

### Overview

This module discusses Command View EVA resources available for managing and monitoring the Enterprise Virtual Array. It describes the management agent options that you can set in Command View EVA and details the options you can use to set up passwords and add licenses. Finally, hardware property displays are presented to observe configuration and operational states of the components of a storage system: rack, controllers, disk enclosures, and disk drives.

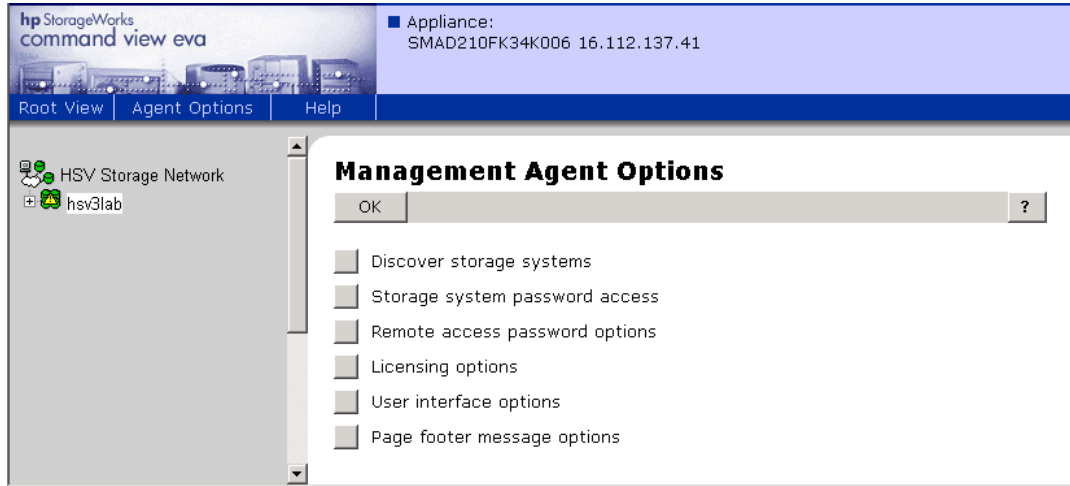
## Objectives

After completing this module you should be able to:

- Identify the management agent options that you can set in Command View EVA.
- Describe how to use the management agent options to set up passwords and add licenses.
- Identify the information that displays on a storage system's rack, controller, and disk drive properties pages.

## Viewing management agent options

You can access the Management Agent Options page by selecting *Agent Options* in the Session pane. The following screen appears.



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### Note

Students should refer to the *HP StorageWorks Command View EVA Getting Started Guide* for details on the procedures in the following pages.

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## Discovering storage systems

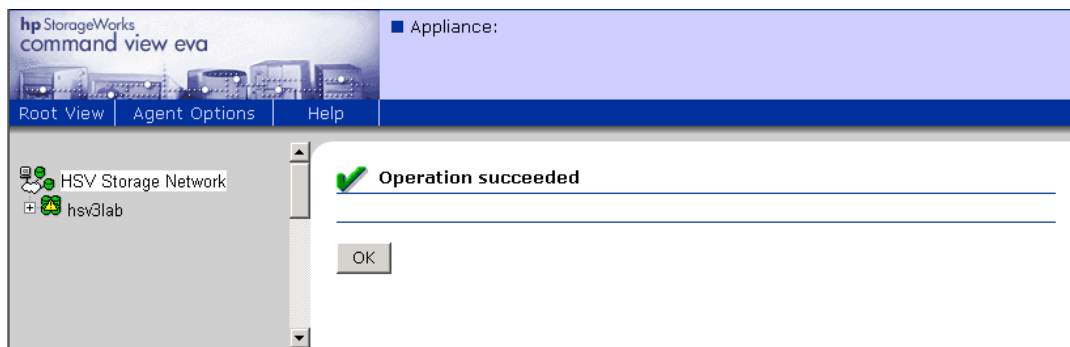
When you click on the button next to **Discover storage systems**, you will be able to locate new storage systems on the SAN.

### Management Agent Options

OK ?

- Discover storage systems
- Storage system password access
- Remote access password options
- Licensing options
- User interface options
- Page footer message options

A status page displays details on the discovery operation.

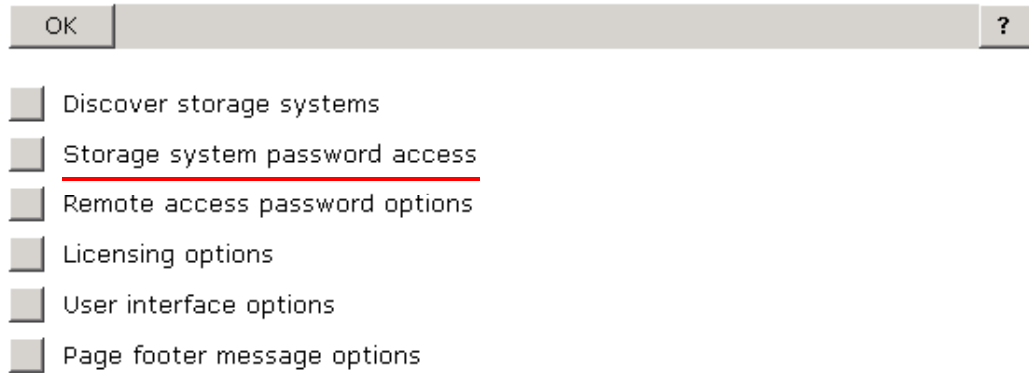


After clicking *OK*, the updated Navigation pane displays any new storage systems

## Storage system password access

When you click on the button next to **Storage system password access**, you will be able to set passwords for your storage systems.

