Notes, cautions, and warnings

NOTE: A NOTE indicates important information that helps you make better use of your computer.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.
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Introduction

⚠️ CAUTION: See the Safety, Environmental, and Regulatory Information document for important safety information before following any procedures listed in this document.

An enclosure containing physical disks accessed through EMMs (Enclosure Management Modules) is called a storage enclosure. A storage enclosure includes various hardware components, such as physical disks, EMMs, fans, and power supply units (PSUs).

One or more host servers attached to the storage enclosure can access the data on the storage enclosure. You can also establish multiple physical paths between the hosts and the storage enclosure so that loss of any single path (for example, through failure of a host server port) does not result in loss of access to data on the storage enclosure.

The storage enclosure is managed by the Dell Storage PowerTools Server Hardware Manager (SHM) software running on a host server. On the host server system, the management software and the storage enclosure communicate management requests and event information by using in-band SAS connections.

Terminology

This document familiarizes you with the functions of the SHM software. The software is comprised of two major components:

- **Storage Enclosure CLI (secli)** — This component provides a command line interface (CLI) used to obtain device and status information of storage enclosure components. Also, the secli is used for firmware update of Enclosure Management Modules (EMMs) and hard drives and solid-state drives (SSDs) within the enclosure.

- **Server Hardware Manager Monitor** — This component runs continuously, monitoring and logging the status of enclosure components, including EMMs, drives, PSUs, and fan modules.

The document is organized into two major sections. The first section of this document describes the CLI commands required to perform certain common task within the storage enclosure. The second section is a reference to all CLI commands ordered by type.

Other information you may need

⚠️ WARNING: See the safety and regulatory information that shipped with your system. Warranty information may be included within this document or as a separate document.

⚠️ NOTE: All the documents, unless specified otherwise, are available at Dell.com/dsmsmanuals.

Before you begin, ensure that you have the following documentation:
- For Dell Storage MD1400 series:
  - *The Dell Storage MD1400 and MD1400 Getting Started With Your System* — Provides an overview of setting up the MD1400 series storage.
  - *The Dell Storage MD1400 or MD1420 Enclosures Hardware Owner’s Manual* — Provides information about system features and describes troubleshooting the system and installing or replacing system components.

- For Dell PowerVault MD3060e series:
  - *Dell PowerVault MD3060e Storage Enclosure Owner’s Manual* — Provides information about system features and describes troubleshooting the system and installing or replacing system components.
  - *Setting Up Your Dell PowerVault MD3060e Storage Enclosure* — Provides an overview of setting up the Dell PowerVault MD3060e.

**NOTE:** Always check for updates at [Dell.com/dsmsmanuals](https://www.dell.com/dsmsmanuals) and read through the updates first because they often supersede information in other documents.
About the Dell Storage enclosure

This chapter describes the storage enclosure concepts, which help in configuring and operating the Dell storage enclosures. The secli uses a number of terms to describe objects on which the software performs actions.

NOTE: For detailed descriptions about the enclosure features, see the Owner’s Manual for the specific enclosure.

Dell PowerVault MD3060e

Front panel features and indicators

![Diagram of the front panel features]

Figure 1. Front-panel features

1. drawers (5)  
2. drawer release latches (2 per drawer)  
3. physical disk slot numbering  
4. drawer indicator LEDs  
5. front-panel indicators
Back-panel features and indicators

Figure 2. Back-panel features
1. Cooling Fans (2) 2. EMMs (2)
3. Power Supply Units (2)

Dell Storage MD1400 series

This section briefly describes the features of Dell Storage MD1400 series systems. For more information about using the Dell Storage MD 1400 series products, see documentation available at Dell.com/dsmsmanuals.

Front panel features and indicators

Figure 3. Front panel features and Indicators—Dell Storage MD1400
**Server Hardware Manager installation**

**MPIO (Multipath I/O)**

You must configure Windows MPIO for the SHM software to recognize the hardware. For more information about MPIO configuration procedures, see the *Dell Storage with Microsoft Storage Spaces Best Practices* available at [Dell.com/dsmsmanuals](http://Dell.com/dsmsmanuals).
Graphical installation

1. Download the SHM software installation package from Dell.com/dsmsmanuals.
2. Go to the download directory of the installer.
3. Double-click the installation program — ServerHardwareManager-x.x.x.x-windows-installer.exe.
4. Complete the on-screen instructions and accept the End User License Agreement.

NOTE: Installation of the SNMP monitoring service is optional.

After successful installation, start an elevated command line interface (CLI), and then run the secli commands at the CLI.

Silent installation

1. Download the SHM software installation package from Dell.com/dsmsmanuals.
2. Run appropriate commands at the CLI as an administrator.

   NOTE: The CLI must be an administrator prompt for proper use of the CLI.
3. Go to the download directory of the extracted installer.
4. Run the installation program by running the command:
   
   ServerHardwareManager-x.x.x.x-windows-installer.exe --mode unattended
   
   or, modify options.installer and run with switch --options C:\path\to\installer.options for a non-default install.

   This command installs the SHM software with all the default settings. The default installation directory is C:\Program Files\Dell\ServerHardwareManagement.
5. Accept all End User License Agreements.

   NOTE: There is no Windows console mode installation.

Uninstalling Server Hardware Manager

Command line interface

1. Run the CLI as an Administrator.
2. Go to the installation directory.
   
   The default directory is C:\Program Files\Dell\ServerHardwareManager.
3. Run the uninstallation program, ServerHardwareManager_uninstall.exe. For silent uninstallation: ServerHardwareManager_uninstall.exe --mode unattended
Windows Explorer

1. To uninstall a software application, on the taskbar, click Start, click Control Panel, and then click Programs and Features.
2. Click the program ServerHardwareManager.
3. Click Uninstall.
4. Complete the on-screen instructions to complete the uninstallation.
Storage enclosure command line interface

This guide is intended for system administrators, developers, and engineers who use the Storage Enclosure Command Line Interface (secli) and its associated commands. For more information, see the hardware and software manuals that shipped with the system.

**NOTE:** CLI commands do not have interactive warnings for destructive commands.

**NOTE:** Always check for updates at [Dell.com/dsmsmanuals](http://Dell.com/dsmsmanuals) and read through the update first because they often supersede the information in other documents.

The Storage Enclosure CLI is a software application that enables storage installers, developers, and engineers to monitor and update storage enclosures and drives. Using the command line interface, commands can be run from an operating system prompt, such as the Microsoft Windows command prompt.

Use the secli to perform the following functions:

- Display status information about the objects in the system.
- Update storage device firmware (EMM, drives).

Using the command line interface

A CLI command consists of the following elements:

- Runable name — secli
- Command
- Path to the target
- Additional arguments

The following syntax is the general form of a CLI command:

```bash
secli command [path-to-target-object] {additional-arguments}
```

Where,

- `secli` — invokes the command-line interface.
- `command` — is the action the utility runs.
path-to-target-object — is the list of arguments that defines the target object command applies to.

Command syntax structure

The commands for the Storage Enclosure CLI have a number of mandatory and optional input parameters. Those parameters, in turn, can also have more than one valid attribute. However, each parameter can accept only one valid value for each run. This section outlines the symbols used in the syntax of each command in this document and the syntax layout in the secli help.

