td>When the page is out of date—For a homogeneous EVA environment (EVA arrays only) Never—for a heterogeneous EVA environment (EVA and HSG80 arrays)</td>
</tr>
<tr>
<td>Link Pre-Fetching</td>
<td>Prefetch web pages when idle, so that links in web pages designed for prefetching can load faster</td>
<td>Not selected</td>
</tr>
<tr>
<td>Configure Proxies to Access the Internet</td>
<td>Configure to enable browsing to the management server on which HP Command View EVA is installed</td>
<td>Settings will vary based on your local network configuration</td>
</tr>
<tr>
<td>HTTP Networking &gt; Direct Connection Options</td>
<td>HTTP 1.0</td>
<td>Selected</td>
</tr>
<tr>
<td></td>
<td>Keep alive</td>
<td>Selected</td>
</tr>
<tr>
<td>HTTP Networking &gt; Proxy Connection Options</td>
<td>HTTP 1.0</td>
<td>Selected</td>
</tr>
<tr>
<td></td>
<td>Keep alive</td>
<td>Selected</td>
</tr>
</tbody>
</table>

**Refreshing the browser**

After you upgrade HP Command View EVA, refresh the browser:

- In Internet Explorer, press **Ctrl+F5**.
- In Mozilla, press **Shift** and click **Reload** simultaneously.
Setting credentials

The existence of groups and users during software installation ensures:

- Authentication of users by login to the underlying operating system
- Assignment of predefined privileges to users

**NOTE:**

In this section, unless a specific reference is made to the HP Storage Users group, *user* refers to all people who can access the software.

Management server

Groups are created automatically during the installation process. Alternatively, you can create them manually before initiating the software installation. This section describes the manual procedure.

To create groups and users on the management server:

1. Use the Windows operating system feature to create the following groups:
   - HP Storage Admins
   - HP Storage Users

**IMPORTANT:**

To ensure successful authorization of groups, you must create the group names exactly as described in this step. See your Windows documentation for instructions on creating users.

These groups have predefined privileges assigned to them. Anyone in the HP Storage Admins group can view and perform all tasks. Anyone in the HP Storage Users group can only view information.

2. Create the users that you will assign to these groups. Enter a name and password for the user and select a group for the user.

You can also import users to groups. However, because SMI-S EVA does not validate imported users, HP recommends that you create users manually.

**NOTE:**

Ensure that the *User must change password at next logon* option is not selected when creating users.

Ensuring successful authorization

Windows accounts used for authentication must have the *Access the computer from the network* permission enabled. By default, this permission is granted to Everyone, but some systems have a more restrictive setting. With these systems, Everyone is removed and permission is enabled for application-specific groups. In this case, you cannot authenticate with valid credentials.

To ensure successful authentication:

1. Access the Local Security Policy feature on the Windows operating system.
   
   The Local Security Settings window opens.

2. Select *Security Settings > Local Policies > User Rights Assignment*.

3. Double-click the *Access this computer from the network* policy in the right content pane.

4. Click *Add User or Group*.
5. Add the users you have created to this permission. See your operating system documentation for further instructions.

Changing ports for SMI-S EVA installation

If ports 5988 and 5989 are unavailable, do one of the following:

- Set a different port for SMI-S EVA
- Change the port for applications running on ports 5988 and 5989

Setting a different port for SMI-S EVA

To set a different port for SMI-S EVA:

1. Install SMI-S EVA if not installed.
   It will occupy port 5988 or 5989.
2. Stop the HP StorageWorks CIMServer service from the Services window.
3. Change the ports on which SMI-S EVA must run by changing the parameters in the cimserver_planned.conf file. This file is located in the following directory:
   C:\Program Files\Hewlett-Packard\pegasus_home
4. Start the HP StorageWorks CIMServer service.
   SMI-S EVA will run on the configured ports.

Changing the port for applications running on ports 5988 and 5989

To change the port for applications running on ports 5988 and 5989:

1. Stop the applications.
2. Change the port number for each application to another available port. For more information, see "Configuring the CIMOM port" on page 34.
3. Restart the applications.
4. Install SMI-S EVA.
   It will now occupy ports 5988 and 5989.
2 HP Command View EVA software suite

This chapter describes how to use the master installer to install and remove the HP Command View EVA software suite. The procedures describe using the software CD to perform the installation. You can also install and remove the software using Windows Add/Remove Programs.

**IMPORTANT:**
You must install the HP Command View EVA software on the C:\ drive of the management server.

The master installer has typical and custom installation options.
The typical installation option installs all of the following software:

- HP Command View EVA
- HP Command View EVAPerf
- HP Storage System Scripting Utility
- SMI-S EVA (including CIMOM)

**NOTE:**
You cannot add domain groups using the typical installation.

The custom installation option enables you to select the software you want to install. The options are:

- HP Command View EVA and HP Storage System Scripting Utility
- HP Command View EVAPerf
- SMI-S EVA (including CIMOM)

For example, use the custom installation option to install HP Command View EVAPerf on a Windows host other than the management server. If you select SMI-S EVA, the other software options are automatically selected.