### Management Agent Options



OK	?
<input type="checkbox"/>	Discover storage systems
<input type="checkbox"/>	<u>Storage system password access</u>
<input type="checkbox"/>	Remote access password options
<input type="checkbox"/>	Licensing options
<input type="checkbox"/>	User interface options
<input type="checkbox"/>	Page footer message options

Command View EVA provides password protection to the storage systems. Without password protection, any Command View EVA on the fabric can access any storage system on the fabric if not properly zoned.

The storage system becomes password-protected when a password is entered into the operator control panel (OCP) of one of the controllers. This locks the storage systems with the password. This password must be entered in the Command View EVA you want to access that storage system.

Once a password is entered for a specific storage system, Command View EVA stores that password to continually associate it with that storage system. If the storage system password changes, you can change the stored password.

## Enable a storage system

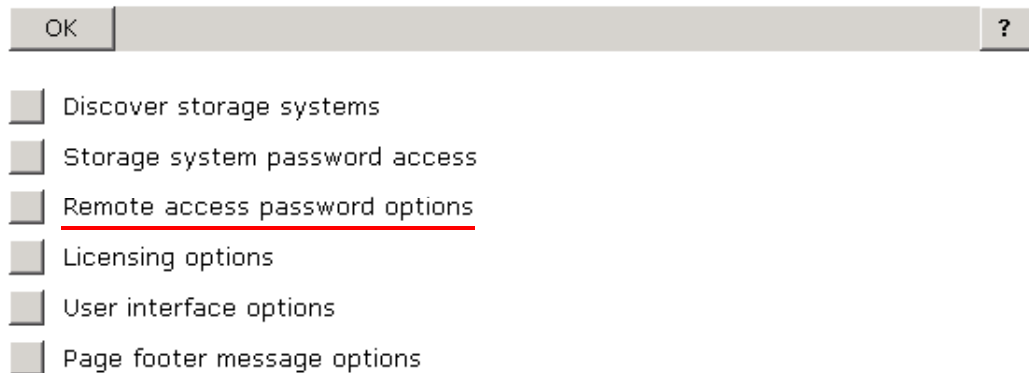
Once you have entered the password thru the OCP, this page lets you enable a storage system, change a storage system password, or delete one or more storage systems. In Command View EVA, click the *Enable* button to enter a password and bind it to the one you entered through the OCP.



## Remote access password options

This option displays the Remote access password options page, allowing the user to view and manage access information so applications on the SMA can communicate with applications on remote systems. Click the button next to **Remote access password options** to display the Remote Access Password Options window.

### Management Agent Options



To enter or change a remote access password, use the following procedure:

1. Browse to the Command View EVA Home page.
2. Click the *Agent Options* button on the Session pane toolbar.
3. Click the *Remote access password options* box on the Content pane. The Storage Management Appliance Home page displays.

**Login Account: anonymous**

[Refresh Page](#)

16.112.137.41

Monday, September 08, 2003 6:46:21 AM

### Account Login

**This is a private system. Do not attempt to login unless you are an authorized user. Any authorized or unauthorized access and use may be monitored and can result in criminal or civil prosecution under applicable law.**

<p><b>User:</b> <input type="text" value="administrator"/></p> <p><b>Password:</b> <input type="password"/></p> <p><input type="button" value="OK"/></p>	<p>You are being prompted to provide login account information for <b>SMAD210FK34K006</b>.</p> <p>Please provide the information requested and press the <b>OK</b> button to complete the login process.</p> <p>A successful login will bring up the original system management information requested (<b>cpqllogin.htm</b>), or the Device Home Page if this login was manually initiated. The Password for a login account may be changed at any time by an Account Administrator.</p>
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4. Enter the user name and password in the appropriate fields and click OK. The System Management Account Login page displays.
5. Click the *Settings* tab. Another Systems Management Homepage displays.
6. From the HTTP Server box, select *Change Password*. The Change HTTP Server Password screen appears.
7. Enter your username and the new password in the Username and Password fields. Enter the new password again in the Confirm password field.
8. Click *Change Password*. A status screen displays whether or not the password was successfully changed.

## Licensing options

The licensing options allow you to view current license keys or enter new ones. Click the button next to **Licensing Options**.

### Management Agent Options

OK	?
<input type="checkbox"/>	Discover storage systems
<input type="checkbox"/>	Storage system password access
<input type="checkbox"/>	Remote access password options
<input type="checkbox"/>	<u>Licensing options</u>
<input type="checkbox"/>	User interface options
<input type="checkbox"/>	Page footer message options

You will see a screen with options to view previously entered license keys or to enter a license key.

<b>Licensing Options</b>	
OK	?
<input type="checkbox"/>	View previously entered license keys
<input type="checkbox"/>	Enter new license key



Click the button next to **View previously entered license keys** to view license keys that have been entered.

## View License Keys

Cancel ?

The keys entered for the licensed features on this system are shown below.

```
INCREMENT HSV110-BASIC Compaq 2.0 permanent uncounted 270DD7FD7DC5 \
HOSTID=HSVWWN=5000-1FE1-5000-2CD0 NOTICE="Authorization \
=DD020CREAMER17426431, Qty 1, QM-6RNAA-AA2.0, VCS PKG V2.0 \
DUAL HSV CNTLR"

INCREMENT HSV110-BASIC Compaq 3.0 permanent uncounted 6FAB023B815E \
HOSTID=HSVWWN=5000-1FE1-5000-2CD0 NOTICE="Authorization = \
BM02WHITMORE85493546, 60 Day TEMPORARY Key. Replace these keys \
with permanent keys to continue operation."

INCREMENT HSV110-SNAPSHOT Compaq 3.0 permanent uncounted FE4C229F4EA2 \
HOSTID=HSVWWN=5000-1FE1-5000-2CD0 NOTICE="Authorization = \
BM02WHITMORE85493546, 60 Day TEMPORARY Key. Replace these keys \
with permanent keys to continue operation."

INCREMENT HSV110-DRM Compaq 3.0 permanent uncounted 1AE60DF2429D \
HOSTID=HSVWWN=5000-1FE1-5000-2CD0 NOTICE="Authorization = \
BM02WHITMORE85493546, 60 Day TEMPORARY Key. Replace these keys \
with permanent keys to continue operation."
```

Click the button next to **Enter new license key** to add a license.