Table 1. Command syntax structure

<table>
<thead>
<tr>
<th>Input Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>b</td>
</tr>
<tr>
<td>italicized-words</td>
<td>Input value</td>
</tr>
<tr>
<td>[...]</td>
<td>Optional input</td>
</tr>
<tr>
<td>&lt;&gt;</td>
<td>Enclosed input value is required for parameter</td>
</tr>
</tbody>
</table>

Parameter glossary

Table 2. Parameter list

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Description</th>
<th>Valid Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>-a</td>
<td>Represents target adapter</td>
<td>SAS WWID or Adapter Index</td>
</tr>
<tr>
<td>-d</td>
<td>Represents target drive</td>
<td>WWN (worldwide name), Enclosure Slot Index, Drawer Slot Index, Serial Number, or Drive OS Path.</td>
</tr>
<tr>
<td>-w</td>
<td>Represents target enclosure drawer</td>
<td>Drawer Index (0, 1, 2, 3, or 4)</td>
</tr>
<tr>
<td>-s</td>
<td>Represents target enclosure slot</td>
<td>Enclosure Slot Index</td>
</tr>
<tr>
<td>-startDate</td>
<td>Target start date</td>
<td>StartDate in the format of MM/DD/YY</td>
</tr>
<tr>
<td>-endDate</td>
<td>Target end date</td>
<td>EndDate in the format of MM/DD/YY</td>
</tr>
<tr>
<td>-event</td>
<td>Type of event to view from the event log</td>
<td>EventType (INFO, CRITICAL, ERROR, WARN)</td>
</tr>
<tr>
<td>-count</td>
<td>Number of events to view</td>
<td>LatestEventCount numeric value (1-1000)</td>
</tr>
<tr>
<td>-outputformat</td>
<td>Format of output data from secli command</td>
<td>SupportedOutputFormats (xml, json)</td>
</tr>
<tr>
<td>-enc</td>
<td>Represents target physical enclosure</td>
<td>Enclosure Index or WWN</td>
</tr>
<tr>
<td>Parameter Name</td>
<td>Description</td>
<td>Valid Values</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------------------------------------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>-emm</td>
<td>Represents target EMM</td>
<td>WWN or EMM Index</td>
</tr>
<tr>
<td>-file</td>
<td>Represents target firmware file for updating a drive or EMM</td>
<td>Firmware update file location and name</td>
</tr>
</tbody>
</table>

Table 3. Description of values for parameters

<table>
<thead>
<tr>
<th>Description</th>
<th>Valid for Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolute Path to Firmware File</td>
<td>Valid value for -file parameter</td>
</tr>
<tr>
<td>Adapter Index</td>
<td>Valid value for -a parameter</td>
</tr>
<tr>
<td>SAS WWID</td>
<td>Valid value for -a parameter</td>
</tr>
<tr>
<td>Device ID</td>
<td>Valid value for -d and -emm parameters</td>
</tr>
<tr>
<td>Drawer Index</td>
<td>Valid value for -w parameter</td>
</tr>
<tr>
<td>Encl Index (Enclosure Index)</td>
<td>Valid value for -enc parameter</td>
</tr>
<tr>
<td>WWN (Worldwide Name)</td>
<td>Valid value for -d, -emm, and -enc parameters</td>
</tr>
<tr>
<td>Enclosure Slot Index</td>
<td>Valid value for -d and -s parameter</td>
</tr>
<tr>
<td>Drawer Slot Index</td>
<td>Valid value for -d parameter</td>
</tr>
<tr>
<td>EMM Index (Enclosure Management Module Index)</td>
<td>Valid value for -emm parameter</td>
</tr>
<tr>
<td>StartDate</td>
<td>Valid value for -startDate</td>
</tr>
<tr>
<td>EndDate</td>
<td>Valid value for -endDate</td>
</tr>
<tr>
<td>EventType</td>
<td>Valid value for -event</td>
</tr>
<tr>
<td>LatestEventCount</td>
<td>Valid value for -count</td>
</tr>
<tr>
<td>SupportedOutputFormats</td>
<td>Valid value for -outputformat</td>
</tr>
<tr>
<td>Serial Number</td>
<td>Valid value for -d</td>
</tr>
</tbody>
</table>

Unique identifier for the physical disk drive.
Managing your storage enclosure

To keep the EMM firmware and drives up-to-date, there are specific commands you must run and procedures you must complete. There are key commands that display crucial information required for other command to be run properly.

NOTE: Ensure the console window is able to fit at least 150 characters for each line to view the output properly.

NOTE: The output screenshots shown in the following procedures are examples and may be slightly different from the actual output depending on the version of your Server Hardware Management Software.

Identifying installed HBAs

Many secli commands require a respective adapter as an input parameter. To get the proper values for this parameter, run the following command:

```bash
secli list adapters
```

The following output is displayed:

<table>
<thead>
<tr>
<th>Adapter</th>
<th>ProductName</th>
<th>SAS WWID</th>
<th>FW. Rev</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SAS9207-8e</td>
<td>5DC603EC0825B66D</td>
<td>20.00.00</td>
</tr>
<tr>
<td>1</td>
<td>SAS9207-8e</td>
<td>5DC603EC0825B66D</td>
<td>20.00.00</td>
</tr>
<tr>
<td>2</td>
<td>SAS9207-8e</td>
<td>5DC603EC0825B66D</td>
<td>20.00.00</td>
</tr>
</tbody>
</table>

Note and record the values displayed in the Adapter# column, because this represents the Adapter Index and also the WWID/SASAddresses column for the respective supported HBAs.

Identifying enclosures and EMMs

Identifying enclosures

For other management actions, you must provide information about a respective enclosure or EMM. These values are presented with respect to a specific adapter value provided.

To identify the attached enclosures to a specific adapter, run the following command:

```bash
secli list enclosures -a=<(SASAddress | AdapterIndex)>
```

Output

For enclosures:
Identifying EMMs

To identify the attached EMMs to a specific adapter, run the following command:

```
secli list emms -a=<(SASAddress | AdapterIndex)>
```

For EMMs:

```
+---------+---------------+----------+----------+----------+
| Slot#   | Enclosure WWN | Name     | Vendor   | Status   | Rev |
|---------+---------------+----------+----------+----------+-----|
|         | 50080e5204ea3000 | MD3060e  | DELL     | OK       | 0399|
|         | 50080e520545d000 | MD3060e  | DELL     | OK       | 0399|
```

Notate the Enclosure Slot Index and the WWN (worldwide name) columns. These values are required for necessary command parameters.

Identifying drawers

To verify the status and number of drives in the drawers of an enclosure, run the following command:

```
secli list drawers -a=<(SASAddress | AdapterIndex)> -enc=<(WN | EnclIndex)>
```

```
+---------+-------+----------+----+
| Drawer# | Status| Drawer Open| #HDD|
|---------|-------+-----------+----|
| 0       | OK    | NO        | 4  |
| 1       | OK    | NO        | 4  |
| 2       | OK    | NO        | 8  |
| 3       | OK    | NO        | 12 |
| 4       | OK    | NO        | 12 |
```

Identifying drives

When identifying drives, there are other optional parameters that you can include to narrow the scope of the drives to obtain information from. You can identify drives from the adapter (all down-chain enclosures attached to a specified HBA), all the drives in a specific enclosure, or all the drives in a specified drawer in a specified enclosure. To get information about all the drives visible to an adapter, run the following command:

```
secli list drives -a=<(SASAddress | AdapterIndex)>
```

For all the drives visible to an adapter:
To get information about all the drives in a specific enclosure:

```
secli list drives -a=(SASAddress | AdapterIndex) -enc=(WWN | EnclIndex)
```

