Introduction

- This module describes the process of configuring the storage system using Command View EVA
- Configuration of hosts is covered later
- Information applies to Command View EVA 9.0
- Compatible with several versions of XCS code
- XCS 6.200 and 09500000 is recommended for full functionality
- Module contents
- Command View EVA user interface and how to access online help
- Performing a code load and initializing the storage system
- Creating disk groups, virtual disks, snapshots, snapclones, and mirrorclones
- Overview of best practices for configuring the EVA
- Knowledge of the configuration process will allow you to understand the customer's application of these processes to their storage systems

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Objectives

- List the components of the Command View EVA interface
- Describe how to access system, page, and field help
- List the steps in the storage system configuration process
- Describe how to create disk groups, virtual disks, snapshots, snapclones, and mirrorclones
- List the primary factors that influence configuration best practices on the EVA

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Setup and configuration overview

Step	Responsibility
Gather information and identify all related storage documentation	Customer
Contact an authorized service representative for hardware configuration information	Customer
Set up the hardware	Service Engineer
Enter the World Wide Name (WWN) into the OCP	Service Engineer
Configure HP Command View EVA	Service Engineer
Prepare the hosts	Customer
Configure the system through HP Command View EVA	Service Engineer
Make virtual disks available to their hosts	Service Engineer

Covered in this module →

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Configuring the system with Command View EVA

- Command View EVA
  - GUI that controls and monitors the storage system
  - Software that supports the GUI
  - Allows configuration of storage system
- Each installation of Command View EVA on the management server is a storage management agent
- The client for the agent is a standard Internet browser

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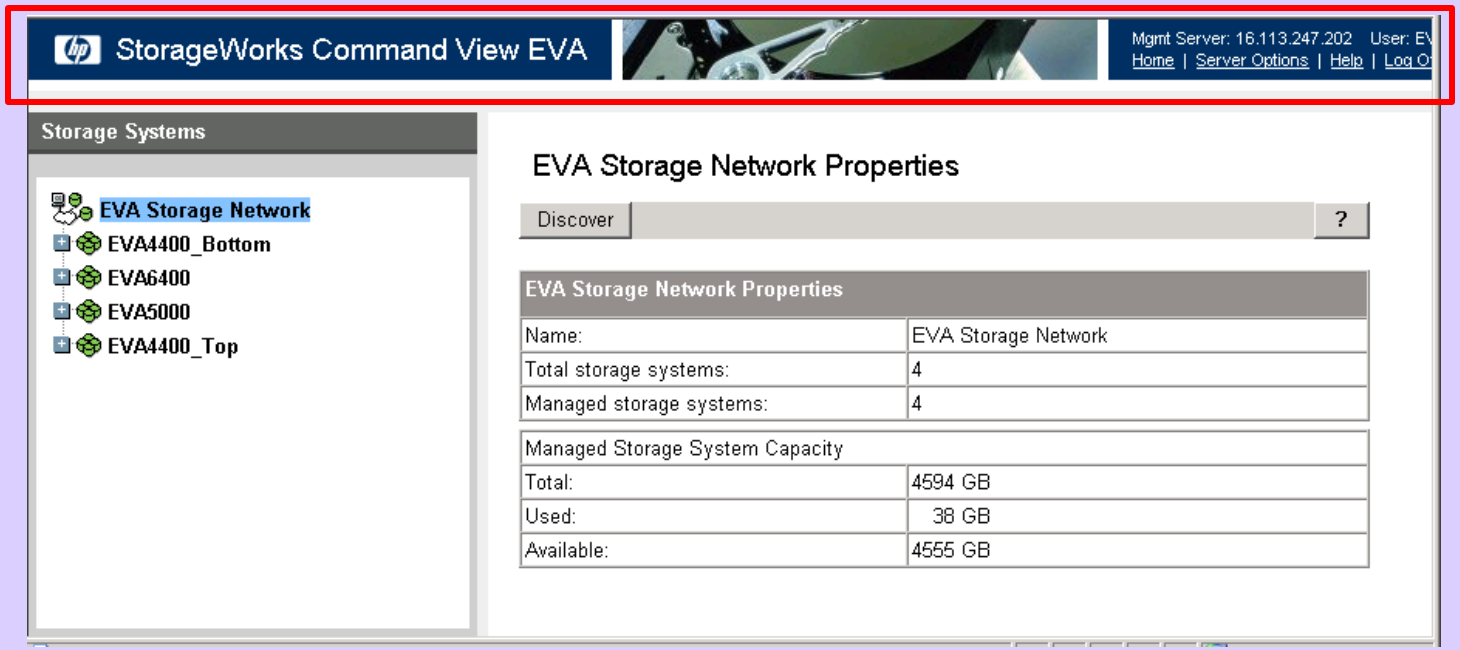
GUI layout — Session pane

- IP address and management server and user name
- Menu options
  - Home — Displays the HSV Storage Network Properties page
  - Server Options — Selects interface and management agent options
  - Help — Displays online help in a new window
  - Log Off — Logs you off the system and closes GUI