### Add a license

Add license Cancel ?

Enter a license key and click the **Add License** button to activate special features on your storage system.

```
1F1C377E0B3B
HOSTID=HSVWWN=5000-1FE1-0013-A220 NOTICE="Authorization = \
DID1DADDIEC021364684, Qty 1, QM-ENTRP-RI.SE - Enterprise \
Controller Software - SNAPSHOT, Quickspec 78*90*12 ck=129|
```

### Note

As of VCS V3.010, license keys are only required for value-added applications, that is, Business Copy EVA and Continuous Access EVA.

## User interface options

The user interface options allow you to choose how objects are displayed in Command View EVA. Click the button next to **User interface options** to see the options.

### Management Agent Options

OK	?
<input type="checkbox"/>	Discover storage systems
<input type="checkbox"/>	Storage system password access
<input type="checkbox"/>	Remote access password options
<input type="checkbox"/>	Licensing options
<input type="checkbox"/>	<u>User interface options</u>
<input type="checkbox"/>	Page footer message options

You have the option to use wizards for virtual disk creation and adding hosts, or to see a certain number of objects in the Navigation pane. Click on the options you want and then *Save changes*.

### User Interface Options

Save changes	Cancel	?
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Edit the settings below and click the **Save Changes** button to change your user interface configuration.

<input type="checkbox"/>	Use wizards for creating Vdisks and adding hosts
<input type="text" value="200"/>	Tree objects displayed

Default operating system for new hosts
<input type="text" value="Microsoft Windows"/>

## Example with virtual disks wizards not selected

One of the user interface options is whether or not to use wizards for virtual disk creation. The following screen shows the Command View EVA screen for creating virtual disks **without** a wizard.

### Create a Vdisk Family

Finish Cancel ?

<b>Vdisk name:</b> <input type="text" value="Vdisk005"/> ?	
<b>Disk group name</b>	Available GB: Vraid0/Vraid5/Vraid1
<input type="text" value="Default Disk Group_124.51_99.60_62.27"/> ?	
<b>Redundancy:</b>	
<input type="radio"/> Vraid0 ? Space available <b>124.51 GB</b>	<input type="radio"/> Vraid5 ? Space available <b>99.60 GB</b>
<input checked="" type="radio"/> Vraid1 ? Space available <b>62.27 GB</b>	
<b>Size:</b> <input type="text" value="0"/> GB	
<b>World Wide Name:</b> <input type="text" value="Default WWName"/> (format: 6xxx-xxxx-xxxx-xxxx-xxxx-xxxx-xxxx-xxxx)	
<b>Write Cache policy:</b> <input type="text" value="Mirrored write-back"/> ?	<b>Read Cache policy:</b> <input type="text" value="On"/> ?
<input checked="" type="radio"/> Read/write <input type="radio"/> Read only?	<b>OS Unit ID:</b> <input type="text" value="0"/> ?
<b>Present to host:</b> <input type="text" value="None"/> ?	<b>Preferred path/mode:</b> <input type="text" value="No preference"/> ?

## Example with virtual disks wizards selected

The following screen shows the Command View EVA screen for creating virtual disks **with** a wizard.

### Create a Vdisk Family

Page 1 Page 2 Page 3 Page 4 Page 5

Finish Advanced options Cancel ?

Complete these steps and click **Finish** to create your Vdisk family. For more control, complete the steps and click **Adv Options** instead.

**STEP 1: Enter a Name**

?

**STEP 2: Select a disk group**

Name	Available capacity (GB): Vraid0/Vraid5/Vraid1
Default Disk Group	124.51_99.60_62.27 ?

**STEP 3: Select a Redundancy Level and Size**

<input type="radio"/> ? Vraid0 Space available: <b>124.51 GB</b>	<input type="radio"/> ? Vraid5 Space available: <b>99.60 GB</b>	<input checked="" type="radio"/> ? Vraid1 Space available: <b>62.27 GB</b>
Desired Size: <input type="text" value="0"/> GB		

**STEP 4: Select a host**

?

## Page footer message options

The page footer message options allow you to place a footer on every page of the Command View EVA display. Click the button next to **Page footer message options** to see the options.

### Management Agent Options

OK	?
<input type="checkbox"/>	Discover storage systems
<input type="checkbox"/>	Storage system password access
<input type="checkbox"/>	Remote access password options
<input type="checkbox"/>	Licensing options
<input type="checkbox"/>	User interface options
<input type="checkbox"/>	<u>Page footer message options</u>

You have the option to enter any text you want. Click *Save Changes* to create the footer.

### Set Page Footer Message

Save changes	Cancel	?
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Edit the text below and click the **Save Changes** button to set the message displayed at the bottom of each Content Pane page.

No power clicking!	?
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The following shows the footer displayed.