**Output**

For all the drives in a specific enclosure:

```
<table>
<thead>
<tr>
<th>Enclosure Slot</th>
<th>Drive Slot</th>
<th>Vendor</th>
<th>ProductId</th>
<th>Serial</th>
<th>Size</th>
<th>Rev</th>
<th>WWN</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>00 / 00</td>
<td>1AE0TE</td>
<td>ST3006400S</td>
<td>229E617V</td>
<td>2.77</td>
<td>E16</td>
<td>500b:005a:196c:1600</td>
</tr>
<tr>
<td>1</td>
<td>01 / 01</td>
<td>1AE0TE</td>
<td>ST3006400S</td>
<td>229E617V</td>
<td>2.77</td>
<td>E16</td>
<td>500b:005a:196c:1600</td>
</tr>
<tr>
<td>2</td>
<td>00 / 00</td>
<td>1AE0TE</td>
<td>ST3006400S</td>
<td>229E617V</td>
<td>2.77</td>
<td>E16</td>
<td>500b:005a:196c:1600</td>
</tr>
<tr>
<td>3</td>
<td>01 / 01</td>
<td>1AE0TE</td>
<td>ST3006400S</td>
<td>229E617V</td>
<td>2.77</td>
<td>E16</td>
<td>500b:005a:196c:1600</td>
</tr>
<tr>
<td>4</td>
<td>00 / 00</td>
<td>1AE0TE</td>
<td>ST3006400S</td>
<td>229E617V</td>
<td>2.77</td>
<td>E16</td>
<td>500b:005a:196c:1600</td>
</tr>
<tr>
<td>5</td>
<td>01 / 01</td>
<td>1AE0TE</td>
<td>ST3006400S</td>
<td>229E617V</td>
<td>2.77</td>
<td>E16</td>
<td>500b:005a:196c:1600</td>
</tr>
</tbody>
</table>
```

To get information about all the drives in a drawer within an enclosure:

```
secli list drives -a=(SASAddress | AdapterIndex) -enc=(WWN | EnclIndex) -w=<DrawerIndex>
```

**Output**

For all the drives in a drawer within an enclosure:

```
<table>
<thead>
<tr>
<th>Enclosure Slot</th>
<th>Drive Slot</th>
<th>Vendor</th>
<th>ProductId</th>
<th>Serial</th>
<th>Size</th>
<th>Rev</th>
<th>WWN</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>02 / 00</td>
<td>1AE0TE</td>
<td>ST3006400S</td>
<td>229E617V</td>
<td>2.77</td>
<td>E16</td>
<td>500b:005a:196c:1600</td>
</tr>
<tr>
<td>25</td>
<td>02 / 01</td>
<td>1AE0TE</td>
<td>ST3006400S</td>
<td>229E617V</td>
<td>2.77</td>
<td>E16</td>
<td>500b:005a:196c:1600</td>
</tr>
</tbody>
</table>
```

The relevant information to record from the `list drives` command are the Enclosure Slot Index and the WWN. These values are required to perform actions on a specific drive such as updating the firmware or making the LED of a drive to blink for identification purposes.

### Updating drives

You can update drive firmware by using the information provided from running other `secli` commands. The latest drive firmware for supported drives can be found at [Dell.com/dsmsmanuals](https://Dell.com/dsmsmanuals). Dell recommends stopping all I/O between the server and the attached enclosures containing the drives that you want to update.

To update all drives visible to a specified adapter:

```
secli update drive -a=(SASAddress | AdapterIndex) -file=<FW.FilePath>
```

To update all the drives in a specified enclosure:

```
secli update drive -a=(SASAddress | AdapterIndex) -enc=(WWN | EnclIndex) -file=<FW.FilePath>
```

To update all the drives in a specified drawer:

```
secli update drive -a=(SASAddress | AdapterIndex) -enc=(WWN | EnclIndex) -w=<DrawerIndex> -file=<FW.FilePath>
```

To update a single drive:

```
secli update drive -a=(SASAddress | AdapterIndex) -d=(WWN | EnclosureSlotIndex | DrawerSlotIndex) -file=<FW.FilePath>
```
A summary of the update process is displayed to you after the command completes running.

- **NOTE**: When attempting to update multiple drives, the specified firmware file is used on all drives within the scope of the command. Drives compatible with the firmware file are updated while incompatible drives fail gracefully.

- **NOTE**: If the firmware file path contains spaces, enclose the filepath in double quotation marks (" "). For example, `-file="C:\My Files\my firmware.fwh"

- **NOTE**: Only firmware files with the .fwh extension are supported for updating drives by using the secli.

### Update EMM firmware

1. Download the latest firmware package from [Dell.com/dsmsmanuals](Dell.com/dsmsmanuals).
2. Stop all I/O between the server and the attached enclosures containing the EMMs you want to update.
   - **NOTE**: After this update process begins, you may lose access to the drives or enclosure connected to the update target. The EMM does not respond to commands again until it is correctly updated and ready for use.
3. Run the following command:
   ```
   secli update emm -a=<(SASAddress | AdapterIndex)>-enc=<(WWN | EnclIndex)>-
   emm=<(WWN | EMMIndex)>-file=<FW.FilePath>
   ```
   - **NOTE**: The progress of the firmware transfer is indicated in the console.
4. The EMM updates the firmware and reboots.
   - **NOTE**: This process may take up to five minutes.
CLI reference

This section lists all the commands available for managing your storage enclosure.

Commands listed by type

Drive commands

Blink drive

Description

Helps visually locate the specified SCSI device by initiating a blink, or ending an existing blink session.

Command syntax

```
secli (blink drive | blinkdrive | bd) (-a=<SAS WWID | AdapterIndex>) [-enc=<WWN | EnclIndex>] [-w=<DrawerIndex>] [-d=<WWN | EnclosureSlotIndex | DrawerSlotIndex | Serial Number | Drive OS Path>] [-off] | [-d=<WWN | Serial Number | Drive OS Path>] [-off] | [-h])
```

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-a</td>
<td>Specify the adapter to use for the command. This can be either SASAddress or AdapterIndex.</td>
</tr>
<tr>
<td>-enc</td>
<td>Specify the enclosure to use for the command. This is either WWN or EnclIndex.</td>
</tr>
<tr>
<td>-w</td>
<td>Specify the drawer index used for the command.</td>
</tr>
<tr>
<td>-d</td>
<td>Specify the drive used for the command. This can be any of the following:</td>
</tr>
<tr>
<td></td>
<td>• WWN — Can be used anytime.</td>
</tr>
<tr>
<td></td>
<td>• Enclosure Slot Index — Use if drawer argument is not being used for the command.</td>
</tr>
<tr>
<td></td>
<td>• Drawer Slot Index (Index of the drive in the specific drawer) - Use if drawer argument is used for the command.</td>
</tr>
<tr>
<td></td>
<td>• Serial Number - Can be used anytime.</td>
</tr>
</tbody>
</table>
Parameter | Description
--- | ---
- Drive OS Path - Can be used anytime.
- off | Disable the blink mode for the device by running the command.
- h | Provides more information about the command, description, and usage.

Command examples

- blink drive -a = 1 -enc = 1 -w = 0 -d = 4
- blink drive -a = 1 -enc = 1 -d = //./PHYSICALDRIVE50 -off
- blink drive -a = 500abcdefgh12345 -enc = 1 -w = 0 -d = 4
- blink drive -d = 500a123456789012

Drive power

Description

Turns off or turns on of the drive in the specified enclosure slot number.