Using the typical installation

**NOTE:**
If you are installing SMI-S EVA, ensure that you have met the prerequisites listed in "SMI-S EVA" on page 11.

To install the complete software suite:

1. Close all applications running on the management server.
2. Insert the software CD into the drive.
3. Browse to the software CD.
4. Double-click setup.exe to start the installation.
   The InstallShield Wizard Welcome window opens.
5. Click Next.
The License Agreement window opens.

6. Read and accept the terms of the license agreement, and then click Next. The installation choice window opens.

7. Select Typical, and then click Next. The installation summary window opens.

8. Verify the details of the installation, and then click Install. Wait for the installation to finish. When the installation has finished, the installation summary window opens and the following message appears:

HP strongly recommends that Web-based Enterprise Services (WEBES) be installed. WEBES is a tool suite that is aimed at preventing or reducing your system's down time.

You can download the latest version of WEBES from: http://h18023.www1.hp.com/support/svctools/webes/

9. Click Finish.

**NOTE:**

When SMI-S EVA is installed using the typical installation, a default account for the CIM administrator is created if an administrator account exists on the management server prior to installation. The default user name and password is administrator. If an administrator account does not exist on the management server prior to installation, the default CIM administrator account is not created during installation. You must add at least one CIM administrator account to CIMOM after completing the installation. See “Managing users in SMI-S EVA” on page 27 for more information.

A trust relationship between HP Command View EVA and SMI-S EVA is established automatically when you install SMI-S EVA. As a result, HP Command View EVA accepts all SMI-S EVA queries.

---

**Using the custom installation**

**NOTE:**

If you are installing SMI-S EVA, ensure that you have met the prerequisites listed in "SMI-S EVA" on page 11.

To install selected software components:

1. Complete steps 1 through 6 in "Using the typical installation" on page 19.

2. Select Custom.

3. Select the software component(s) you want to install.

4. Click Next.

5. If the installer detects the server is a domain member, you can set credentials for administrator and user domain groups. Do one of the following:

   a. Select yes, and then click Next. Continue with Step 6.

   b. Select no, and then click Next. Continue with Step 8.

6. Enter the domain and domain group names for storage administrators, and then click Next.

When entering names, remember the following:

- Use the DNS format for the domain name. For example, enter americas, not americas.mycompany.com.
• Valid characters for names are A-Z, a-z, 0-9, -, and $.
• Invalid characters for names are \ / [ ] : ; | = + , * ? < > @.
• The maximum length of the domain name is 63 characters.
• The maximum length of the domain group name is 255 characters.

7. Enter the domain and domain group names for storage users, and then click Next. Follow the same guidelines for names as noted in Step 6.

8. The InstallShield wizard checks for the existence of local groups and users. If you have not already created the groups and users, the installer creates them. Click Next to continue.

9. If you are installing SMI-S EVA, you are prompted to enter a password for the CIM administrator account. The default CIM administrator account user name is administrator. The password you enter does not have to match the password of the local administrator account on the management server. CIMOM has its own authentication and set of users, which are managed separately from the operating system authentication and set of users on the management server. Enter the password twice and click Next.

NOTE:
If an administrator account does not exist on the management server prior to installation, the default CIM administrator account is not created during installation. You must add at least one CIM administrator account to CIMOM after completing the installation. See "Managing users in SMI-S EVA" on page 27 for more information.

The installation summary window opens.

NOTE:
If you are not installing SMI-S EVA, the installation summary window opens after Step 8.

10. Verify the details of the installation, and then click Install. Wait for the installation to finish.

When the installation has finished, the installation summary window opens and the following message appears:

HP strongly recommends that Web-based Enterprise Services (WEBES) be installed. WEBES is a tool suite that is aimed at preventing or reducing your system's down time.

You can download the latest version of WEBES from:
http://h18023.www1.hp.com/support/svctools/webes/

11. Click Finish.

Creating users on Windows

After installing HP Command View EVA, a Windows user with administrator privileges must create accounts for other Windows users and assign them to one of the following groups:

• **HP Storage Admins**—Members have view and manage capabilities for HP Command View EVA and SMI-S EVA.

• **HP Storage Users**—Members have view capability only for HP Command View EVA and SMI-S EVA.

These groups are created when you install HP Command View EVA. See your Windows user documentation for more information.
Verifying the installation

To verify that the software was installed successfully:

1. Ensure that:
   - The software icons for HP Command View EVA, HP Command View EVAPerf, and/or HP Storage System Scripting Utility appear on the desktop.
     If you installed the software suite on an SMA, the HP Command View EVA icon does not appear on the desktop.
   - The software is available from the Start menu (for example, Start > Programs > HP Command View EVA).
     If you installed the software suite on an SMA, the software is not available from the Start menu.
   - The applicable software components are listed in Add/Remove Programs:
     - HP StorageWorks Command View EVA software suite
     - HP StorageWorks Command View EVA
     - HP StorageWorks Command View EVAPerf
     - HP StorageWorks SMI-S EVA
     - HP StorageWorks SMI-S CIMOM

**NOTE:**
HP Storage System Scripting Utility is not listed in Add/Remove Programs.

2. Start the software. See HP StorageWorks Command View EVA user guide for more information.

3. Verify the display of storage system resources in the interface. In the Navigation pane, click Hardware and verify the following:
   - New, uninitialized arrays appear as uninitialized storage systems.
   - Previously initialized arrays appear with their previous names and correct status. (Select each storage array to view the Properties page.)
   - Previous disk groups, hosts, virtual disks, and other resources appear in the Navigation pane.