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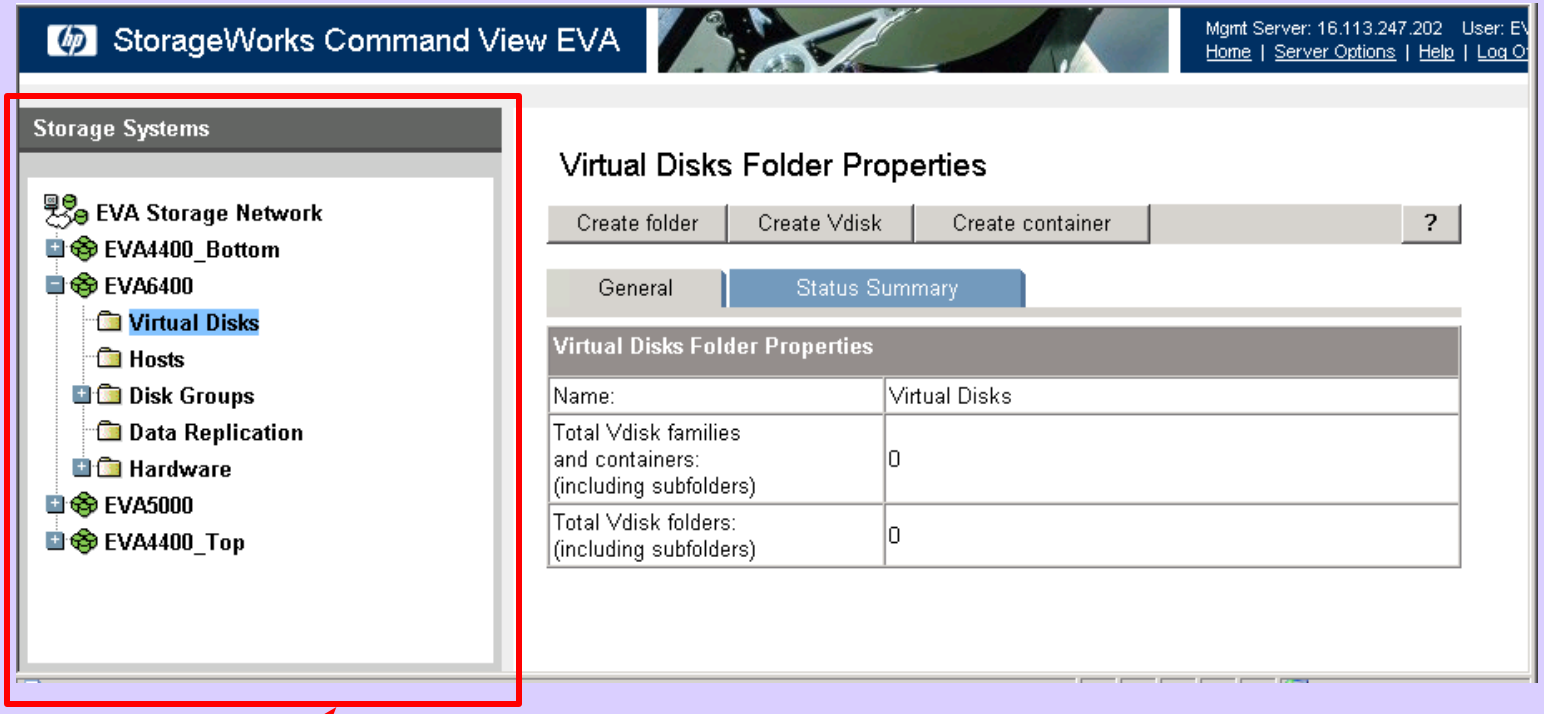
GUI layout — Navigation pane

Directory tree structure with folders

- Default folders — Virtual disks, hosts, disk groups, data replication, hardware
- You can create folders for virtual disks and hosts



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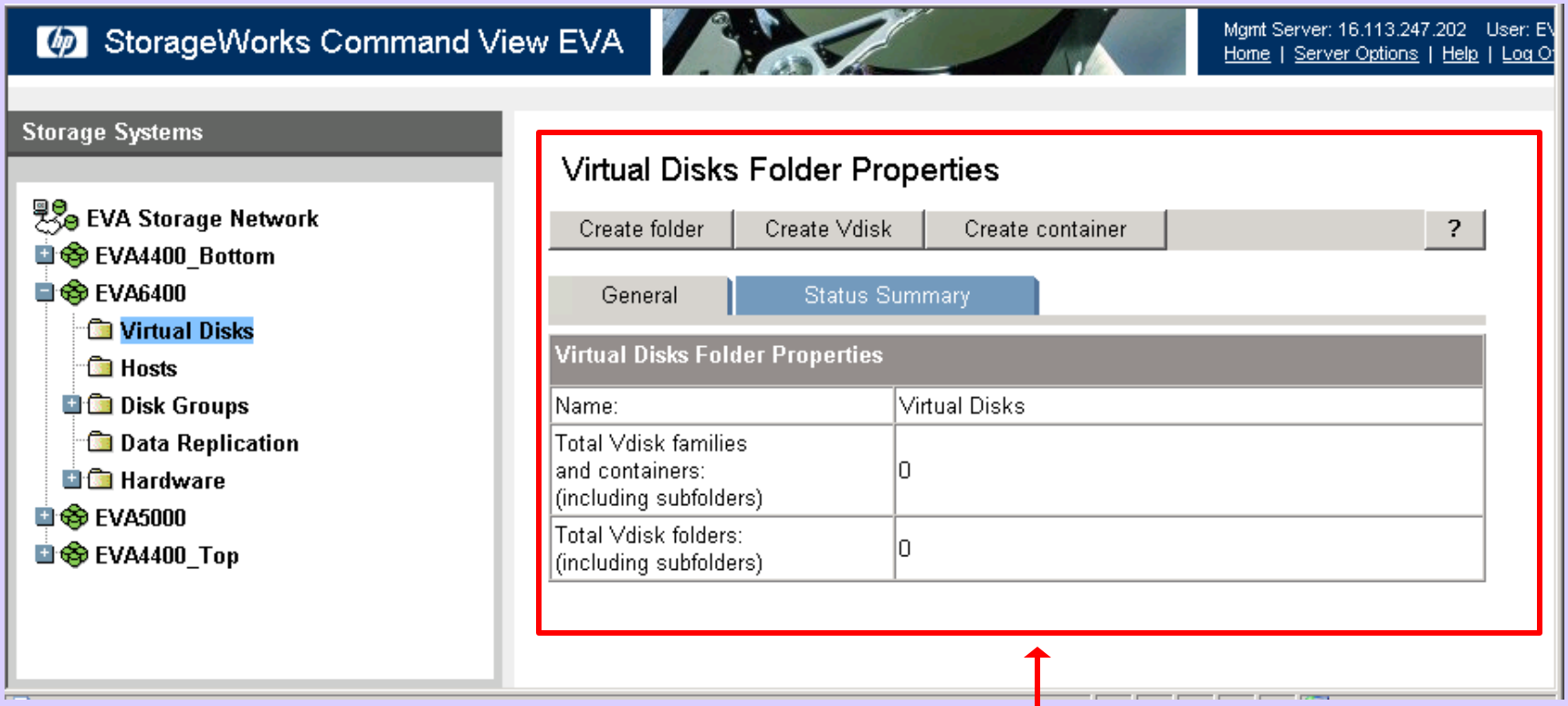
GUI layout — Content pane

- Where most activity takes place
- Information displayed depends upon Navigation pane selection