Command syntax

```
secli (drive power | drivepower | dp) (-a=<SAS WWID | AdapterIndex> -enc=<WWN | EnclIndex> -s=<EnclosureSlotIndex> [-on | -off] | [-h])
```

Parameters

Table 5. Drive power status

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-a</td>
<td>Specify the adapter used for the command. This can be either SAS WWID or AdapterIndex.</td>
</tr>
<tr>
<td>-enc</td>
<td>Specify the enclosure used for the command. This can be either WWN or EnclIndex.</td>
</tr>
<tr>
<td>-s</td>
<td>Specify the Enclosure Slot Index used for the command. This is retrieved by the list drives or info drive command.</td>
</tr>
<tr>
<td>-on</td>
<td>Turns on the drive on the specified enclosure slot.</td>
</tr>
<tr>
<td>-off</td>
<td>Turns off the drive on the specified enclosure slot.</td>
</tr>
<tr>
<td>-h</td>
<td>Provides additional information about the command, description, and usage.</td>
</tr>
</tbody>
</table>
List commands

List adapters

Description
This command lists the adapters accessible from the host.

Command syntax
```
secli (list adapters | listadapters | la) [-outputformat=<SupportedOutputFormats>] [-h]
```

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-h</td>
<td>Provides more information about the command, description and usage.</td>
</tr>
<tr>
<td>-outputformat</td>
<td>You can specify the following output formats: xml or json.</td>
</tr>
</tbody>
</table>

List physical enclosures

Description
Shows the list of physical enclosures and related information for the specified adapter. Default output (no adapter input specified) lists all enclosures accessible by every supported adapter in the local system.

Command syntax
```
secli (list physical enclosures | list enclosures | listphysicalenclosures | lpe)[-a=<(SAS WWID | AdapterIndex)>] [-h]
```

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-a</td>
<td>Specify the adapter used for the command. This is either SAS WWID or AdapterIndex.</td>
</tr>
<tr>
<td>-h</td>
<td>Provides more information about the command, description, and usage.</td>
</tr>
<tr>
<td>-outputformat</td>
<td>You can specify the following output formats: xml or json.</td>
</tr>
</tbody>
</table>
Command examples

- list physical enclosures
- list physical enclosures -a = 1
- list physical enclosures -a = 500abcdefg12345

List drives

Description
Shows the list of HDDs or SSDs and related information for the specified device. If no device is specified to obtain drives for, all drives accessible by supported adapters in the local system are listed.

Command syntax

```
secli (list drives | listdrives | ld) ([\(-a=<\text{(SAS WWID | AdapterIndex)}>\] [-
enc=<\text{(WWN | EnclIndex)}>\] [-w=<DrawerIndex>]\] [-
outputformat=<\text{SupportedOutputFormats}>] [-verbose] | -enc=WWN> [-
w=<DrawerIndex>] [-outputformat=<\text{SupportedOutputFormats}>] [-verbose] | [-h])
```

Parameters

**Table 8. List hard disk drive**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-a</td>
<td>Specify the adapter used for the command. This is either SAS WWID or I.</td>
</tr>
<tr>
<td>-enc</td>
<td>Specify the enclosure used for the command. This is either WWN or EnclIndex.</td>
</tr>
<tr>
<td>-w</td>
<td>Specify the drawer index used for the command.</td>
</tr>
<tr>
<td>-h</td>
<td>Provides more information about the command, description, and usage.</td>
</tr>
<tr>
<td>-outputformat</td>
<td>You can specify the following output formats: xml or json.</td>
</tr>
</tbody>
</table>

Command examples

- list drives
- list drives -a = 1
- list drives -a=1 -enc=0
- list drives -a=1 -enc=0 -w=2 -verbose
- list drives -enc=500a123456789012 - outputformat=xml

List EMMs

Description
This command lists the EMMs (Expansion Management Module) accessible from the specified adapter.
**Command syntax**

```
secli {list emms | listemms | le} (-a=<(SAS WWID | AdapterIndex)>) [-enc=<(WWN | EnclIndex)>] [-outputformat=<SupportedOutputFormats>] | -enc=<WWN> [-outputformat=<SupportedOutputFormats>] | [-h])
```

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-a</td>
<td>Specify the adapter used for the command. This is either SAS WWID or AdapterIndex.</td>
</tr>
<tr>
<td>-enc</td>
<td>Specify the enclosure used for the command. This is either WWN or EnclIndex.</td>
</tr>
<tr>
<td>-h</td>
<td>Provides more information about the command, description, and usage.</td>
</tr>
<tr>
<td>-outputformat</td>
<td>You can specify the following output formats: xml or json.</td>
</tr>
</tbody>
</table>

**Command examples**

- list emms -a = 1
- list emms -a = 1 -enc = 0
- list emms -a = 500abcdefg12345
- list emms -enc = 500a123456789012 -outputformat = xml

**List drawers**

**Description**

This command lists the drawers accessible from the specified enclosure. Depending on your enclosure, you may have one drawer or multiple drawers.

**Command syntax**

```
secli {list drawers | listdrawers | ldraw} (-a=<(SAS WWID | AdapterIndex)> -enc=<(WWN | EnclIndex)> [-outputformat=<SupportedOutputFormats>] | -enc=<WWN> [-outputformat=<SupportedOutputFormats>] | [-h])
```

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-a</td>
<td>Specify the adapter used for the command. This is either SAS WWID or AdapterIndex.</td>
</tr>
<tr>
<td>-enc</td>
<td>Specify the enclosure used for the command. This is either WWN or EnclIndex.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>-h</td>
<td>Provides more information about the command, description, and usage.</td>
</tr>
<tr>
<td>-outputformat</td>
<td>You can specify the following output formats: xml or json.</td>
</tr>
</tbody>
</table>

**Command examples**

- `list drawers -a = 1 -enc = 500a123456789012`
- `list drawers -a = 1 -enc = 0`
- `list drawers -enc = 500a123456789012 -outputformat = xml`

**List EMM slots**

**Description**

This command lists the EMM Slots and associated information for the specified enclosure.

**Command syntax**

```
secli (list emm slots | listemmslots | lemmslots) (-a=<(SAS WWID | AdapterIndex)> -enc=<(WWN | EnclIndex)> [-outputformat=<SupportedOutputFormats>] | -enc=<WWN> [-outputformat=<SupportedOutputFormats>] | [-h])
```

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-a</td>
<td>Specify the adapter used for the command. This can be either SAS WWID or AdapterIndex.</td>
</tr>
<tr>
<td>-enc</td>
<td>Specify the enclosure used for the command. This can be either WWN or EnclIndex.</td>
</tr>
<tr>
<td>-h</td>
<td>Provides more information about the command, description, and usage.</td>
</tr>
<tr>
<td>-outputformat</td>
<td>You can specify the following output formats: xml or json.</td>
</tr>
</tbody>
</table>

**Command examples**

- `list emm slots -a = 1 -enc = 500a123456789012`
- `list emm slots -a = 1 -enc = 0`
- `list emm slots -enc = 500a123456789012 -outputformat = xml`

**List drive slots**

**Description**

This command lists the HDD slots and associated information for the specified enclosure.
Command syntax

secli (list drive slots | listdriveslots | lds) (-a=<(SAS WWID | AdapterIndex)> 
-enc=<(WWN | EnclIndex)> [-outputformat=<SupportedOutputFormats>] [-verbose] | -enc=<WWN> [-outputformat=<SupportedOutputFormats>] [-verbose] | [-h])

Parameters

Table 12. List hard disk drive slots

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-a</td>
<td>Specify the adapter used for the command. This can be either SAS WWID or AdapterIndex.</td>
</tr>
<tr>
<td>-enc</td>
<td>Specify the enclosure used for the command. This is either WWN or EnclIndex.</td>
</tr>
<tr>
<td>-h</td>
<td>Provides more information about the command, description, and usage.</td>
</tr>
<tr>
<td>-outputformat</td>
<td>You can specify the following output formats: xml or json.</td>
</tr>
</tbody>
</table>

Command examples

- list drive slots -a = 1 -enc = 500a123456789012
- list drive slots -a = 1 -enc = 0
- list drive slots -enc = 500a123456789012 -outputformat = xml
- list drive slots -a = 1 -enc = 500a123456789012 -verbose

List fans

Description

This command lists the fans accessible from the specified enclosure.

