

HP StorageWorks

Command View TL SMI-S Provider

installation instructions



390736-001

Part number: 390736-001
First edition: March 2005



© Copyright 2005 Hewlett-Packard Development Company, L.P.

Hewlett-Packard Company makes no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Hewlett-Packard shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material.

This document contains proprietary information, which is protected by copyright. No part of this document may be photocopied, reproduced, or translated into another language without the prior written consent of Hewlett-Packard. The information is provided "as is" without warranty of any kind and is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Microsoft®, Windows®, Windows NT®, and Windows® XP are U.S. registered trademarks of Microsoft Corporation.

UNIX® is a registered trademark of The Open Group.

Java™ is a US trademark of Sun Microsystems, Inc.

Command View TL SMI-S Provider installation instructions

About this document

This document summarizes the process for installing HP StorageWorks Command View for Tape Libraries SMI-S Provider in conjunction with HP StorageWorks Command View TL 1.5.

These installation instructions contain the following major topics:

- [Introduction](#), page 4
- [Installing the Command View TL Provider](#), page 4
- [Starting and stopping the Command View TL Provider](#), page 5
- [Configuring the Command View TL Provider](#), page 5
- [SSL support](#), page 9
- [Troubleshooting](#), page 11

Intended audience

This document is intended for customers using Command View TL and the Command View TL Provider.

Accessing future product updates

HP strongly recommends that customers sign up online using the Subscriber's choice web site at:

<http://www.hp.com/go/e-updates>.

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

Other documentation

For information about Command View TL, see the *HP StorageWorks Interface Manager and Command View TL user guide*.

Additional documentation, including whitepapers and best-practices documents, is available via the HP web site at: <http://www.hp.com>.

Introduction

The Storage Management Initiative (SMI) was created by the Storage Networking Industry Association (SNIA) to develop and standardize interoperable storage management technologies and aggressively promote them to the storage, networking and end user communities. For more information about SNIA and the SMI, see <http://www.snia.org/smi/home>.

The HP StorageWorks Command View TL Provider follows the Storage Management Initiative Specification (SMI-S) and provides an interface for SMI-S compliant applications to manage HP StorageWorks tape libraries.

This document provides procedures for installing the Command View TL Provider for HP StorageWorks Command View TL 1.5.

The Command View TL Provider is loaded by the SMI-S CIMOM service, which loads all registered SMI-S CIMOM providers. To manually start and stop the Command View TL Provider, see [Starting and stopping the Command View TL Provider](#), page 5.

Prerequisites

The Command View TL Provider is installed as part of the Command View TL installation process. The prerequisites for the Command View TL Provider are the same as for Command View TL.

For servers, Command View TL requires a management station (server) with a minimum of:

- Pentium IV 1.6-GHz, 512-MB RAM.
- 10/100 Base-T network card (a static IP address is recommended).
- Microsoft® Windows® 2000 Professional or Server edition SP3, Windows XP Professional.

For clients, Command View TL requires the following:

- Microsoft Internet Explorer 6.0 SP1 or later, or Netscape Navigator v6.2 or later. Ensure that Java™ support is enabled in the browser.
- An Internet connection is recommended so that Command View TL can receive firmware and software release information automatically from the HP Support web site.

Installing the Command View TL Provider

The Command View TL Provider is installed during the Command View TL installation procedure.

If you have multiple Command View management stations set up, and you want to use the Command View TL Provider to retrieve information about a library, you must install the Command View TL Provider on the same management station that will be used to manage the library.

NOTE: If you are upgrading from a previous version of Command View TL (Command View ESL prior to 1.5), follow the procedure below to install the new version over the old version. All previous settings (device list, support tickets, proxy settings and so forth) are migrated during the upgrade.

1. Insert the Command View TL software CD into the CD-ROM drive of the designated management station.
2. If autorun is disabled on the CD-ROM drive, locate and double-click `setup.exe` on the CD.
3. Follow the instructions on the screen to complete the installation. If you choose the Typical installation option, then the Command View TL Provider (referred to as the *SMIS Tape Provider* in the installation wizard) is installed automatically. If you choose the Custom installation option, be sure to select **Command View TL** and **SMIS Tape Provider** on the *Select Features* page of the installation wizard.