Content pane

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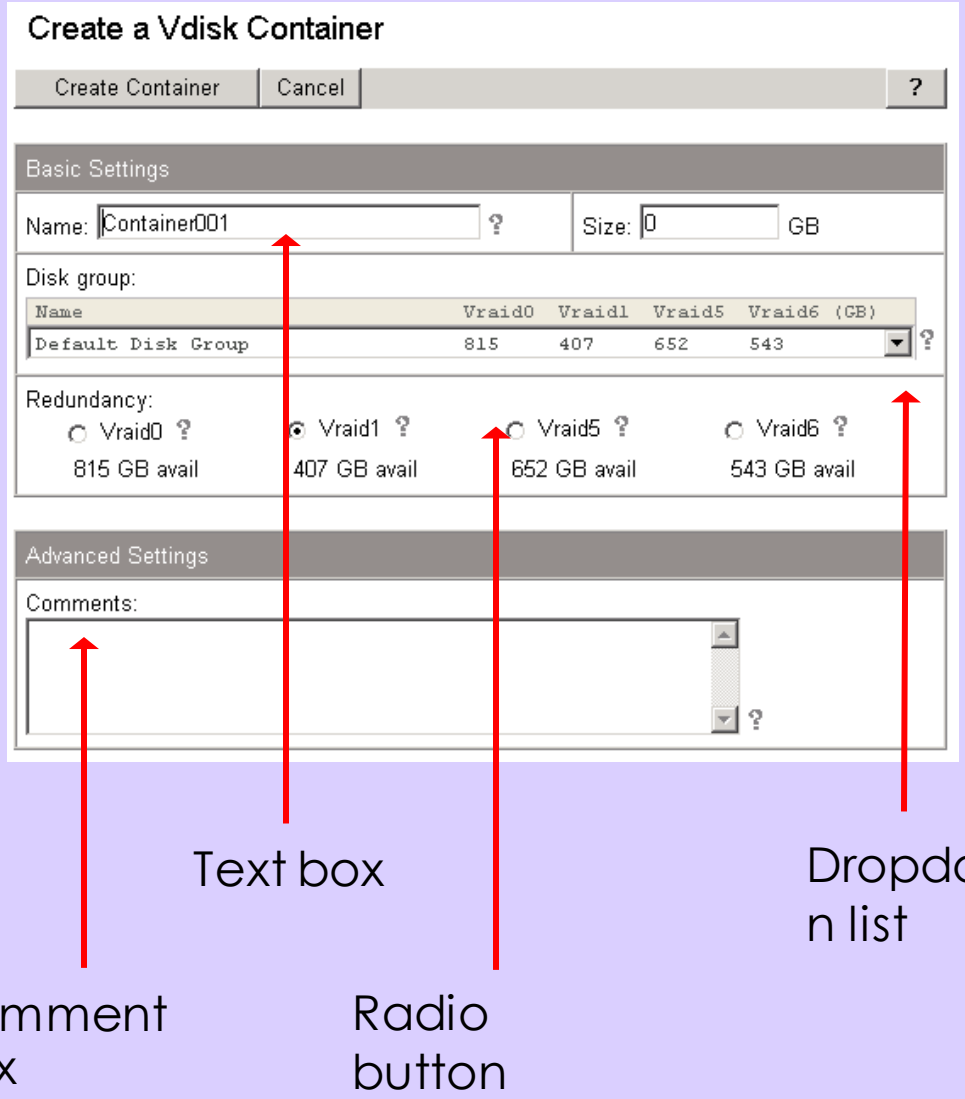
Learning check 1

What information displays in the Command View EVA Session pane?