Command syntax

secli (list fans | listfans | lf) (-a=<(SAS WWID | AdapterIndex)> -enc=<(WWN | EnclIndex)> [-outputformat=<SupportedOutputFormats>] | -enc=<WWN> [-outputformat=<SupportedOutputFormats>] | [-h])

Parameters

Table 13. List fans

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-a</td>
<td>Specify the adapter used for the command. This can be either SAS WWID or AdapterIndex.</td>
</tr>
<tr>
<td>-enc</td>
<td>Specify the enclosure used for the command. This can be either WWN or EnclIndex.</td>
</tr>
</tbody>
</table>
### Parameter Description

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-h</td>
<td>Provides more information about the command, description, and usage.</td>
</tr>
<tr>
<td>-outputformat</td>
<td>You can specify the following output formats: xml or json.</td>
</tr>
</tbody>
</table>

### Command examples

- list fans -a = 1 -enc = 500a123456789012
- list fans -a = 1 -enc = 0
- list fans -enc = 500a123456789012 -outputformat = xml

### List power supplies

**Description**

This command lists the power supply units (PSUs) accessible from the specified enclosure.

**Command syntax**

```
secli (list power supplies | listpowersupplies | lps) (-a=<SAS WWID | AdapterIndex>) -enc=<WWN | EnclIndex>) [-outputformat=<SupportedOutputFormats>] [-enc=<WWN> [-outputformat=<SupportedOutputFormats>] | [-h]]
```

**Parameters**

Table 14. List power supply devices

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-a</td>
<td>Specify the adapter used for the command. This can be either SAS WWID or AdapterIndex.</td>
</tr>
<tr>
<td>-enc</td>
<td>Specify the enclosure used for the command. This is either WWN or EnclIndex.</td>
</tr>
<tr>
<td>-h</td>
<td>Provides more information about the command, description, and usage.</td>
</tr>
<tr>
<td>-outputformat</td>
<td>You can specify the following output formats: xml or json.</td>
</tr>
</tbody>
</table>

**Command examples**

- list power supplies -a = 1 -enc = 500a123456789012
- list power supplies -a = 1 -enc = 0
- list power supplies -enc = 500a123456789012 -outputformat = xml

### List temperature sensors

**Description**

This command lists the temperature sensors accessible from the specified enclosure.
Command syntax

```
secli (list temp sensors | listtemperaturesensors | lts) (-a=<SAS WWID | AdapterIndex>) -enc=(WWN | EnclIndex>) [-outputformat=<SupportedOutputFormats>] | -enc=<WWN> [-outputformat=<SupportedOutputFormats>] | [-h])
```

Parameters

Table 15. List temperature sensors

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-a</td>
<td>Specify the adapter used for the command. This is either SAS WWID or AdapterIndex.</td>
</tr>
<tr>
<td>-enc</td>
<td>Specify the enclosure used for the command. This is either WWN or EnclIndex.</td>
</tr>
<tr>
<td>-h</td>
<td>Provides more information about the command, description, and usage.</td>
</tr>
<tr>
<td>-outputformat</td>
<td>You can specify the following output formats: xml or json.</td>
</tr>
</tbody>
</table>

Command examples

- `list temp sensors -a = 1 -enc = 500a123456789012`
- `list temp sensors -a = 1 -enc = 0`
- `list temp sensors -enc = 500a123456789012 -outputformat = xml`

List voltage sensors

Description

This command lists the voltage sensors accessible from the specified enclosure.

Command syntax

```
secli (list voltage sensors | listvoltagesensors | lvs) (-a=<SAS WWID | AdapterIndex>) -enc=(WWN | EnclIndex>) [-outputformat=<SupportedOutputFormats>] | -enc=<WWN> [-outputformat=<SupportedOutputFormats>] | [-h])
```

Parameters

Table 16. List voltage sensors

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-a</td>
<td>Specify the adapter used for the command. This can be either SAS WWID or AdapterIndex.</td>
</tr>
<tr>
<td>-enc</td>
<td>Specify the enclosure used for the command. This is either WWN or EnclIndex.</td>
</tr>
<tr>
<td>-h</td>
<td>Provides more information about the command, description, and usage.</td>
</tr>
</tbody>
</table>
Parameter | Description
---|---
-outputformat | You can specify the following output formats: xml or json.

Command examples

- list voltage sensors -a = 1 -enc = 500a123456789012
- list voltage sensors -a = 1 -enc = 0
- list voltage sensors -enc = 500a123456789012 -outputformat = xml

List current sensors

Description

Lists the current sensors accessible from the specified enclosure.

Command syntax

secli (list current sensors | listcurrentsensors | lcs) (-a=<(SAS WWID | AdapterIndex)> -enc=<(WWN | EnclIndex)> [- outputformat=<SupportedOutputFormats>] | -enc=<WWN> [- outputformat=<SupportedOutputFormats>] | [-h])

Parameters

Table 17. List current sensors

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-h, -help</td>
<td>Provides more information about the command, description, and usage.</td>
</tr>
<tr>
<td>-outputformat</td>
<td>You can specify the following output formats: xml or json.</td>
</tr>
<tr>
<td>-a, -adapter</td>
<td>Specify the adapter used for the command. This is either SAS WWID or the AdapterIndex.</td>
</tr>
<tr>
<td>-enc</td>
<td>Specify the enclosure is used for the command. This is either WWN or the EnclosureIndex.</td>
</tr>
</tbody>
</table>

Command examples

- list current sensors -a = 1 -enc = 500a123456789012
- list current sensors -a = 1 -enc = 0
- list current sensors -enc = 500a123456789012 -outputformat = xml

List failed drives

Description

Lists the drives that have been predicted to fail and/or drives which have returned errors through system calls. The output describes the call attempted and the SCSI error codes returned.
Command syntax


Parameters

Table 18. List failed drives

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-a</td>
<td>Specify the adapter used for the command. This is either SAS WWID or AdapterIndex.</td>
</tr>
<tr>
<td>-enc</td>
<td>Specify the enclosure used for the command. This is either WWN or EnclIndex.</td>
</tr>
<tr>
<td>-w</td>
<td>Specify the drawer index used for the command.</td>
</tr>
<tr>
<td>-h</td>
<td>Provides more information about the command, description, and usage.</td>
</tr>
<tr>
<td>-outputformat</td>
<td>You can specify the following output formats: xml or json.</td>
</tr>
</tbody>
</table>

Command examples

- list failed drives
- list failed drives -a=0
- list failed drives -enc=500a123456789012

Informational commands

Show adapter information

Description

This command provides information about the specified adapter and status or count of the attached devices.