If information is not displayed properly, see “Configuring browser settings” on page 12.

Upgrading the software suite

Before upgrading the software suite (or selected components), ensure that the minimum required version of each component is installed. If you are running a version earlier than the minimum required version, you must remove that version and then install the current version. See HP StorageWorks Command View EVA release notes for minimum required versions.

If you are upgrading the software suite, follow the procedure in “Using the typical installation” on page 19. If you are upgrading selected components, follow the procedure in “Using the custom installation” on page 20. The only difference is that the InstallShield wizard indicates that it is an upgrade.

HP Command View EVA

After upgrading HP Command View EVA, you must review each layered application to determine the necessary changes to accommodate the HP Command View EVA security features. For a list of applicable layered applications, see the “HP Command View EVA interoperability support” table in HP StorageWorks EVA software compatibility reference.
HP Command View EVA Perf

Before upgrading HP Command View EVAPerf, back up the fnames.conf file.

SMI-S EVA

SMI-S EVA does not support upgrades. You must remove previous versions of SMI-S EVA before installing the current version. If not, the previous installation is overwritten.

Removing the software suite

Use Windows Add/Remove Programs to remove either the complete software suite or the individual components.

⚠️ CAUTION:

Before removing HP Command View EVAPerf, move all data files from the application directory to a temporary directory. Otherwise, you will lose your data.

To remove the complete software suite, select **HP StorageWorks Command View EVA software suite** in Add/Remove Programs.

To remove an individual component, select the applicable component:

- HP StorageWorks Command View EVA
- HP StorageWorks Command View EVAPerf
- HP StorageWorks SMI-S EVA
- HP StorageWorks SMI-S CIMOM

If SMI-S EVA is installed, you cannot remove HP Command View EVA or HP Command View EVAPerf individually.

💡 NOTE:

When you remove HP Command View EVA, HP Storage System Scripting Utility is also removed.

When you remove SMI-S EVA, SMI-S CIMOM is not removed. You must remove it separately. You can remove SMI-S CIMOM only if SMI-S EVA is removed.

After removing a software component, close and open Add/Remove Programs to refresh the display and ensure that the component is not listed.
3 HP Storage System Scripting Utility

When you use the master installer, HP Storage System Scripting Utility is installed automatically with HP Command View EVA on the management server. You can also install the utility on a host with access to HP Command View EVA. This chapter describes the procedure to install the utility on a host.

Installing the utility on a host

To install the utility on a host:

1. Insert the SSSU CD into the drive on the host.
2. Select the file for the applicable operating system:

<table>
<thead>
<tr>
<th>Operating system</th>
<th>Directory</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP OpenVMS 7.3.2 and 8.2 with Alpha servers</td>
<td>VMS\SSSU_VMS_ALPHA.EXE</td>
</tr>
<tr>
<td>HP OpenVMS 8.2-1 with Integrity servers</td>
<td>VMS\SSSU_VMS_IA64.EXE</td>
</tr>
<tr>
<td>HP HP-UX 11.11 PA-RISC</td>
<td>hp_ux\sssu_hpux11_11_parisc</td>
</tr>
<tr>
<td>HP HP-UX 11.23 IA64</td>
<td>hp_ux\sssu_hpux11_23_ia64</td>
</tr>
<tr>
<td>HP HP-UX 11.23 PA-RISC</td>
<td>hp_ux\sssu_hpux11_23_parisc</td>
</tr>
<tr>
<td>HP Tru64 UNIX</td>
<td>tru64\sssu_tru64</td>
</tr>
<tr>
<td>IBM AIX</td>
<td>ibm_aix\sssu_aix</td>
</tr>
<tr>
<td>Linux (Red Hat 3.0) 32-bit</td>
<td>sssu_las30_x86</td>
</tr>
<tr>
<td>Linux (Red Hat 3.0) 64-bit</td>
<td>sssu_las30_ia64</td>
</tr>
<tr>
<td>Linux (Red Hat 4.0) 32-bit</td>
<td>sssu_las40_x86</td>
</tr>
<tr>
<td>Linux (Red Hat 4.0) 64-bit</td>
<td>sssu_las40_ia64</td>
</tr>
<tr>
<td>Linux (SuSE 8) 32-bit</td>
<td>sssu_sles8_x86</td>
</tr>
<tr>
<td>Linux (SuSE 8) 64-bit</td>
<td>sssu_sles8_ia64</td>
</tr>
<tr>
<td>Linux (SuSE 9) 32-bit</td>
<td>sssu_sles9_x86</td>
</tr>
<tr>
<td>Linux (SuSE 9) 64-bit</td>
<td>sssu_sles9_ia64</td>
</tr>
<tr>
<td>Sun Solaris</td>
<td>sun_os\sssu_sunos</td>
</tr>
<tr>
<td>VMware ESX Server 2.5.2</td>
<td>vmware\sssu_vmware_esx2.5.2_x86</td>
</tr>
<tr>
<td>Microsoft Windows</td>
<td>windows\sssu_win_x86.exe</td>
</tr>
</tbody>
</table>

NOTE:

Use the following command to mount the CD on an HP OpenVMS host:

```
$ mount/undefined_fat=fixed:none:512
```

3. Follow the instructions online to complete the installation.
Verifying the installation

To verify that the software was installed correctly, ensure that the software icon appears on the desktop.
This chapter describes how to configure SMI-S EVA after installation.