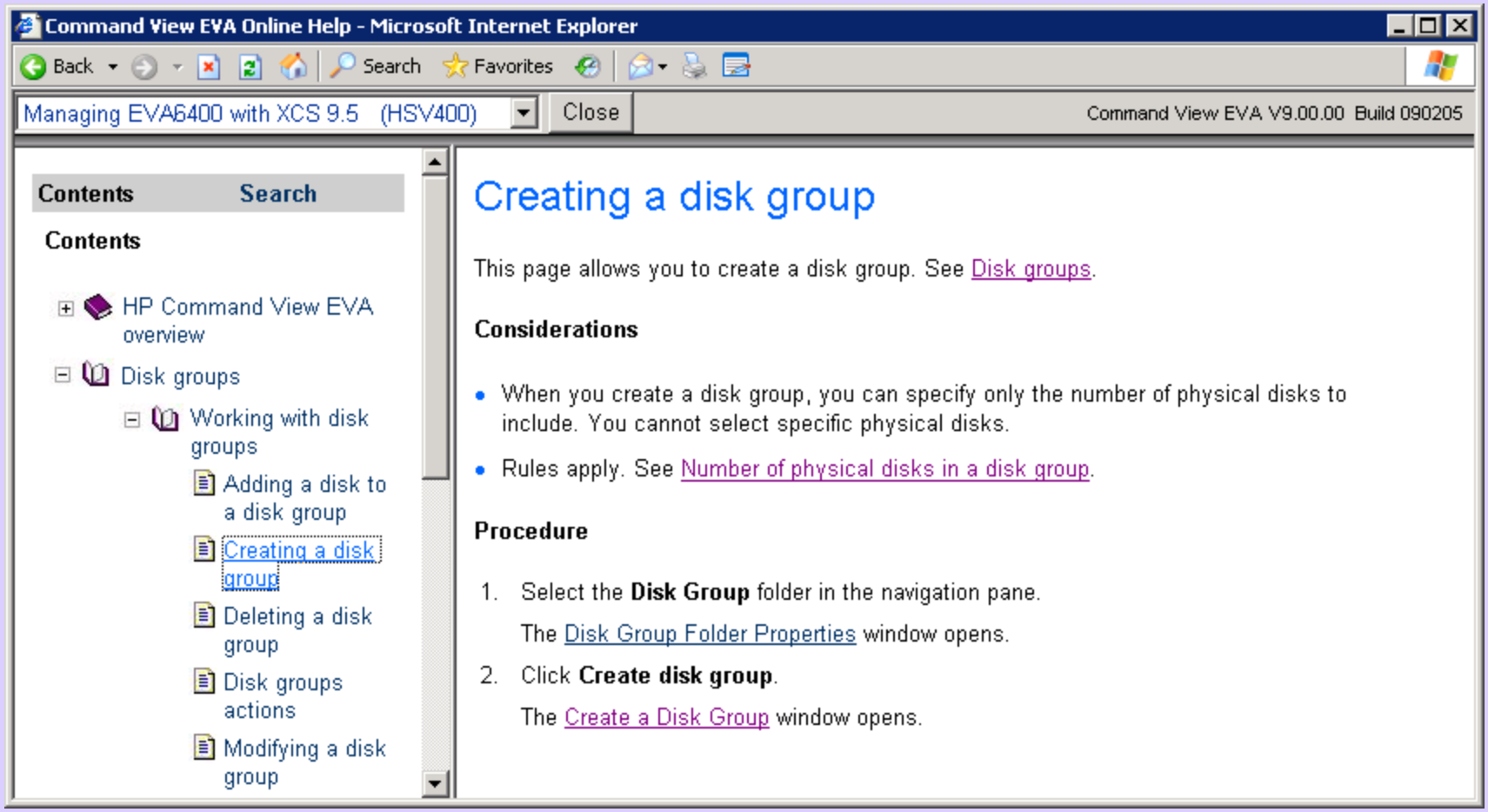
Data entry

- Text boxes — Enter text in a standard format
- Drop-down lists — Select from a list of choices
- Radio buttons — Click the button next to the choice
- Comment boxes
  - Enter text (boxes) up to 128 characters
  - For comments in a central place, for example, hardware locations



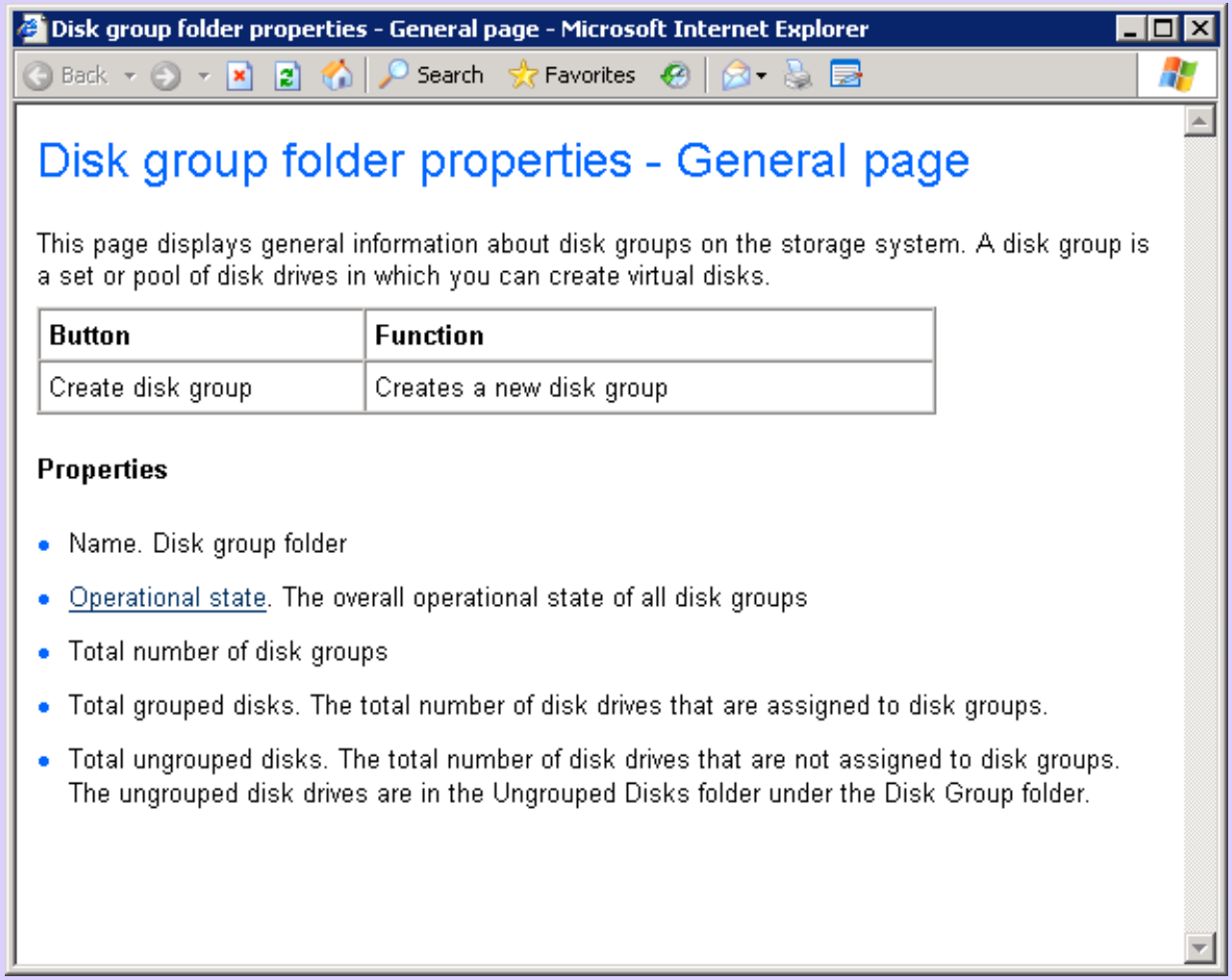
Command View EVA online help (1 of 3)

Application help



Command View EVA online help (2 of 3)