## Management Agent Options

OK	?
<input type="checkbox"/>	Discover storage systems
<input type="checkbox"/>	Storage system password access
<input type="checkbox"/>	Remote access password options
<input type="checkbox"/>	Licensing options
<input type="checkbox"/>	User interface options
<input type="checkbox"/>	Page footer message options

**No power clicking!**

## Viewing hardware properties

You can view hardware properties using Command View EVA. This allows you to monitor the EVA components and assist in diagnosing problems. The following property displays are available:

- Rack properties
- Controller properties
- Disk enclosure properties
- Disk drive properties

To view these properties, you must select a storage system and then a rack within the storage system.

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**Note**

The FC loop switches are not recognized by Command View EVA.

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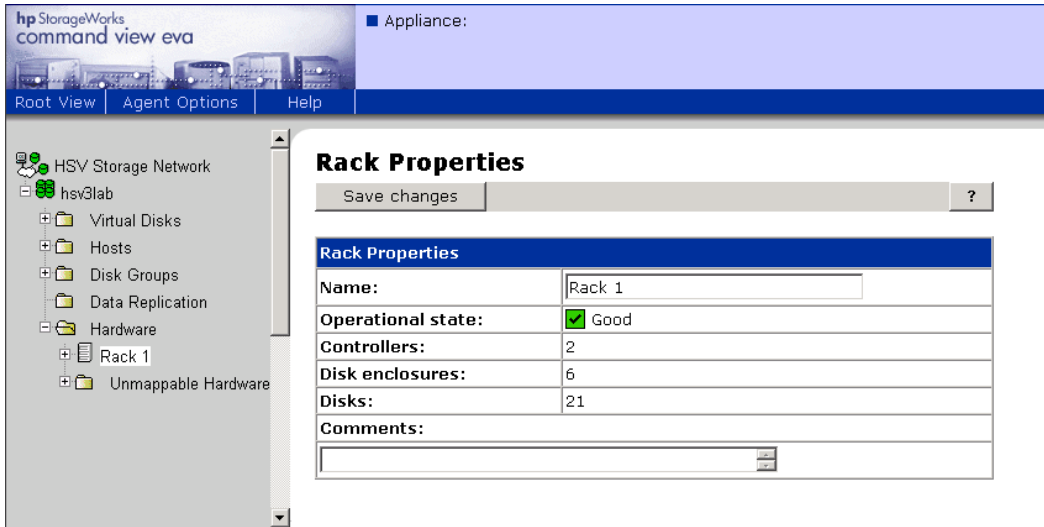
## Rack properties

The Rack Properties page displays:

- Operational state of the rack
- Number of each rack component
  - Controllers
  - Disk enclosures
  - Disks
- Comments

### Example

This example shows that Rack 1 contains two enclosures, six disk enclosures, and 21 disk drives.



The screenshot shows the HP StorageWorks Command View EVA interface. The left sidebar displays a tree view of the storage network, including 'HSV Storage Network', 'hsv3lab', 'Virtual Disks', 'Hosts', 'Disk Groups', 'Data Replication', 'Hardware', 'Rack 1', and 'Unmappable Hardware'. The main content area is titled 'Rack Properties' and contains a 'Save changes' button and a '?' icon. Below this is a table with the following properties:

Rack Properties	
Name:	Rack 1
Operational state:	<input checked="" type="checkbox"/> Good
Controllers:	2
Disk enclosures:	6
Disks:	21
Comments:	

You can change the following rack properties on this page by entering the new information and clicking *Save changes*. The following properties can be changed:

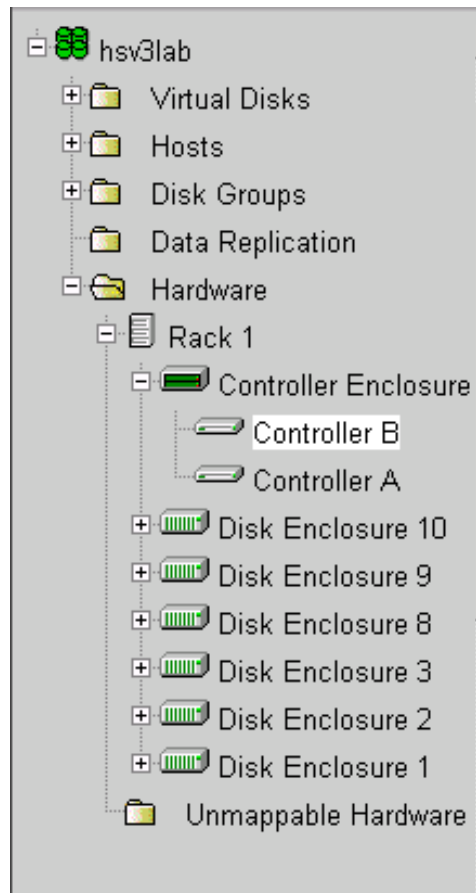
- Rack name
- Comments



## Controller properties

To display the Controller Properties page, select a controller enclosure from a rack folder and select a controller.

### Example



The Controller Properties page displays the following properties:

- General
- Controller host ports
- Controller devices
- Controller enclosure

## General controller properties

General controller properties include the following:

- VCS version
- Controller serial number
- WWID of the storage system
- Operational state of the controller
- Amount of cache memory
- Mirror path and port states
- Enclosure number

### Example

## Controller Properties

Save changes	Locate	Shut down	Code load	?
General		Host Ports	Device Ports	Enclosure
<b>Identification</b>		<b>Condition/State</b>		
<b>Name:</b>	Controller B	<b>Operational State:</b>	<input checked="" type="checkbox"/> Good	
<b>Type:</b>	HSV Storage System	<b>Cache Memory</b>		
<b>Manufacturer:</b>	Hewlett-Packard Company	<b>Operational State:</b>	<input checked="" type="checkbox"/> Good	
<b>Model Number:</b>	HSV110	<b>Write capacity:</b>	256 MB	
<b>Software version:</b>	CC00EFvcsp-3010	<b>Read capacity:</b>	512 MB	
<b>Serial Number:</b>	P4889B49ILV00N	<b>Mirror Path:</b>	<input checked="" type="checkbox"/> Good	
<b>World Wide Node Name:</b>	5000-1FE1-5000-2CD0	<b>Mirror Port State:</b>	<input checked="" type="checkbox"/> Good	
<b>UUID:</b>	5005-08b4-0001-4529-0000-0000-0000-0000	<b>Location</b>		
		<b>Enclosure number:</b>	7	
<b>Comments</b>				
<input type="text"/>				

### Note

You can use this page to view the VCS version (CC00EFvcsp-3010). The current superfile for VCS V3.010 is named **ent-v3010.sss**.