Managing users in SMI-S EVA

The CIM administrator account is created during SMI-S EVA installation if an account named administrator exists on the management server in either the administrator or HP Storage Admins group. As the local administrator, you have view and manage capabilities for SMI-S EVA, and you can create user accounts and assign privileges. To do this:

- Create local accounts on the Windows server and assign them to the HP Storage Admins or HP Storage Users group
- Create users on local accounts with the cimuser utility

If you do not have a local user named administrator in either the administrator or HP Storage Admins group, you must create at least one CIM administrator account using the cimuser utility as described in Creating users with the cimuser utility. The user name of the CIM administrator account you create must match that of an existing user in either the administrator or HP Storage Admins group, but the password can be different.

When entering names, remember the following:

- Valid characters are A-Z, a-z, 0-9, -. $
- Invalid characters are \ / [ ] ; ; | = + , * ? < > " @.

**NOTE:**
When you create user accounts, ensure that the user name is alphanumeric. Special characters are not allowed.

Creating users on Windows

After installing HP Command View EVA, a Windows user with administrator privileges must create accounts for other Windows users and assign them to one of the following groups:

- **HP Storage Admins**—Members have view and manage capabilities for HP Command View EVA and SMI-S EVA.
- **HP Storage Users**—Members have view only capability for HP Command View EVA and SMI-S EVA.

These groups are created when you install HP Command View EVA. See your Windows user documentation for more information.

Creating users with the cimuser utility

To ensure that the Windows user has relevant permissions to HP Command View EVA and SMI-S EVA, use the cimuser utility to create a user account with the same user name.

**NOTE:**

Only a local Windows user can be added as CIM user, using the cimuser utility. The cimuser utility can be executed only by the local Windows system administrator or a user of the administrator group.

The cimuser utility manages CIMOM user database changes. For typical usage, run cimuser without parameters.
To create a user with the cimuser utility:

1. Open the cimuser utility in a command window. The utility is located in the following directory:
   C:\Program Files\Hewlett-Packard\pegasus_home\bin
2. To add a user, enter the cimuser -a -u <username> command, and press Enter.

   **NOTE:**
   Ensure that the user name is the same as the user name specified in the user account on Windows.

3. Enter a password and press Enter.

   **NOTE:**
   This password can be different from the password you set for the user on Windows.

4. Re-enter the password and press Enter.

   The user is added.

5. Enter the cimuser -l command, and verify the user is listed.

Managing users with the cimuser utility

To remove a user, enter the following command:

cimuser -r -u <username>

To modify a user, enter the following command:

cimuser -m -u <username>

CIM client connection to the SMI-S EVA server

If you are using SSL mode, there is a SSL certificate on the SMI-S EVA server that must be made available on the SMI-S client machine to establish a CIM connection with the SMI-S EVA server. This certificate is available in the client.pem file and must be converted to a trust file. The importcert.bat file stores the SSL certificate in the hpSMIS.trust file, which can be then copied to the CIM client machine. This hpSMIS.trust file can then be used for Java-based CIM clients.

If you do not need to establish a connection with the SMI-S EVA server (this is non-SSL mode), you do not need to copy any files.

**NOTE:**

The follow steps only apply if your client application requires a secure connection over SSL and does not use a trust all certificate manager. By default, HP Storage Essentials and HP Systems Insight Manager use a trust all certificate manager, but can be reconfigured to authenticate each connection against certificates in their truststore.
For Java-based clients:

1. Open a command window on the SMI-S EVA server.
2. Browse to the C:\Program Files\Hewlett-Packard\pegasus_home directory.
3. Execute importcert.bat. The certificate is added to the keystore and will update the existing hpSMIS.trust file on the SMI-S EVA server.
4. Copy the hpsmis.trust file to the CIM client machine.
5. On the CIM client machine, specify the following options for connecting to the SMI-S EVA server using SSL mode:
   
   ```
   java -Djavax.net.ssl.trustStoreType=jks -Djavax.net.ssl.trustStore=hpSMIS.trust
   ```
   
6. Change the classpath variable to include the directory for the hpSMIS.trust file.

   The non Java-based clients must use client.pem to connect to the SMI-S EVA server.

**Modifying the EVAprovider.properties file**

You can modify the EVAprovider.properties file to set up the SMI-S EVA service. The file is located in the C:\Program Files\Hewlett-Packard\pegasus_home\bin\EVAprovider directory.

You can use a text editor to modify the following parameters in the EVAprovider.properties file:

- **Max_Log_Filesize**—The maximum size of each log file. The default value is 10 MB. When the file size reaches the threshold specified in this parameter, a new log file is created.
- **Max_Log_Files**—The maximum number of provider log files that are allowed in the directory. The default value is 5.