Page help



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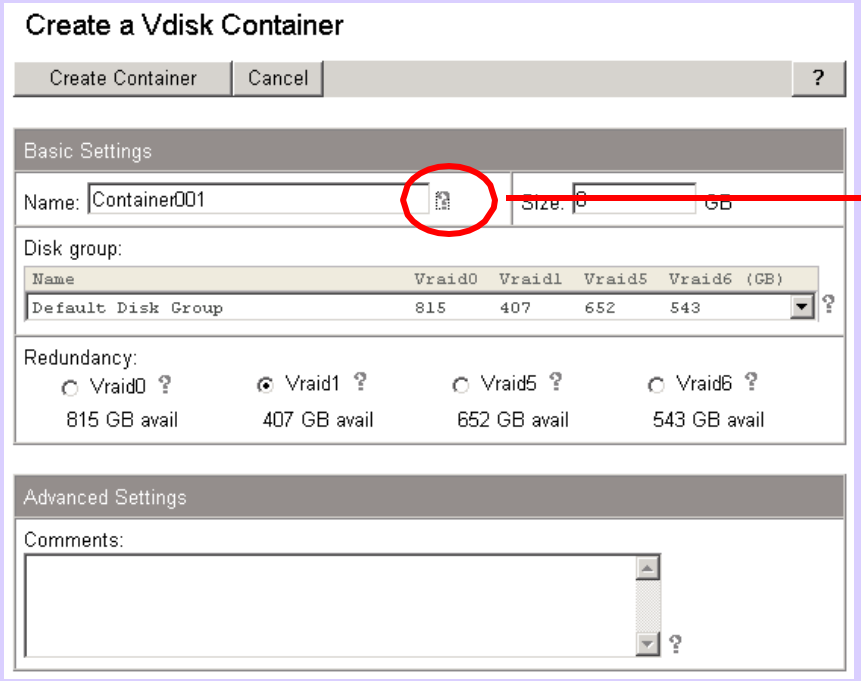
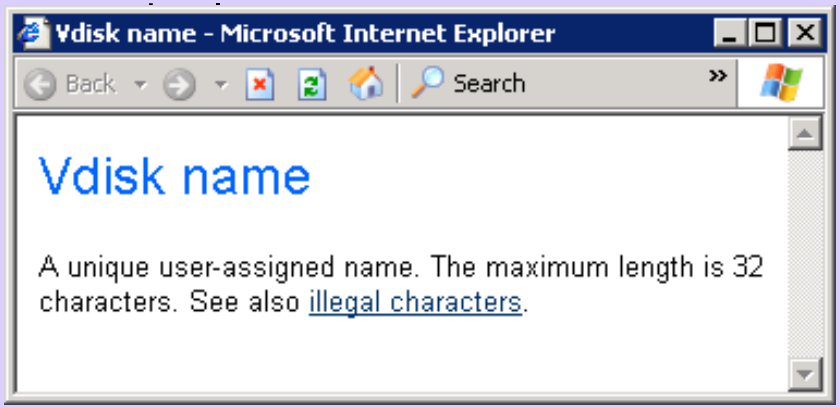
Command View EVA online help (3 of 3)

Field help



Resulting field-level



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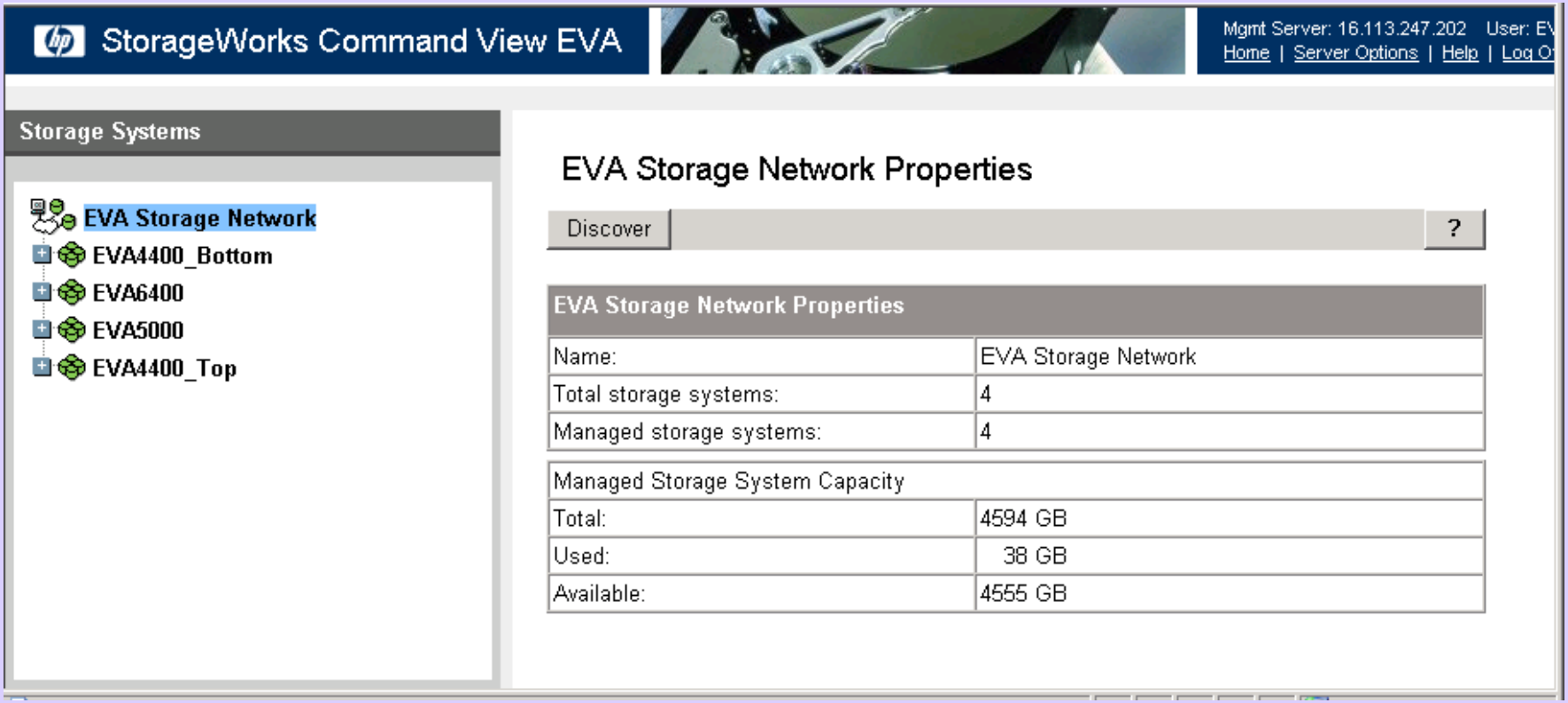
Command View EVA home page



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Learning check 2

How do you access system help, page help, and field help?

Configuration process steps

1. Gather preliminary information
   a. Develop a requirements list per server
   b. Create a list of all FCAs
   c. Determine the host WWN
2. Synchronize controller time with SAN management time
3. Perform a software code load (if necessary)
4. Initialize the storage system
5. Perform online disk drive code loads (if necessary)
6. Create additional disk groups as desired
7. Install and configure hosts
8. Create the hosts
9. Create the virtual disks
10. Create snapshots, snapclones, and mirrorclones

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Gathering preliminary information (1 of 3)

- Develop a requirements list per server
  - Virtual disk characteristics
    - Size (GB)
    - Virtual RAID level (VRAID0, VRAID5, VRAID6, and VRAID1)
    - Operating system LUN identifier (used for OpenVMS and Tru64 UNIX)
  - Which virtual disks can share a disk group
- Create a list of all FCAs
  - WWID of FCAs in the servers
  - Fibre Channel switch port
  - Operating system or server

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Gathering preliminary information (2 of 3)