## Controller identification

You must issue a *Locate* command to determine which physical controller is the A or B controller. The settings are as follows:

- Controller A FP1, WWN + 9
- Controller A FP2, WWN + 8
- Controller B FP1, WWN + D
- Controller B FP2, WWN + C

The WWN assignments for A and B will not change once set.



### Important

Various events may cause controller priority to reverse. Once the primary controller is determined, do not assume that it retains that designation.

A feature of VCS V3.X is that the Controller Termination Event Log will have events corresponding to both controllers.

## Controller enclosure

Selecting *Controller Enclosure* in the Navigation pane brings up the properties of the enclosure. This does not indicate the physical position of the controller.

### Example

The screenshot shows the HP StorageWorks command view eva interface. The left navigation pane is expanded to show the 'Controller Enclosure' under 'Rack 1'. The main window displays the 'Controller Enclosure Properties' dialog box with the following information:

Controller Enclosure Properties	
Name:	Controller Enclosure 7
Enclosure ID:	7

## Controller A properties

The following screen will show the controller A general, host port, device port, and enclosure properties.

### Example

## Controller Properties

Save changes	Locate	Shut down	Code load	?
General		Host Ports	Device Ports	Enclosure
<b>Identification</b>		<b>Condition/State</b>		
Name:	Controller A	Operational State:	<input checked="" type="checkbox"/>	Good
Type:	HSV Storage System	<b>Cache Memory</b>		
Manufacturer:	Hewlett-Packard Company	Operational State:	<input checked="" type="checkbox"/>	Good
Model Number:	HSV110	Write capacity:	256 MB	
Software version:	CC00EFvcsp-3010	Read capacity:	512 MB	
Serial Number:	P4889B49ILV033	Mirror Path:	<input checked="" type="checkbox"/>	Good
World Wide Node Name:	5000-1FE1-5000-2CD0	Mirror Port State:	<input checked="" type="checkbox"/>	Good
UUID:	5005-08b4-0001-4523-0000-0000-0000-0000	<b>Location</b>		
		Enclosure number:	7	
<b>Comments</b>				
<input type="text"/>				

Both VCS and Command View EVA are object-oriented. Each object, whether hardware element or software structure, has a UUID. The various objects in a storage system use the UUID to identify each other.

## Controller A host ports properties

The Controller A Host Ports page shows the WWID, address (fabric-assigned, 24-bit), and operational and connection states for each host port of controller A.

### Example

## Controller Properties

Locate	Shut down	Code load	?
General	Host Ports	Device Ports	Enclosure
<b>Port 1:</b>			
World Wide Name:	50001FE1 50002CD9		
Address:	06-10-00		
Operational State:	<input checked="" type="checkbox"/> Good		
Connection state:	<input checked="" type="checkbox"/> Logged into fabric		
Speed:	1Gb/s		
<b>Port 2:</b>			
World Wide Name:	50001FE1 50002CD8		
Address:	07-10-00		
Operational State:	<input checked="" type="checkbox"/> Good		
Connection state:	<input checked="" type="checkbox"/> Logged into fabric		
Speed:	1Gb/s		

On the HSV controllers, note the last character of the port WWID:

- 9, controller A, host port 1
- 8, controller A, host port 2

## Controller A device ports properties

The Controller A Device Ports page shows the following:

- WWID of the controller on each loop
- Loop ID (AL\_PA)
- Operational state for each port

### Example

## Controller Properties

Locate	Shut down	Code load	?
General	Host Ports	Device Ports	Enclosure
<b>Loop Pair 1</b>			
<b>Loop A:</b>			
World Wide Name:	00508B40 00145231		
Loop ID:	125		
Operational State:	<input checked="" type="checkbox"/> Good		
<b>Loop B:</b>			
World Wide Name:	00508B40 00145232		
Loop ID:	125		
Operational State:	<input checked="" type="checkbox"/> Good		
<b>Loop Pair 2</b>			
<b>Loop A:</b>			
World Wide Name:	00508B40 00145233		
Loop ID:	125		
Operational State:	<input checked="" type="checkbox"/> Good		
<b>Loop B:</b>			
World Wide Name:	00508B40 00145234		
Loop ID:	125		
Operational State:	<input checked="" type="checkbox"/> Good		

## Determining the extended port LUN WWID

To determine the port LUN WWID:

- Remove the last digit (1, 2, 3, or 4).
- Precede the port WWID with a 6.