NOTE:

In the C:\Program Files\Hewlett-Packard\pegasus_home\logs\EVAprovider directory, the first log file is overwritten when the following occurs:

- The number of files reaches the limit specified in the Max_Log_Files parameter
- The size of each file reaches the maximum limit specified in the Max_Log_FileSize parameter

This is a cyclical process. After the first file is overwritten, the next file is overwritten.

- **Lifecycle_Indication_Poll_Frequency**—The default value is 10 minutes. Setting a lower value for this parameter affects performance.
- **Session_Timeout_Mins**—The default value is 120 minutes. Setting a lower value for this parameter affects performance.

After modifying the EVAprovider.properties file, restart the HP StorageWorks SMI-S CIMServer service.
 Supported SMI-S components

SMI-S EVA enables Common Information Model (CIM)-capable management of EVAs using SMI-S 1.0.2 and SMI-S 1.1.0. SMI-S EVA is based on the Managed Object Format (MOF) 2.11.

SMI-S EVA supports the following profiles, subprofiles, and indications specified in SMI-S 1.0.2 and SMI-S 1.1.0:

- **Profile**
  - Array
  - Server
- **Subprofiles**
  - Access Points
  - Back End Ports
  - Block Server Performance
  - Block Services Package
  - Copy Services
  - Disk Drive Lite
  - FC Initiator Port
  - FC Target Port
  - Job Control
  - Location
  - LUN Creation
  - Masking and Mapping
  - Multiple Computer System
  - Physical Package
  - Pool Manipulation Capabilities and Settings
  - Software
- **Indications - Events Capabilities**
  - Alert indications
  - Lifecycle indications
- **Other Features**
  - Operating system (OS)-based security
  - Service Location Protocol (SLP) discovery
  - Secure Sockets Layer (SSL)

Enabling SLP

You can enable or disable SLP by changing the value of the SLP property located in the `cimserver_planned.conf` file in the `C:\Program Files\Hewlett-Packard\pegasus_home` directory.

- To enable SLP, set the SLP property to `TRUE`, and then restart the CIMOM service.
- To disable SLP, set the SLP property to `FALSE`, and then restart the CIMOM service.
Other configuration and usage information

This section contains additional information about configuring and using SMI-S EVA.

Logging

The cimserver log is disabled by default. To enable the log, see Log levels and components.

When created, the log file name is cimserver.txt and the file is located in the following directory:
C:\Program Files\Hewlett-Packard\pegasus_home

Log levels and components

You can set the level of logging required in the cimserver_planned.conf file, which is located in the following directory:
C:\Program Files\Hewlett-Packard\pegasus_home

Following are the descriptions of each level:

• Level 1: Function entry/exit
• Level 2: Basic logic flow trace messages, minimal data detail
• Level 3: Intra-function logic flow and moderate data detail
• Level 4 High data detail

For example, you can set the traceLevel to level 2:

```plaintext
traceLevel=2
```

The components that can be set for logging are:

• Channel
• XmlParser
• XmlWriter
• XmlIO
• XmlReader
• Http
• CimData
• ProvManager
• Repository
• Dispatcher
• OsAbstraction
• Config
• IndDelivery
• All

Setting the component name to All enables logging of all components. If you are setting more than one component name, the names must be separated by a comma, as shown in the following example:

```plaintext
traceComponents = Http,CimData
```

⚠️ CAUTION:

HP strongly recommends that you do not enable the cimserver log. You should only enable this log if requested by HP Support for troubleshooting.
Ensuring successful restart of the cimserver

To verify that the cimserver has restarted successfully:

1. Open the PegasusStandard.log file in the following directory:
   C:\Program Files\Hewlett-Packard\pegasus_home\logs

   The log file contains the following information:
   05/18/06-19:08:44 INFO cimserver: Listening on HTTP port 5988.
   05/18/06-19:08:49 INFO cimserver: Listening on HTTPS port 5989.
   05/18/06-19:08:49 INFO cimserver: Started CIM Server version 2.5.0.
   05/18/06-19:09:03 INFO cimserver: SLP Registration Initiated.

   **NOTE:**
   The port numbers 5988 and 5989 can vary, depending on the value set for httpPort
   and httpsPort in the cimserver_current.conf file located at: C:\Program
   Files\Hewlett-Packard\pegasus_home.

   05/18/06-19:09:03 INFO cimserver: SLP Registration
   Initiated is visible, depending on the value set for slp in the
   cimserver_current.conf file located at: C:\Program Files\Hewlett-
   Packard\pegasus_home

2. Verify that the timestamps are from the latest restart. If so, then the cimserver has restarted successfully.

Authentication

The password for the default CIM-WEBM administrator can be different from the Windows administrator password. Use the user name and password, as set in CIMOM, to access it through the CIM client.

Disk drive failure protection

When you create a pool using SMI-S EVA, the default spare level is set to single, which means disk space is reserved for failure protection. A spare level of single prevents data loss and ensures that data can be reconstructed if a disk failure occurs in the disk group.

As a result, the size of pool will not be equal to the number of disk extents multiplied by the size of the extents. The size of each extent is equal to the space reserved for storing metadata information plus the space reserved for failure protection (which is based on the requested level of protection).