NOTE: If you use the Custom installation option to install Command View TL without installing the SMIS Tape Provider and you later decide to install the SMIS Tape Provider, you must first uninstall Command View TL and then reinstall it.

For more information about Command View TL, see the *HP StorageWorks Interface Manager and Command View TL user guide*.

Verifying the Command View TL Provider installation

To check the Command View TL Provider installation, do either of the following:

NOTE: These steps only apply if no other SMI-S provider is installed.

- Verify that the HP StorageWorks SMI-S CIMOM service is installed.
- or -
- Verify the directory structure.

To verify that the HP StorageWorks SMI-S CIMOM service is installed:

1. Select **Start > Settings > Control Panel > Administrative Tools > Services** to open the Services applet.
2. Locate the `hpSMISCIMOM` service (the display name is *hp StorageWorks SMI-S CIMOM*).

To verify the directory structure, check that the following directories were created:

- `C:\Program Files\Hewlett-Packard\SMI-S\cimom`
- `C:\Program Files\Hewlett-Packard\SMI-S\TapeProvider`

Uninstalling the Command View TL Provider

To uninstall the Command View TL Provider, use the *Add or Remove Programs* applet on the Windows Control Panel. The Command View TL Provider can only be uninstalled by uninstalling Command View TL. When Command View TL is uninstalled, the Command View TL Provider is also uninstalled.

1. Select **Start > Control Panel > Add or Remove Programs**.
2. Locate and select the entry for HP Command View TL.
3. Click **Change/Remove** and follow the prompts.

Starting and stopping the Command View TL Provider

You can manually start and stop the Command View TL Provider by starting or stopping the `hpSMISCIMOM` service from the Services applet. However, stopping the `hpSMISCIMOM` service causes all of the SMI-S CIMOM providers that are installed to be stopped. It is not possible to stop a single provider without disturbing all of the other installed providers. Restarting the `hpSMISCIMOM` service causes all SMI-S providers to be reinitialized.

To start or stop the `hpSMISCIMOM` service:

1. Select **Start > Settings > Control Panel > Administrative Tools > Services** to open the Services applet.
2. Locate and select the `hpSMISCIMOM` service (the display name is *hp StorageWorks SMI-S CIMOM*).
3. Click **Start** or **Stop**.

Configuring the Command View TL Provider

The configuration files for setting up the Command View TL Provider service are located in the following directories where SMI-S is installed:

- `C:\Program Files\Hewlett-Packard\SMI-S\cimom`
- `C:\Program Files\Hewlett-Packard\SMI-S\TapeProvider\config`

Modify the configuration files as indicated in [Table 1](#).

Table 1 Configuration files

File	Description
HPTL_provider.properties	Configures the provider.
hptl.provider	Configures the authorization modules and audit logging features.
cim.properties	Configures CIMOM related parameters for enabling SSL and other features.

Use a text editor to manually edit the configuration files. After editing the configuration parameters, restart the Command View TL Provider.

HPTL_provider.properties

The HPTL_provider.properties file is located in the C:\Program Files\Hewlett-Packard\SMI-S\TapeProvider\config directory. Configure the properties as indicated in [Table 2](#).

Table 2 HPTLprovider.properties file

Property	Description
DEBUG	<p>Enables the debugging option for the Command View TL Provider-specific implementation when set to True.</p> <p>Disables the debugging option when set to False. The default setting is False.</p> <p>All debug files are stored in C:\Program Files\Hewlett-Packard\SMI-S\TapeProvider\log.</p>
OUTPUT_FILE_NAME	Specifies the name of the output debug file. The default file name is Tape.log.
OUTPUT_TO_FILE	<p>Enables the debugging output to be directed a file when set to True. Set OUTPUT_TO_FILE to True if you want a log file to be created when an exception occurs in the Tape Provider code. You should also set this property to True if you want debug information written to a log file (by setting the DEBUG property to True). The default setting is True.</p> <p>When set to False, no file is created.</p>
FILE_SIZE	Specifies the maximum size of the debug file. The value must be between 64 K and 1 MB. The default value is 64 K.
NUM_FILES	Specifies the maximum number of debug files that will be generated. For example, setting FILE_SIZE to 64 K and NUM_FILES to 5 would result in five debug files being written. After the maximum limits for FILE_SIZE and NUM_FILES are reached, the oldest debug file is overwritten.