- Determine the host WWN
  - OpenVMS
    - $ Analyze/system
    - SDA> FC SHOW DEVICE FGA0 (FGB0, and so on)
    - Alpha SRM console

      SHOW DEVICE
  - Windows
    - HBAnywhere
    - QLogic SANsurfer
  - SUN Solaris
    - /var/adm/messages (only if adapter driver is loaded)

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Gathering preliminary information (3 of 3)

- Determine the host WWN (continued)
  - IBM AIX
    - lsconfig
  - HP-UX
    - fcmsutil or tdutil

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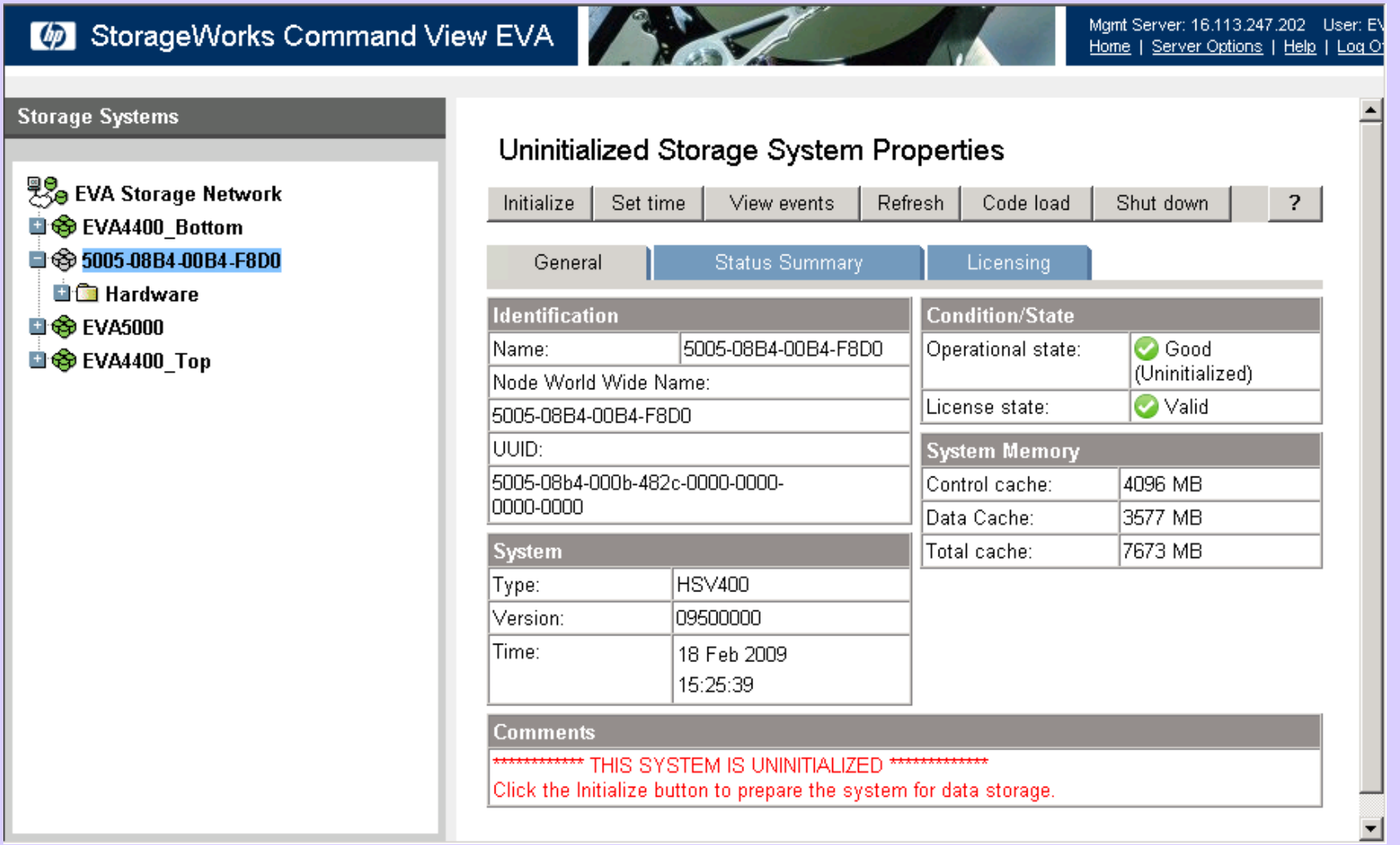
Learning check 3

What are the steps used for storage system configuration?

Starting with the uninitialized storage system



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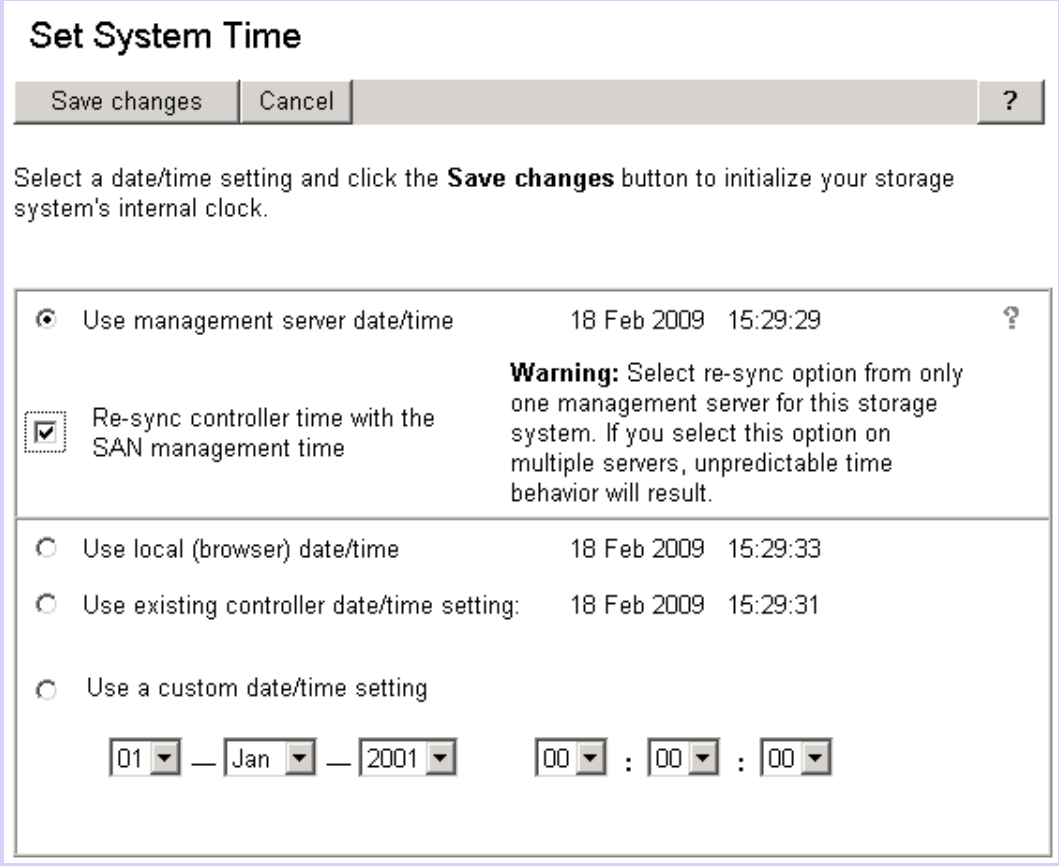
Synchronizing time