If the requested level of protection is double, then approximately half of the original pool size is displayed as the capacity of the pool by HP Command View EVA. If the requested level of protection is none, then the size of the pool that is requested is the same as what is displayed.

JVM changes

The JVMoptions.conf file, located at C:\Program Files\Hewlett-Packard\pegasus_home, contains the Java options that are used in the command line. The default parameters in the JVMoptions.conf file are:

- Xms64m (Minimum Heap Memory Usage in mb)
- Xincgc (Incremental Garbage Collector)
- Xmx1024m (Maximum Heap Memory Usage in mb)
You can modify these parameters to adjust memory usage and other JVM options.

⚠️ **CAUTION:**
HP recommends that you exercise caution in modifying these parameters.

---

**Device access in LUN masking**

HP Command View EVA provides an option to create a virtual disk in read-only or read-write mode. The virtual disk is presented to the host in the same mode in which the virtual disk was created. HP Command View EVA does not provide an option for presenting a virtual disk to a host in a mode other than the mode in which it is created. For example, you cannot present a read-write virtual disk in read-only mode to a host.

In SMI-S EVA, passing the `DeviceAccess` parameter for the Create a View Protocol Controller and Add LUNs to View methods is mandatory. Using these parameters, virtual disks can be presented to the host in the same mode in which they are created. For example, virtual disks created in read-only or read-write mode can be presented to the host in read-only or read-write mode, respectively.

If you create a virtual disk in a read-only mode and present it to a host in read-write mode, user access depends on the HP Command View EVA implementation. However, if you create a virtual disk in read-only mode and the `DeviceAccess` parameter is passed as read-write for the Create a View Protocol Controller method, SMI-S EVA displays the Invalid Parameter error. The view is created, but the virtual disk is not presented to the host.

**Data type**

If you enter a negative value for the size of a virtual disk, the following error is displayed:

* Forced close in default

You can pass null as a parameter for a `UINT16[]` array, however, you cannot pass an array of nulls. If you pass an array of nulls, the following error is displayed:

* Forced closed in default

**Modifying CIMOM configuration properties**

To manage the CIMOM configuration properties, use the `cimconfig` utility.

Open the `cimconfig` utility in a command window. The utility is located in the following directory:

*C:\Program Files\Hewlett-Packard\pegasus_home\bin*

Enter `cimconfig --help` for a list of utility options.

Following are the forms of the `cimconfig` utility:

- The first gives you the current, planned, and default value of a specific configuration property.
- The second allows you to set a specific value for the current and planned value of a configuration property.
- The third allows you to reset the current and planned values of the specific configuration property to its default value.
- The fourth allows you to list all the configuration properties.

Use the `-c` or `-p` option to list all the current and planned configuration property names and values. If you do not specify an option, the `cimconfig` command displays a usage message.

Example: `cimconfig -s traceLevel=2`
Configuring the CIMOM port

To change the http port on which CIMOM runs:

1. Open a command window and navigate to the following directory:
   
   C:\Program Files\Hewlett-Packard\pegasus_home\bin

2. Enter cimconfig -s httpPort=5988 -p, where 5988 is a port that is available on the local system.

3. Restart the Pegasus CIM Object Manager service.
   
   CIMOM now runs on the port 5988.

To change the https port on which CIMOM runs:

1. Open a command window and navigate to the following directory:
   
   C:\Program Files\Hewlett-Packard\pegasus_home\bin

2. Enter cimconfig -s httpsPort=5989 -p, where 5989 is a port that is available on the local system.

3. Restart the Pegasus CIM Object Manager service.
   
   CIMOM now runs on the port 5989.

**NOTE:**

To find the available ports on the local system, run the `netstat -a` command in a command window.
5 Troubleshooting

This chapter describes known issues and suggested resolutions for troubleshooting the software installation.

HP Command View EVA

This section describes troubleshooting for HP Command View EVA.

Power failure during installation

If a power failure occurs during installation, complete the following procedure:

1. Insert the installation CD into the drive.
2. Open Windows Explorer and browse to the CD.
3. Double-click setup.exe.

One of the following windows opens:

- If the Windows registry was updated before the power failure, the InstallShield Wizard Welcome window for the Setup Maintenance program opens. Continue with step 4.
- If the Windows registry was not updated before the power failure, the standard InstallShield Wizard Welcome window opens. Proceed as you would for a new installation. See “Using the typical installation” on page 19 for instructions.

4. Select Repair.

The InstallShield wizard reinstalls all program components and completes the installation.

Power failure during removal

If a power failure occurs during removal, use Windows Add/Remove Programs to repair and then remove HP Command View EVA.

Deleting folders affects HP Command View EVA removal

When you install HP Command View EVA, the _unist and _jvm folders are added to the C:\Program Files\Compaq\SANworks\Element Manager for StorageWorks HSV directory. If you delete one or both of these folders and you attempt to remove HP Command View EVA, the removal will fail.

To resolve this issue, reinstall HP Command View EVA and perform the removal again.

Failed connection warning for uncabled controller host ports

If a direct connection between the array and a Windows server leaves a controller host port uncabled, the user interface may display an error. Specifically, the Connection state box on the Host Ports tab of the Controller Properties page may display Connection failed for an uncabled host port.