### Example

The WWID of loop pair 1, port B is 00508B40 00100DC2. This means that the WWID of virtual disk Data Disk 1 (Properties Page displays 0001-3000-003A-0000) is:

6 + 00508B4000100DC + 0001-3000-003A-0000, which makes

**6005-08B4-0001-00DC-0001-3000-003A-0000**

## Controller A enclosure properties

The Controller Properties page for Controller A shows the following:

- Blower speed
- Power
- Temperature sensors
- Cache battery status

### Example

## Controller Properties

Locate	Shut down	Code load	?
General		Host Ports	Device Ports
Enclosure			
<b>Location</b>		<b>Temperature</b>	
Enclosure number:	7	I2C Sensor 1:	68°F / 20°C
<b>Blowers</b>		I2C Sensor 2:	77°F / 25°C
FRU Type	Blower only	Overtemp Threshold:	131°F / 55°C
<b>Blower 1</b>		<b>Cache Battery System</b>	
Installed?	Yes	Operational State:	<input checked="" type="checkbox"/> Good
Actual speed:	4050 RPM	Battery voltage:	2.32 VDC
<b>Blower 2</b>		<b>Battery Module 1</b>	
Installed?	Yes	Installed?	Yes
Actual speed:	3930 RPM	Operational state:	<input checked="" type="checkbox"/> Good
<b>Power</b>		<b>Battery Module 2</b>	
12 VDC Voltage:	11.87 VDC	Installed?	Yes
5 VDC Voltage:	4.99 VDC	Operational state:	<input checked="" type="checkbox"/> Good
3.3 VDC Voltage:	3.28 VDC	<b>Battery Charger</b>	
2.5 VDC Voltage:	2.50 VDC	Operational state:	<input checked="" type="checkbox"/> Good
2.0 VDC Voltage:	2.01 VDC		

## Controller locate

You use the *Locate* button to locate a controller by turning its indicator on or off.

### Example

#### Locate Hardware Device



Click the appropriate button to turn the location indicator on the hardware device you have selected on or off. Click the **OK** button to exit. Be sure to turn the location indicator off before you exit.

The locate indicator on this hardware device is now **ON**.

## Controller shutdown

You use the *Shut down* button to shut down the controller.

### Example

#### Shut Down Controllers



##### Controller Shutdown

- |   |  |
|---|--|
| <input type="button" value="Restart"/>    | Shut down and restart this controller only                                   |
| <input type="button" value="Power down"/> | Shut down this controller and power off. Disable cache battery backup power. |

##### System Shutdown

- |   |  |
|---|--|
| <input type="button" value="Power down"/> | Shut down both controllers and all disk drives and power them off. Disable all cache battery backup power. |
| <input type="text" value="0"/>            | Shutdown delay (0–60 minutes)  |

You use the *Power down* button to power down the controllers immediately. The disk enclosure will power down 60-90 seconds later. The default setting is 0. The user can also set the time up to one hour.



## Disk enclosure properties

To display the Disk Enclosure Properties page, select a disk enclosure from the controller enclosure folder. Select the tabs on the page to display the following properties:

- General
- Power
- Cooling
- I/O ports and communication buses

### General disk enclosure properties

The properties that display on this page include:

- Loop pair where the disk enclosure is located
- Operational state
- EMU firmware version

#### Example

The example that follows shows that Disk Enclosure 10 is located on **LoopPair2**. The EMU firmware version is **02020071**.

### Disk Enclosure Properties

Save changes		Locate		?	
General		Power		Cooling	
I/O-Comm					
<b>Identification</b>			<b>LED Display</b>		
Name:	Disk Enclosure 10		Operational state:	<input checked="" type="checkbox"/> Good	
World Wide ID:	5000-1FE1-0016-75E0		Language:	English	
<b>Location</b>			<b>EMU</b>		
Loop Pair:	LoopPair2		Operational state:	<input checked="" type="checkbox"/> Good	
<b>Audible Alarm</b>			Firmware version:	02020071	
Operational State:	<input checked="" type="checkbox"/> Good				
Alarm:	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled				
<b>Last Enclosure Event</b>					
No events logged					
<b>Comments</b>					
<input type="text"/>					

## Disk enclosure power properties

In the Disk Enclosure Power Properties page you can view properties for:

- Power Supply 1
- Power Supply 2

Click *Power Supply 1* or *Power Supply 2* to view properties for each.

### Example for Power Supply 1

## Disk Enclosure Properties

Locate		?	
General		Power	
Cooling		I/O-Comm	
Power Supply 1		Power Supply 2	
Power Supply 1 Properties			
Condition/State:		Alarm Thresholds:	
Operational state:	<input checked="" type="checkbox"/> Good	<b>5 VDC Voltage Alarms</b>	
<b>Output:</b>		OverVolt Warn:	5.7 VDC
5 VDC		OverVolt Critical:	5.7 VDC
Voltage:	5.5 Volts	UnderVolt Warn:	5.1 VDC
Current:	11.7 Amps	UnderVolt Critical:	5.1 VDC
12 VDC		<b>5 VDC Current Alarms</b>	
Voltage:	12.5 Volts	OverCurrent Warn:	20.0 Amps
Current:	4.5 Amps	OverCurrent Critical:	24.0 Amps
<b>Alarms:</b>		<b>12 VDC Voltage Alarms</b>	
AC Failure:	No	OverVolt Warn:	13.1 VDC
5 VDC		OverVolt Critical:	13.3 VDC
Voltage:	None	UnderVolt Warn:	11.9 VDC
Current:	None	UnderVolt Critical:	11.8 VDC
12 VDC		<b>12 VDC Current Alarms</b>	
Voltage:	None	OverCurrent Warn:	22.5 Amps
Current:	None	OverCurrent Critical:	26.5 Amps

## Disk enclosure cooling properties

On the Disk Enclosure Cooling Properties page, you can view properties for:

- **Sensor-General** — Status and temperature of disk drive.
- **Sensor-Thresholds**
- Blowers
  - **Blower 1** — Shows the status of the blower on the left (looking at the back) of the disk enclosure.
  - **Blower 2** — Shows the status of the blower on the right-hand corner in front of the enclosure.
  - Characteristics include operational state, requested speed (as requested by the EMU), and actual speed.