- You should always synchronize controller time with SAN management time
- On the Uninitialized HSV Storage System Properties page, click the Set time button to display the Set System Time page
- Select Use management server date/time and Re-sync controller time with the SAN management time, and then click Save changes



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Performing a controller code load

- Loads a superfile (.sss) that updates
  - XCS
  - EMU firmware (not for EVA 4400/6400/8400)
  - Parse file on the management server for event translation
- Loaded from a browser on a client
- Controller fast boots after XCS is updated
- File must be properly formatted
- Download to single storage system only
- Error aborts processing

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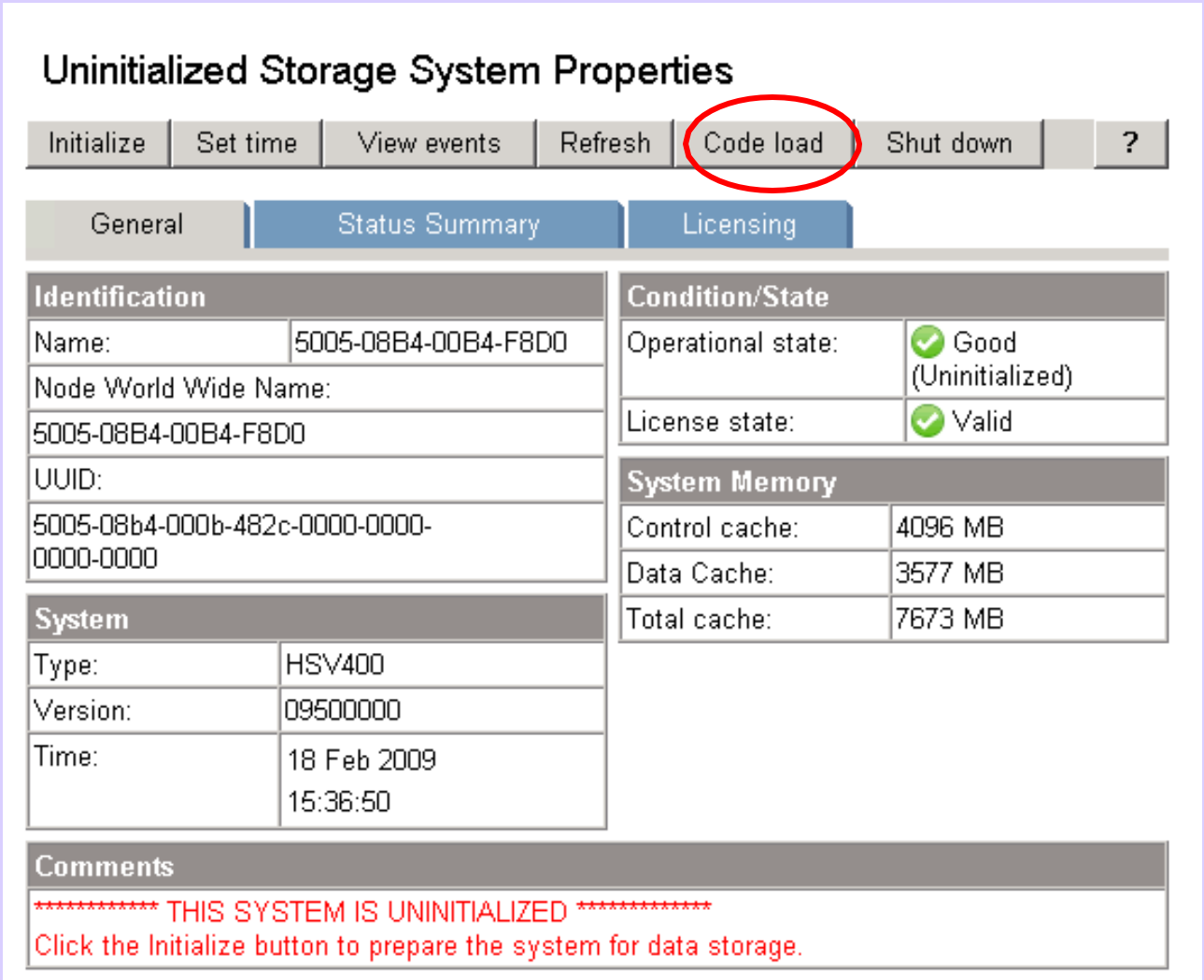
Code load start