This situation may cause a persistent Attention indication in the Navigation pane. To prevent this, pull the GBICs from uncabled ports on the controller. If the system is already initialized, removing the GBICs will generate an associated one-time controller event. See HP StorageWorks Command View EVA user guide for more information about the user interface and events.
SMI-S EVA

This section provides troubleshooting information about installing and configuring SMI-S EVA.

SMI-S EVA was not installed

If you aborted the installation or removal of a previous SMI-S EVA version, certain files, registry keys, and services may be retained and prevent the installation of SMI-S EVA. Before installing SMI-S EVA:

1. Open Add/Remove Programs. Remove HP StorageWorks SMI-S EVA if it is listed.
2. Do one of the following:
   - If SMI-S EVA 5.0 or later was installed, delete the C:\Program Files\Hewlett-Packard\pegasus_home folder.
   - If an earlier version of SMI-S EVA was installed, delete the C:\Program Files\Hewlett-Packard\SMI-S folder.
3. Delete the hp StorageWorks SMI-S folder from the Windows registry.
4. Restart the server.
5. Install SMI-S EVA (see "Using the custom installation" on page 20).

**NOTE:**
Existing clients using the CIMOM client SDK must upgrade to the latest SDK, which is available in the C:\Program Files\Hewlett-Packard\HP Client SDK folder.

SMI-S EVA service does not start

In the Services window, verify that the HP StorageWorks SMI-S CIMServer service is running. If it is not running, select the service, and then click **Start**.

SMI-S EVA fails to retrieve data

If SMI-S EVA fails to retrieve data, determine if:

- The array managed by the management server is active or passive. If the array is passive, access to the array is limited; data is populated only for the enumerate instance of the StorageSystem call.
- The HP Command View EVA and the HP StorageWorks SMI-S CIMServer services are running on the server:
  Select **Start > Settings > Control Panel > Administrative Tools > Services** window. If either service is not running, select the service and click **Start**.
- The user name and password are correct. If the user name and password do not match the information entered in the cimuser utility when the account was created, a CIM_ERR_ACCESS_DENIED message appears.
This glossary defines terms that are used in this guide or are related to the software.

array
See storage system and virtual array.

client
An intelligent device that requests services from other intelligent devices. In the context of HP Command View EVA, a client is a computer that is used to access the software remotely using a supported browser.

default disk group
The disk group that is created when the array is initialized. The minimum number of disks the group can contain is eight. The maximum is the number of installed disks.

disk group
A named group of disks selected from all the available disks in an array. One or more virtual disks can be created from a disk group.

Data replication (DR) group
A logical group of virtual disks in a remote replication relationship with a corresponding group on another array.

Enterprise Virtual Array (EVA)
An HP StorageWorks disk array product that allows pooled disk capacity to be presented to hosts as one or more variably sized physical devices. An EVA consists of disks, controllers, cables, power supplies, and controller software. Storage system, virtual array, and storage array are other names for an EVA. See also virtual disk.

failover
An operation that reverses replication direction so that the destination becomes the source and the source becomes the destination. Failovers can be planned or unplanned and can occur between DR groups, managed sets, fabrics or paths, and array controllers.

general-purpose server
A server on which HP StorageWorks Enterprise Virtual Array (EVA) management software is installed, including HP Command View EVA and HP Replication Solutions Manager, if used. Other management servers are dedicated management servers, HP ProLiant Storage Server models, and the Storage Management Appliance. If there are multiple management servers in a SAN, two active instances of HP Command View EVA are allowed, but each array will only be managed by one instance. The active management server manages the array, while the standby management server takes control of the array if there is a failure on the active management server. There is only one active management server at a time for any given management zone in a SAN.

host
A computer that runs user applications and uses (or potentially uses) one or more virtual disks that are created and presented by the array controller.