Click each name at the top to view its properties.

### Sensor — General properties

This page displays the state and temperature of the disk drives noted by the temperature sensors in the disk enclosure. There are 17 temperature sensors located as follows:

- One in each enclosure power supply
  - Power Supply 1 (PS1TEMP)
  - Power Supply 2 (PS2TEMP)
- One in the EMU (EMUTEMP)
- One in each disk drive (DiskxTemp)

The statuses are:

- **OK** — Temperature is within specification
- **Critical** — Temperature is outside the specification, making continued normal operation impossible.
- **Noncritical** — Temperature is outside the specification, but normal operation is still possible.
- **NotInstalled** — The module containing the sensor is not installed.
- **NotAvailable** — The power supply is installed, but the AC is unplugged or failed. This applies only to the power supply sensors.

**Example**

This example shows the Sensor-General properties, which include status and temperature detected by each sensor.

**Disk Enclosure Properties**

Temperature Sensor General Properties			
Sensor	Status	Temperature	Alarms
PS1TEMP	OK	96.8°F / 36.0°C	None
PS2TEMP	OK	91.4°F / 33.0°C	None
EMUTEMP	OK	77.0°F / 25.0°C	None
DISK1TEMP	OK	87.8°F / 31.0°C	None
DISK2TEMP	OK	82.4°F / 28.0°C	None
DISK3TEMP	OK	82.4°F / 28.0°C	None
DISK4TEMP	OK	75.2°F / 24.0°C	None
DISK5TEMP	OK	77.0°F / 25.0°C	None
DISK6TEMP	OK	73.4°F / 23.0°C	None
DISK7TEMP	OK	75.2°F / 24.0°C	None
DISK8TEMP	OK	80.6°F / 27.0°C	None
DISK9TEMP	OK	80.6°F / 27.0°C	None
DISK10TEMP	OK	84.2°F / 29.0°C	None
DISK11TEMP	OK	80.6°F / 27.0°C	None
DISK12TEMP	OK	75.2°F / 24.0°C	None
DISK13TEMP	OK	87.8°F / 31.0°C	None
DISK14TEMP	OK	93.2°F / 34.0°C	None

## Sensor — Thresholds properties

The following shows Sensor-Threshold properties. These are not settable.

### Example

## Disk Enclosure Properties

Locate <span style="float: right;">?</span>					
General		Power		Cooling	I/O-Comm
Sensor-General		Sensor-Thresholds		Blower 1	Blower 2
Temperature Sensor Thresholds					
	Undertemperature		Overtemperature		
Sensor	Warning Level	Critical Level	Warning Level	Critical Level	
PS1	48.2°F / 9.0°C	41.0°F / 5.0°C	122.0°F / 50.0°C	140.0°F / 60.0°C	
PS2	48.2°F / 9.0°C	41.0°F / 5.0°C	122.0°F / 50.0°C	140.0°F / 60.0°C	
EMU	48.2°F / 9.0°C	41.0°F / 5.0°C	111.2°F / 44.0°C	118.4°F / 48.0°C	
DISKSLOT1	48.2°F / 9.0°C	41.0°F / 5.0°C	114.8°F / 46.0°C	134.6°F / 57.0°C	
DISKSLOT2	48.2°F / 9.0°C	41.0°F / 5.0°C	114.8°F / 46.0°C	134.6°F / 57.0°C	
DISKSLOT3	48.2°F / 9.0°C	41.0°F / 5.0°C	114.8°F / 46.0°C	134.6°F / 57.0°C	
DISKSLOT4	48.2°F / 9.0°C	41.0°F / 5.0°C	114.8°F / 46.0°C	134.6°F / 57.0°C	
DISKSLOT5	48.2°F / 9.0°C	41.0°F / 5.0°C	114.8°F / 46.0°C	134.6°F / 57.0°C	
DISKSLOT6	48.2°F / 9.0°C	41.0°F / 5.0°C	114.8°F / 46.0°C	134.6°F / 57.0°C	
DISKSLOT7	48.2°F / 9.0°C	41.0°F / 5.0°C	114.8°F / 46.0°C	134.6°F / 57.0°C	

## Blower properties

The blower properties allow you to see the operational state and speed of blowers 1 and 2.

### Example showing Blower 1

## Disk Enclosure Properties

Locate				?
General	Power	Cooling	I/O-Comm	
Sensor-General	Sensor-Thresholds	Blower 1	Blower 2	
<b>Blower 1</b>				
<b>Condition/State:</b>				
<b>Operational state:</b>	<input checked="" type="checkbox"/> Good			
<b>Speed:</b>				
<b>Actual Speed:</b>	Second Lowest			

## Disk enclosure I/O communication properties

On the Disk Enclosure I/O communications page, you can view properties for:

- I/O ports
  - Module and link operational state
  - Transceiver installation state
- Communication buses
  - Operational state of internal and external buses
  - Enabled or disabled status

Click *I/O Ports* or *Communication Buses* at the top to view properties of each.

### Example — I/O Communication

This example shows the I/O Ports properties:

- Module A and B operational statuses are OK.
- Link operational status for each port is good.
- Transceiver installation status for each port is OK.

## Disk Enclosure Properties

Locate					?		
General		Power		Cooling		I/O-Comm	
I/O Ports			Communication Buses				
I/O Modules							
	Module A:		Module B:				
Operational state:	Good		Good				
Fibre Channel Ports							
	Port A1:	Port A2:	Port B1:	Port B2:			
Link Operational state:	Good	Good	Good	Good			
SFP Installation state:	OK	OK	OK	OK			

### Note

Point out that in switched hardware configurations (loop switches) for VCS version 2.002 and before, if the unused I/O module transceiver slot actually has a transceiver, then a link state of Failed will be reported. If the unused I/O module does **not** contain a transceiver, the link state will be Not Installed or Not present.