Command syntax

secli (info adapter | infoadapter | ia) {-a=<(SAS WWID | AdapterIndex)> [-outputformat=<SupportedOutputFormats>] | [-h])
## Parameters

### Table 19. Adapter information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(-a)</td>
<td>Specify the adapter used for the command. This is either SAS WWID or AdapterIndex.</td>
</tr>
<tr>
<td>(-h)</td>
<td>Provides more information about the command, description, and usage.</td>
</tr>
<tr>
<td>(-outputformat)</td>
<td>You can specify the following output formats: xml or json.</td>
</tr>
</tbody>
</table>

## Show drive information

### Description

This command provides detailed information for the specified HDD.

### Command syntax

```bash
secli (info drive | infodrive | id) \(-a=<(SAS WWID | AdapterIndex)> \[-enc=<(WWN | EnclIndex)> \[-w=<DrawerIndex>] \[-d=<(WWN | EnclosureSlotIndex | DrawerSlotIndex | Serial Number | Drive OS Path)> \[-outputformat=<SupportedOutputFormats>] \[-smart] \[-h]\)
```

## Parameters

### Table 20. Drive information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(-a)</td>
<td>Specify the adapter used for the command. This is either SAS WWID or AdapterIndex.</td>
</tr>
<tr>
<td>(-enc)</td>
<td>Specify the enclosure used for the command. This is either WWN or EnclIndex.</td>
</tr>
<tr>
<td>(-w)</td>
<td>Specify the drawer index used for the command.</td>
</tr>
<tr>
<td>(-d)</td>
<td>Specify the hard disk drive used for the command. This can be any of the following:</td>
</tr>
<tr>
<td></td>
<td>• WWN — Can be used anytime.</td>
</tr>
<tr>
<td></td>
<td>• Serial Number — Can be used anytime.</td>
</tr>
<tr>
<td></td>
<td>• Drive OS path — Can be used anytime.</td>
</tr>
<tr>
<td></td>
<td>• Drawer Slot Index (Index of the drive in the specific drawer) — Use if drawer argument is used for the command.</td>
</tr>
<tr>
<td></td>
<td>• Enclosure Slot Index — Use if drawer argument is not being used for the command</td>
</tr>
<tr>
<td>(-outputformat)</td>
<td>You can specify the following output formats: xml or json.</td>
</tr>
</tbody>
</table>
Parameter | Description
--- | ---
-h | Provides more information about the command, description, and usage.
-smart | Display the S.M.A.R.T attribute data for the specific physical drive.

**Command examples**

- `info drive -a = 500abcdefg12345 -enc = 1 -w = 0 -d = 4`
- `info drive -a = 1 -enc = 1 -d = //./PHYSICALDRIVE50 -smart -outputformat = xml`
- `info drive -d = 500a123456789012`

**Show enclosure information**

**Description**

This command provides detailed information for the specified enclosure.

**Command syntax**

```
secli (info enclosure | infoenclosure | ie) (-a=<(SAS WWID | AdapterIndex)> -enc=<(WWN | EnclIndex)> [-outputformat=<SupportedOutputFormats>] | -enc=<WWN> [-outputformat=<SupportedOutputFormats>] | [-h])
```

**Parameters**

Table 21. Enclosure information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-a</td>
<td>Specify the adapter used for the command. This is either SAS WWID or AdapterIndex.</td>
</tr>
<tr>
<td>-enc</td>
<td>Specify the enclosure used for the command. This is either WWN or EnclIndex.</td>
</tr>
<tr>
<td>-h</td>
<td>Provides more information about the command, description, and usage.</td>
</tr>
<tr>
<td>-outputformat</td>
<td>You can specify the following output formats: xml or json.</td>
</tr>
</tbody>
</table>

**Command examples**

- `info enclosure -a = 1 -enc = 500a123456789012`
- `info enclosure -a = 1 -enc = 0`
- `info enclosure -enc = 500a123456789012 -outputformat = xml`
Show firmware file information

Description
This command provides detailed information for the specified Firmware File such as its type and properties.

Command syntax
```
secli (info firmware | infofirmware | ifw) (-file=<FW.FilePath> [-outputformat=<SupportedOutputFormats>] | [-h])
```

Parameters

Table 22. Firmware File information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-file</td>
<td>Specify the file at the given path used for the command.</td>
</tr>
<tr>
<td>-outputformat</td>
<td>You can specify the following output formats: xml or json.</td>
</tr>
<tr>
<td>-h</td>
<td>Provides more information about the command, description, and usage.</td>
</tr>
</tbody>
</table>

**NOTE:** If the filename contains special characters, you must enclose the file path within escaped double quotation marks.

View event log

Description
View all or part of the contents of the event log file based on date range and logging level.

Command syntax
```
secli (view log | vlog) ({-startDate=<StartDate> -endDate=<EndDate> -event=<EventType>} | {-event=<EventType> -count=<LatestEventCount}> | [-h])
```

Parameters

Table 23. View event log

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-h</td>
<td>Provides more information about the command, description, and usage.</td>
</tr>
<tr>
<td>-startDate</td>
<td>Display logs recorded on or after this date. Acceptable format is MM/DD/YY.</td>
</tr>
<tr>
<td>-endDate</td>
<td>Display logs recorded no later than this date. Acceptable format is MM/DD/YY.</td>
</tr>
<tr>
<td>-count</td>
<td>Display the latest number of events of a specified category. The viewable count of latest events can be a value ranging from 1 through 1000.</td>
</tr>
</tbody>
</table>
-event
Display logs of the given event severity type. This could be either of the following: INFO, CRITICAL, ERROR, WARN. Logs are printed irrespective of the severity level, if this argument is not provided.

Update commands

Update drive firmware

Description
This command updates the firmware version of the specified drives by using the provided firmware file. This command also verifies the integrity of the firmware file before applying the firmware.

Command syntax
```
```

Parameters

### Table 24. Update drive firmware

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-a</td>
<td>Specify the adapter used for the command. This is either SAS WWID or AdapterIndex.</td>
</tr>
<tr>
<td>-d</td>
<td>Specify the HDD used for the command. This can be any of the following:</td>
</tr>
<tr>
<td></td>
<td>• WNN—Can be used anytime.</td>
</tr>
<tr>
<td></td>
<td>• Serial Number—Can be used anytime.</td>
</tr>
<tr>
<td></td>
<td>• Drive OS path—Can be used anytime.</td>
</tr>
<tr>
<td></td>
<td>• Enclosure Slot Index—Use if drawer argument is not used for the command.</td>
</tr>
<tr>
<td></td>
<td>• Drawer Slot Index (Index of the drive in the specific drawer)—Use if drawer argument is used for the command.</td>
</tr>
<tr>
<td>-enc</td>
<td>Specify the enclosure used for the command. This is either WWN or EnclIndex.</td>
</tr>
<tr>
<td>-w</td>
<td>Specify the drawer index used for the command.</td>
</tr>
<tr>
<td>-file</td>
<td>Specify the file at the given path used for the command.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>-h</td>
<td>Provides additional information about the command, description, and usage.</td>
</tr>
<tr>
<td>-show</td>
<td>Display the list of drives that are updated using the specified firmware file. The drives are not updated if this option is used.</td>
</tr>
<tr>
<td>-directory</td>
<td>Specify the directory path containing firmware files used for the command.</td>
</tr>
<tr>
<td>-force</td>
<td>Using this option updates the drive firmware with the firmware file provided, regardless of the drive's firmware version being equal to or newer compared to the firmware file.</td>
</tr>
<tr>
<td>-multi</td>
<td>Using this option causes drive updates to happen simultaneously, increasing overall update speed significantly. The speed increase is apparent during multi drive updates.</td>
</tr>
</tbody>
</table>

**Command examples**

- `update drive -a = 1 -enc = 1 -w = 2 -file = C:\Users\Administrator\firmware\upgrade.fwh`
- `update drive -enc = EnclosureWWN -file = C:\Users\Administrator\firmware\upgrade.fwh -force`
- `update drive -a = 1 -directory = C:\Users\Administrator\firmware -multi`
- `update drive -d = DriveWWN -directory = C:\Users\Administrator\firmware -show`

**NOTE:** If the directory or filename contains special characters, you must enclose the file path within escaped double quotation marks.