management server
A server on which HP StorageWorks Enterprise Virtual Array (EVA) management software is installed, including HP Command View EVA and HP Replication Solutions Manager, if used. A dedicated management server runs EVA management software exclusively. Other management servers are general-purpose servers, HP ProLiant Storage Server models, and the Storage Management Appliance. If there are multiple management servers in a SAN, two active instances of HP Command View EVA are allowed, but each array will only be managed by one instance. The active management server manages the array, while the standby management server takes control of the array if
there is a failure on the active management server. There is only one active
management server at a time for any given management zone in a SAN.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>near-online storage</td>
<td>On-site storage of data on media that takes slightly longer to access than online storage on high-speed disk drives.</td>
</tr>
<tr>
<td>online storage</td>
<td>An allotment of storage space that is available for immediate use, such as a peripheral device that is turned on and connected to a server.</td>
</tr>
<tr>
<td>snapclone</td>
<td>A copy that begins as a fully allocated snapshot and becomes an independent virtual disk. Applies only to the HP StorageWorks EVA.</td>
</tr>
<tr>
<td>snapshot</td>
<td>A nearly instantaneous copy of the contents of a virtual disk created without interruption of operations on the source virtual disk. Snapshots are typically used for short-term tasks such as backups.</td>
</tr>
<tr>
<td>Storage area network (SAN)</td>
<td>A network of storage devices and the initiators that store and retrieve information on those devices, including the communication infrastructure.</td>
</tr>
<tr>
<td>storage array</td>
<td>General term for an EVA.</td>
</tr>
<tr>
<td>Storage Management Appliance (SMA)</td>
<td>An HP hardware-software product designed to run SAN management applications such as HP Command View EVA and HP Replication Solutions Manager.</td>
</tr>
<tr>
<td>storage system</td>
<td>An EVA. See also virtual array.</td>
</tr>
<tr>
<td>Storage System Scripting Utility (SSSU)</td>
<td>An HP StorageWorks command interface used to configure and control EVAs.</td>
</tr>
<tr>
<td>unique universal identifier (UUID)</td>
<td>A unique 128-bit identifier for each component of an array. UUIDs are internal system values that users cannot modify.</td>
</tr>
<tr>
<td>virtual array</td>
<td>General term for an EVA.</td>
</tr>
<tr>
<td>Virtual Controller Software (VCS)</td>
<td>The HP StorageWorks Enterprise Virtual Array controller software that manages all aspects of array operation, including communication with HP Command View EVA.</td>
</tr>
<tr>
<td>virtual disk</td>
<td>Variable disk capacity that is defined and managed by the array controller and presentable to hosts as a disk.</td>
</tr>
</tbody>
</table>
## Index

<table>
<thead>
<tr>
<th>A</th>
<th>audience, 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>browser settings, 12</td>
</tr>
<tr>
<td></td>
<td>Internet Explorer, 13</td>
</tr>
<tr>
<td></td>
<td>Mozilla, 15</td>
</tr>
<tr>
<td></td>
<td>refresh, 16</td>
</tr>
<tr>
<td>C</td>
<td>configuring SMI-S EVA</td>
</tr>
<tr>
<td></td>
<td>EVApplier.properties file, 29</td>
</tr>
<tr>
<td></td>
<td>conventions document, 8</td>
</tr>
<tr>
<td>D</td>
<td>document conventions, 8</td>
</tr>
<tr>
<td></td>
<td>related documentation, 7</td>
</tr>
<tr>
<td></td>
<td>documentation HP web site, 7</td>
</tr>
<tr>
<td></td>
<td>providing feedback, 9</td>
</tr>
<tr>
<td>F</td>
<td>feedback, 9</td>
</tr>
<tr>
<td>H</td>
<td>help obtaining, 9</td>
</tr>
<tr>
<td></td>
<td>HP technical support, 9</td>
</tr>
<tr>
<td></td>
<td>HP Command View EVA installing, 19</td>
</tr>
<tr>
<td></td>
<td>troubleshooting, 35</td>
</tr>
<tr>
<td>I</td>
<td>installation SMI-S EVA, 27</td>
</tr>
<tr>
<td></td>
<td>typical, 19</td>
</tr>
<tr>
<td></td>
<td>Internet Explorer settings, 13</td>
</tr>
<tr>
<td>M</td>
<td>management server types, 12</td>
</tr>
<tr>
<td></td>
<td>Mozilla settings, 15</td>
</tr>
<tr>
<td>P</td>
<td>power failure during installation, 35</td>
</tr>
<tr>
<td></td>
<td>during removal, 35</td>
</tr>
<tr>
<td></td>
<td>prerequisites installation, 11</td>
</tr>
<tr>
<td></td>
<td>SMI-S EVA, 11</td>
</tr>
<tr>
<td></td>
<td>software suite, 11</td>
</tr>
<tr>
<td>R</td>
<td>related documentation, 7</td>
</tr>
<tr>
<td></td>
<td>removing software suite, 23</td>
</tr>
<tr>
<td>S</td>
<td>setting credentials, 17</td>
</tr>
<tr>
<td></td>
<td>SMI-S EVA EVApplier.properties file, 29</td>
</tr>
<tr>
<td></td>
<td>troubleshooting, 36</td>
</tr>
<tr>
<td></td>
<td>installing, 27</td>
</tr>
<tr>
<td></td>
<td>software suite removing, 23</td>
</tr>
<tr>
<td></td>
<td>upgrading, 22</td>
</tr>
<tr>
<td></td>
<td>Subscriber’s Choice, HP, 9</td>
</tr>
<tr>
<td>T</td>
<td>technical support HP, 9</td>
</tr>
<tr>
<td></td>
<td>service locator web site, 9</td>
</tr>
<tr>
<td></td>
<td>troubleshooting power failure, 35</td>
</tr>
<tr>
<td></td>
<td>SMI-S EVA, 36</td>
</tr>
<tr>
<td>U</td>
<td>upgrading HP Command View EVA, 22</td>
</tr>
<tr>
<td></td>
<td>HP Command View EVAPerf, 23</td>
</tr>
<tr>
<td></td>
<td>minimum required versions, 22</td>
</tr>
<tr>
<td>W</td>
<td>web sites HP, 9</td>
</tr>
<tr>
<td></td>
<td>HP documentation, 7</td>
</tr>
<tr>
<td></td>
<td>HP Subscriber’s Choice for Business, 9</td>
</tr>
</tbody>
</table>