## I/O module port numbers

Command View EVA refers to the physical ports oppositely to their physical configuration, that is, the top and bottom hardware ports are port 1 and port 2, respectively; the top and bottom ports viewed through Command View EVA are port 2 and port1, respectively.





## Disk enclosure communication buses

The **Locate** button at the top of this page enables you to flash the locate LED in the lower right-hand corner on the front of the enclosure.

### Example

## Disk Enclosure Properties

Locate		?		
General		Power		
Cooling		I/O-Comm		
I/O Ports		Communication Buses		
<b>EMU Buses</b>				
	<b>Internal Bus:</b>		<b>Rack Bus:</b>	
<b>Operational state:</b>	<input checked="" type="checkbox"/> Good	<input checked="" type="checkbox"/> Good		
<b>Enabled/Disabled:</b>	Enabled		Enabled	

## Disk enclosure bay properties

To display the Disk Enclosure Bay Properties, select a bay from the disk enclosure folder and then select a disk bay. Select the tabs on the page to display the following properties:

- Disk bay properties
- Disk drive properties

### Disk bay properties

On the Disk Enclosure Bay Properties, Disk Bay page, you can view the location of each disk bay in a disk enclosure and determine if it is currently populated.

#### Example

This example shows where Disk Bay 12 is located in the disk enclosure.

## Disk Enclosure Bay Properties

Save changes	Code load	Locate	?
Disk Bay		Disk Drive	
<b>Bay Identification</b>		<b>Condition/State</b>	
<b>Name:</b>	Disk Bay 12	<b>Operational State:</b>	<input checked="" type="checkbox"/> Populated (data disk)
<b>Bay ID:</b>	12	<b>Location</b>	
<b>Enclosure ID:</b>	10		
<b>Loop Pair:</b>	LoopPair2		
<b>Comments</b>			
<input type="text"/>			

The *Code load* button enables you to download firmware to the EMU.

## Disk enclosure bay disk drive properties

On the Disk Enclosure Bay Properties, Disk Drive page, you can view properties for a specific disk drive located in the bay such as:

- Identification
- System information
  - Disk drive usage
  - Disk group name
  - Disk Group
  - Occupancy
  - RSS ID and RSS Index
- Condition and state of disk drive and loops
- Physical information
  - Physical drive type
  - Firmware revision
  - Formatted capacity
- Bay location

## Example

This example shows that Disk 015 is located in Bay 12. The physical characteristics are:

- Type — Fibre Channel Disk
- Firmware revision — 3BE3
- Formatted capacity — 33.91GB

## Disk Enclosure Bay Properties

Ungroup	Locate	Code load	Remove	?
---------	--------	-----------	--------	---

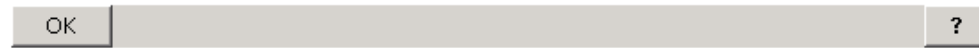
Disk Bay		Disk Drive	
<b>Identification</b>		<b>Condition/State</b>	
Name:	Disk 015	Operational state:	<input checked="" type="checkbox"/> Good
Loop Pair:	LoopPair2	Migration state:	<input checked="" type="checkbox"/> Not migrating
Node World Wide Name:	2000-0004-CF2F-9434	Failure prediction:	<input checked="" type="checkbox"/> No
UID:	2000-0004-cf2f-9434-0000-0000-0000-0000	Media accessible:	<input checked="" type="checkbox"/> Yes
<b>Physical</b>		<b>Ports</b>	
Type:	Fibre Channel Disk	<b>Loop A:</b>	
Manufacturer:	COMPAQ	Port World Wide Name:	2000-0004-CF2F-9434
Model number:	BD03654499	Assigned LUN:	0
Firmware version:	3BE3	Loop ID:	51
Formatted capacity:	33.91 GB	Operational state:	<input checked="" type="checkbox"/> Good
<b>System</b>		ALPA:	54
Requested usage:	Grouped	<b>Loop B:</b>	
Actual usage:	Grouped	Port World Wide Name:	2000-0004-CF2F-9434
Disk group:	Scratch Disks	Assigned LUN:	0
Occupancy:	26.02 GB	Loop ID:	51
RSS ID:	3	Operational state:	<input checked="" type="checkbox"/> Good
RSS index:	8	ALPA:	54
Locate RSS:	<input type="button" value="Locate"/>		
<b>Location</b>			
Enclosure ID:	10		
Bay ID:	12		

## Disk drive removal

To remove a disk, use the *Remove* button.

### Example

#### Remove Disk



The location indicator on the disk drive you have selected is flashing.

Remove the disk drive from its enclosure and click the **OK** button to complete the removal operation.



#### Important

Always use the *Remove* button before removing drives. If the drive is a member of a disk group, you will get a message to remove it from the disk group before removing it.

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## Learning check

1. Name the five management agent options that you can set from Command View EVA.  
.....  
.....
2. Which of the following elements is required to set a storage system password in Command View EVA?
  - a. Storage System World Wide Name
  - b. Storage system name assigned when the system is initialized
  - c. Ten digit password
  - d. Host system World Wide Name
3. How do you navigate to the Rack Properties page?  
.....  
.....
4. From the Controller Properties page, you can view which of the following?
  - a. Blower properties
  - b. VCS revision number
  - c. Power supply 1 and power supply 2 properties
  - d. Temperature sensors
5. For the HSV controllers what is the last character of the port WWID for each of the following?
  - a. controller A, host port 1
  - b. controller A, host port 2
  - c. controller B, host port 1
  - d. controller B, host port 2