### Update EMM firmware

**Description**

This command updates the firmware version of the specified EMM (Expansion Management Module) using the provided firmware file. This command also verifies the integrity of the firmware file before applying the firmware.

**Command syntax**

`secli (update emm | updateemm) (-a=<(SAS WWID | AdapterIndex)> -enc=<(WWN | EnclIndex)> -emm=<(WWN | EMMIndex)> -file=<FW.Filepath> | -emm=<WWN> -file=<FW.Filepath> | [-wait] | [-h])`
Parameters

Table 25. Update EMM firmware

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-a</td>
<td>Specify the adapter used for the command. This can be either SAS WWID or AdapterIndex.</td>
</tr>
<tr>
<td>-enc</td>
<td>Specify the enclosure used for the command. This can be either WWN or EnclIndex</td>
</tr>
<tr>
<td>-emm</td>
<td>Specify the EMM used for the command.</td>
</tr>
<tr>
<td>-file</td>
<td>Specify the file at the given path used for the command.</td>
</tr>
<tr>
<td>-h</td>
<td>Provides additional information about the command, description and usage.</td>
</tr>
<tr>
<td>-wait</td>
<td>If supplied, the application will wait to return until after the updated EMM comes back online.</td>
</tr>
</tbody>
</table>

NOTE: If the file name contains special characters. You must enclose the file path within escaped double quote characters.

Command examples

- update emm -a = 500abcdefg12345 -enc = 1 -emm = 0 -file = C:\Users\Administrator\firmwares\emm_upgrade.esm
- update emm -enc = 500rg67890123456 -emm = 500a123456789012 -file = C:\Users\Administrator\firmwares\emm_upgrade.esm
- update emm -emm = 500a123456789012 -file = C:\Users\Administrator\firmwares\emm_upgrade.esm

Update Adapter

Description
This command updates the firmware version of the adapter using the provided firmware file. The integrity of the firmware file will be verified before applying the firmware.

Command syntax

secli (update adapter | updateadapter) { -a=<SAS WWID | AdapterIndex> -file=<FW.FilePath> | [-h]}
Table 26. Update Adapter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-h, -help</td>
<td>Provides additional information about the command, description, and usage.</td>
</tr>
<tr>
<td>-outputformat</td>
<td>Following output format(s) can be specified: xml, json.</td>
</tr>
<tr>
<td>-a, -adapter</td>
<td>Specify the Adapter to be used for the command. This can either be the SAS WWID or the Adapter Index.</td>
</tr>
<tr>
<td>-file</td>
<td>Specify the file at the given path used for the command.</td>
</tr>
</tbody>
</table>

NOTE: If the filename contains special characters; it is required to enclose the file path within escaped double quotation marks.

Status Adapter

Description
Shows information about the specified adapter status including PHY and expander information.

Command syntax
secli (status adapter | statusadapter | sa) (-a=<(SAS WWID | AdapterIndex)> [-outputformat=<supportedOutputFormats>] | [-h])

Parameters
Table 27. Status Adapter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-h, -help</td>
<td>Provides additional information about the command, description, and usage.</td>
</tr>
<tr>
<td>-outputformat</td>
<td>Following output format(s) can be specified: xml, json.</td>
</tr>
<tr>
<td>-a, -adapter</td>
<td>Specify the Adapter to be used for the command. This can either be the SAS WWID or the Adapter Index.</td>
</tr>
</tbody>
</table>

Show Global Topology

Description
Shows a global list of all objects in the system. Output is displayed only in XML format.

Command syntax
secli (global topology | global top | gt) [-h]

Parameters
Table 28. Global Topology

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-h, -help</td>
<td>Provides more information about the command, description, and usage.</td>
</tr>
</tbody>
</table>
Server Hardware Manager Monitor

The Server Hardware Manager (SHM) Monitor monitors the storage enclosure and informs you about state changes of its elements. The SHM Monitor presents events to you in the following ways:

- Local log files on Windows
- Windows Event Log

SNMP All events are logged to the local logs and the Windows Event Log. However, SNMP traps are only generated for critical events. The SHM Monitor runs automatically after installation.

Local log file

The local log contains events detected by the SHM Monitor service on Windows. This log includes warnings and critical events. The contents of this file is viewed in the following directories:

Table 29. Log file location

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Log File Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows</td>
<td>C:\Users\Default\Dell\ServerHardwareManager\logs\ServerHardwareManagerMonitor_log.log</td>
</tr>
</tbody>
</table>

**NOTE:** The local log files are intended for support purposes and may be hidden by default on your system.

Windows event log

The Event Log File contains all events detected by the SHM Monitor service on Windows. This log includes warning and critical events. The contents of this file is viewed in the Windows Event Viewer.

SNMP

SNMP is another avenue the SHM Monitor uses to present events to the user. Only critical events are sent by using SNMP. The SHM Monitor sends traps to destinations that are contained in the SHM Monitor configuration file.
The SHM Monitor configuration file is located in the installation directory. The following is the default location of the configuration files.

**Table 30. Log File Location**

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Log File Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows</td>
<td>C:\Program Files\Dell\ServerHardwareManager\ServerHardwareManagerMonitor\SHM_Snmp.conf</td>
</tr>
</tbody>
</table>

Although the SHM Monitor runs automatically upon installation, you must configure a trap destination in the configuration file for SNMP to function correctly. A trap destination has the following format:

```
ip=ipaddress[:port]
```

For example:

```
ip=192.168.1.1:1050
```

- **Address** — The IP address of the destination
- **Port** — Port on the target machine the trap receiver listens

Refer to the documentation of the trap listener for the port number it uses. If no port is specified, SHM Monitor sends traps to the default port—162.

💡 **NOTE:** After any changes are made to the SNMP configuration file, you must stop and start the service for changes to take effect.

### Critical events

The SHM Monitor logs all event types. However, SNMP sends only critical events to the trap destination. The list here outlines the critical events:

- **Power Supply Unit (PSU)**
  - PSU is removed
  - DC voltage goes out of range of safe operating values
  - DC current goes out of range of safe operating values

- **Fan is removed**

- **Temperature Sensor**
  - Temperature of enclosure is above/below critical threshold

- **Voltage Sensor**
  - Voltage goes above or below a critical threshold
  - AC power failure
  - DC power failure

- **Drawer**
  - Drawer is opened
- Drawer control module has failed
  - EMM is removed
  - Drive removed
The SHM ReST API

The Server Hardware Manager (SHM) software provides support for the Representational State Transfer (ReST) API. The ReST service is accessible from a client device and from a Web browser.