Table 2 HPTLprovider.properties file (continued)

Property	Description
TRACE_LEVEL	Specifies the detail level of the debugging statements. Valid values are <i>ALL</i> , <i>INFO</i> , <i>MEDIUM</i> , <i>HIGH</i> , <i>WARN</i> , <i>CRITICAL</i> , and <i>EXCEPTION</i> .
GET_DATA_AT_STARTUP	Specifies whether the Command View TL Provider fetches data from Command View TL when the hpSMISCIMOM service is started. When set to True, the Command View TL Provider fetches data on startup. When set to False, only the data requested by the CIM client is obtained from Command View TL.

HPTL.provider file

The `hptl.provider` file is located in the `C:\Program Files\Hewlett-Packard\SMI-S\cimom` directory. Configure the properties as indicated in [Table 3](#).

Table 3 hptl.provider file

Field	Description
AUTHORIZATION_MODULE	Specifies the authorization mechanism to be used. The value is the class name of the authorization module. The <i>BasicAuthorization</i> module is the default module and is the only module currently supported by the Command View TL Provider. Do not change this value.
AUDIT_LOGGER	Specifies the class name as the location of the audit log implementation. <i>AuditLogSMIS</i> is the default implementation and is the only implementation currently supported by the Command View TL Provider. Do not change this value.
AUDIT_LOG_FILENAME	Specifies the file name to record audit log information. The default file name is <code>hptl_audit.log</code> .

Cim.properties file

The `cim.properties` file is located in the `C:\Program Files\Hewlett-Packard\SMI-S\cimom` directory. Configure the properties as indicated in [Table 4](#).

Table 4 cim.properties file

Property	Description
<code>EnableSSL</code>	Enables SSL when set to True. The default value is True.
<code>serverDebugFile</code>	Specifies the name and location of the debug file. CIMOM logs debug information to this file. The default value is <code>serverout.txt</code> .

CAUTION: Do not modify any parameter that is not listed in the table.

UserAccountsManager.bat

User accounts are organized into groups, and a set of permissions are assigned to each group. To manage the user accounts, use the script file (`UserAccountsManager.bat`) located in the home directory. This is the directory where the CIM Object Manager is installed. Typically, it is in `C:\Program Files\Hewlett-Packard\SMI-S\cimom`. To find the list of switch options supported, run this script file with the `-h` option.

Default groups

Currently, the available groups are *Administrator* and *User*. There are no commands to add or remove the groups. User accounts in the *Administrator* group have complete control of all operations. User accounts in the *User* group can only execute read-only operations.

The CIM Object Manager comes preconfigured with the following users in the *Administrator* and *User* Groups:

- Administrator group
 - Username = `Administrator`; Password = `Administrator`
 - or-
 - Username = `administrator`; Password = `administrator`
- User group
 - Username = `user`, Password = `user`

Listing groups and users

To list the available groups and users, execute this command:

```
$ UserAccountsManager -LG
```

NOTE: There are no other input parameters other than `-LG` to list the available groups and users.

Adding users

To add a user, execute this command:

```
$ UserAccountsManager -AU -G <Group> -U <UserName> -P <Password>
```

Where:

- *<Group>* is the group name for the user.
- *<UserName>* is the user name.
- *<Password>* is the password for the user.

Example:

```
$ UserAccountsManager -AU -G Administrator -U Tom -P Vanilla2
```

NOTE: The parameter *Group* is one of the groups listed by the *-LG* option. A user name can exist in only one group.

Changing user password

To change the user password, execute this command:

```
$ UserAccountsManager -CP -U <UserName> -O <OldPassword> -N <NewPassword>
```

Where:

- *<UserName>* is the user name.
- *<OldPassword>* is the old password of the user.
- *<NewPassword>* is the new password for the user.