The Dell storage enclosures support the following ReST operations:

- Device inventory using the GET commands available in the Management Command-Line Interface
- Device actions:
  - Updating firmware
  - Validating firmware
  - Blinking a drive
  - Turning off a drive

![Diagram](image)

**Figure 6. Storage enclosure ReST queries are built into the device hierarchy**

Accessing the ReST service

The base URL for a ReST request is in the following format:

http://<host>:<port>/api/<Program_Space>/<version>
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
<td>The address of the host running the ReST server. This address can be the Fully Qualified Domain Name (FQDN) of the host or an IP address.</td>
</tr>
<tr>
<td>Port</td>
<td>The port number opened for ReST traffic. The default port is 8012.</td>
</tr>
<tr>
<td>Program_Space</td>
<td>The application namespace: &quot;SEM&quot;.</td>
</tr>
<tr>
<td>Version</td>
<td>The major working version number. Currently “1.0”.</td>
</tr>
</tbody>
</table>

For example, the base URL [http://127.0.0.1:8012/api/SEM/1.0/](http://127.0.0.1:8012/api/SEM/1.0/) is used to access the ReST server locally.

**NOTE:** For the remainder of this chapter, `[base_url]` is used in place of the base URL syntax.

To obtain information about different devices, you must use the following ReST query:

```
[base_url]/<item_group>
```

To obtain information about a single device, you must use the following ReST query:

```
[base_url]/<item_group>/<index | wwid>
```

The `<item_group>` variable represents the different types of devices contained within the storage enclosure. Following are the `item_group` values (device types):

- adapters\(^2\)
- currentsensors
- drawers
- drives\(^1,2\)
- driveslots
- enclosures\(^2\)
- emms\(^1\)
- emmslots
- fans
- locks
- powersupplies
- voltagesensors

**NOTE:** \(^1\)EMM and drive item groups are queried at a higher level without having to reference an adapter or enclosure.

**NOTE:** \(^2\)Adapters, enclosures, and drives are the only item groups that can provide more detail on a single device in the item group by specifying an index value or World Wide ID (WWID).

## Device inventory

All GET commands available in the are implemented in the ReST API. The information returned from a ReST query is different from the output of a command. ReST API calls return output equivalent to the output of information commands.
The URL syntax for device queries is described here:

**Adapters**
Provides information about all adapters:

```
[base_url]/adapters
```
Provides information about a specified adapter:

```
[base_url]/adapters/(index | wwid)
```

**Enclosures**
Provides information about all enclosures attached to a specific adapter:

```
[base_url]/a/(index | wwid)/enclosures
```
Provides information about a specified enclosure attached to a specified adapter:

```
[base_url]/a/(index | wwid)/enclosures/(index | wwid)
```

**EMMs**
Provides information about all EMMs:

```
[base_url]/a/(index | wwid)/emms
```
Provides information about all EMMs in a specified enclosure:

```
[base_url]/a/(index | wwid)/enclosures/(index | wwid)/emms
```

**Drives**
Provides information about all drives attached to a specified adapter:

```
[base_url]/a/(index | wwid)/drives
```
Provides information about all drives in a specified enclosure:

```
[base_url]/a/(index | wwid)/enclosures/(index | wwid)/drives/
```
Provides information about single drive in a specified enclosure:

```
[base_url]/a/(index | wwid)/enclosures/(index | wwid)/drives/(index)
```

**Drives slots**
Provides information about all drive slots in a specified enclosure:

```
[base_url]/a/(index | wwid)/enclosures/(index | wwid)/driveslots
```

**EMM slots**
Provides information about all EMM slots in a specified enclosure:

```
[base_url]/a/(index | wwid)/enclosures/(index | wwid)/emmslots
```
Drawers
Provides information about all drawers in a specified enclosure:
[base_url]/a/<(index | wwid)>/enclosures/<(index | wwid)>/drawers

Fans
Provides information about all fans in a specified enclosure:
[base_url]/a/<(index | wwid)>/enclosures/<(index | wwid)>/fans

Power supply units
Provides information about all PSUs in a specified enclosure:
[base_url]/a/<(index | wwid)>/enclosures/<(index | wwid)>/powersupplies

Voltage sensors
Provides information about all voltage sensors in a specified enclosure:
[base_url]/a/<(index | wwid)>/enclosures/<(index | wwid)>/voltagesensors

Current sensors
Provides information about all EMM slots in a specified enclosure:
[base_url]/a/<(index | wwid)>/enclosures/<(index | wwid)>/currentsensors

Device actions
Certain devices can have actions performed on them such as updating firmware or blinking a drive’s LED. Also, firmware files can be validated. These device actions require additional options at the end of the URL for a device inventory query:
[base_url]/<item_group>/<(index | wwid)>/?action=<whattodo>&<option>=<opt>

The additional options to the URL for device actions are described here:

- ?action=<whattodo> - what action to perform: update, blink, or get.
- <option> = <opt> - an argument for the action to be performed.

Following are the options available:

- For updates, File=<file>; for example, ?action=update&File=file.fwh
- For blinking drives, toggle=ON/OFF -; for example, ?action=blink&toggle=ON

Specifying file paths
File paths in Windows can either be percent encoded or entered with forward slashes. The following are examples of valid Windows filepaths for a firmware file:
- C:\drivefirmwares\Seagate%22firmwares%5Cmyfirmwarefile.fwh
- C:/drivefirmwares/Seagate%22firmwares/myfirmwarefile.fwh.

**NOTE:** ‘%5C’ is the encoding for Windows ‘\’ and ‘%22’ represents spaces in the path name.

**Blink drive**

To toggle blink on a single drive:

```
[base_url]/adapters/<(index | wwid)>/enclosures/<(index | wwid)>/drive/<(index | wwid)>?action=blink&toggle=<ON | OFF>
```

To toggle blink on all drives within a specified enclosure:

```
[base_url]/adapters/<(index | wwid)>/enclosures/<(index | wwid)>/drive/?action=blink&toggle=<ON | OFF>
```

**Update firmware**

**Table 32. Update firmware**

<table>
<thead>
<tr>
<th>Drive Update</th>
<th>Query Syntax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single drive with a firmware file</td>
<td>[base_url]/adapters/&lt;(index</td>
</tr>
<tr>
<td>Force an update to a single drive with a firmware file</td>
<td>[base_url]/adapters/&lt;(index</td>
</tr>
<tr>
<td>Update all drives within a specified enclosure with a firmware file</td>
<td>[base_url]/adapters/&lt;(index</td>
</tr>
<tr>
<td>Force an update to all drives within a specified enclosure with a firmware file</td>
<td>[base_url]/adapters/&lt;(index</td>
</tr>
<tr>
<td>Update all drives within a specified enclosure with a firmware file (multi-threaded)</td>
<td>[base_url]/adapters/&lt;(index</td>
</tr>
</tbody>
</table>

**EMM Update**

<table>
<thead>
<tr>
<th>Single enclosure management module (EMM) with a firmware file</th>
<th>Query Syntax</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[base_url]/adapters/&lt;(index</td>
</tr>
</tbody>
</table>
Validate firmware file

The following command provides the user with information about a specified firmware file:

```
[base_url]?firmwarefile=<path to firmware file>
```
Getting help

Contacting Dell

Dell provides several online and telephone-based support and service options. If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer-service issues:

1. Go to Dell.com/support.
2. Select your country from the drop-down menu on the bottom right corner of the page.
3. For customized support:
   a. Enter your system Service Tag in the Enter your Service Tag field.
   b. Click Submit.
      The support page that lists the various support categories is displayed.
4. For general support:
   a. Select your product category.
   b. Select your product segment.
   c. Select your product.
      The support page that lists the various support categories is displayed.