Example:

```
$ UserAccountsManager -CP -U Tom -O Vanilla2 -N Chocolate3
```

Removing a user

To remove a user, execute this command:

```
$ UserAccountsManager -DU -U <UserName>
```

Where:

- *<UserName>* is the user name.

Example:

```
$ UserAccountsManager -DU -U Tom
```

SSL support

By default, SSL is enabled with the Command View TL Provider. The Provider uses an SSL server-side certificate to enable clients to securely communicate with the SMI-S server. A self-signed certificate (*hpSMIS.cert*) is packaged with the Command View TL Provider. The certificate is located in the following directory:

```
C:\Program Files\Hewlett-Packard\SMI-S\cimom
```

The certificate can be replaced with a different certificate by the administrator. Retain the certificate name (*hpSMIS.cert*). A client that wants to use SSL must copy the certificate from *C:\Program Files\Hewlett-Packard\SMI-S\cimom* and put it into its trust store.

A trust store is a repository of trusted certificates that are recognized by the client program. When the SMI-S certificate is *trusted* by a client program, the client communicates with the SMI-S server using SSL. SSL helps secure the client server communication by providing clients with the ability to authenticate the entity claiming to be the SMI-S server, and also by protecting the integrity of the transmitted data.

Port occupation

The CIMOM starts on port 5988 when SSL is disabled and 5989 when SSL is enabled. If these ports are not available, the CIMOM uses the first available private port starting from 49152.

Enabling SSL

To enable SSL, set the *EnableSSL* property in the `cim.properties` file to True. This file is located in the following directory:

```
C:\Program Files\Hewlett-Packard\SMI-S\cimom.
```

When *EnableSSL* is set to True, all client connections use the https protocol. After changing this property, you must restart the Command View TL Provider for the change to take effect.

If the client is implemented using Java, complete the following procedure to issue the certificate:

1. Import the server certificate into the client trust store:
 - a. Copy the server certificate to the client system.
 - b. Use the Java keytool to import the certificate into the client trust store.

```
$ keytool -import -alias hpsmis -file hpSMIS.cert -keystore mytruststore
```
2. Enter a password at the prompt.

NOTE: This password is required for modifying *mytruststore* in the future. If a trust store does not currently exist, the keytool creates the trust store and then imports the specified certificate.

3. To specify a trust store, execute the following command in the client application command line:

```
-Djavax.net.ssl.trustStore
```

Example:

```
$ java -Djavax.net.ssl.trustStore=mytruststore <MyClient> <system> root/cimv2  
<cimomport> ssl
```

4. If the client application is written to update the `truststore` file programmatically, you must type the password (the one used to create the trust store):

```
-Djavax.net.ssl.trustStorePassword
```

Example:

```
$ java -Djavax.net.ssl.trustStore=mytruststore  
-Djavax.net.ssl.trustStorePassword=wbem01 <MyClient> <system> root/cimv2  
<cimomport> ssl
```

Viewing certificates using the keytool command

To view certificates in a certificate file, execute this keytool command:

```
$keytool -printcert -file hpSMIS.cert
```

Viewing all certificates using the keytool command

To view all the certificates in a truststore, execute this keytool command:

```
$keytool -list -v -keystore mytruststore
```

Troubleshooting

Table 5 Troubleshooting

Item	Action
The Command View TL Provider fails to start	<ul style="list-style-type: none">• Check the service registration.• Check the event log details.
The Command View TL Provider does not respond	<ul style="list-style-type: none">• Check to see if the directory <code>C:\Program Files\Hewlett-Packard\SMI-S\cimom\persistence\classes\root\HPTL</code> is empty. If the directory is empty, load the MOFs by invoking the batch file <code>LoadTapeMofs.bat</code> located in <code>C:\Program Files\Hewlett-Packard\SMI-S\TapeProvider</code>.• Verify that the port that the client is querying and the port on which the Command View TL Provider is running are the same.• Verify that the host name used in the CIM request is the same as the name of the management station where the SMI-S Tape Provider is installed.
The Command View TL Provider fails to retrieve data	Ensure that the management station where the Command View TL Provider is installed is managing that particular tape library. Command View TL should list the library as <i>Ready to Manage</i> .