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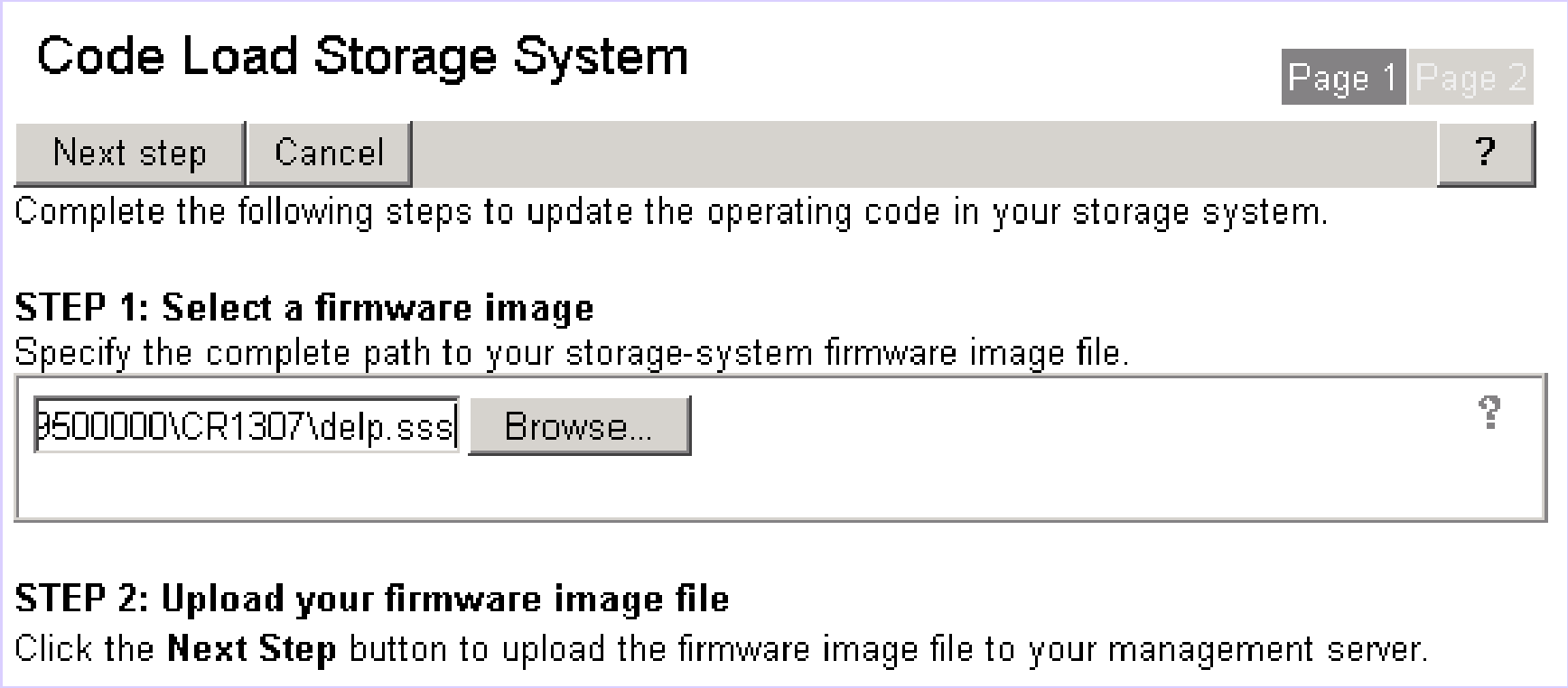
Performing a code load (1 of 4)



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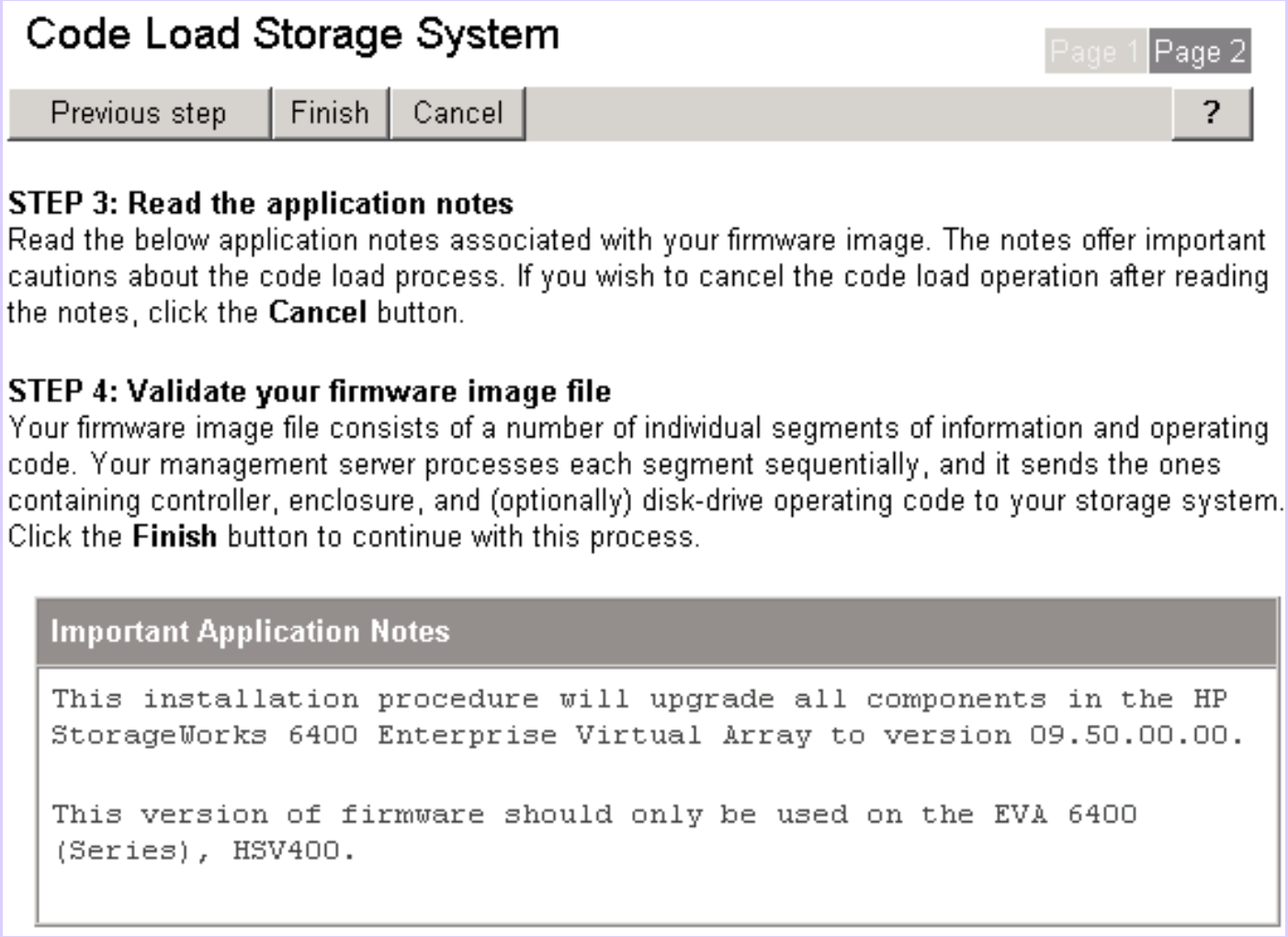
Performing a code load (2 of 4)



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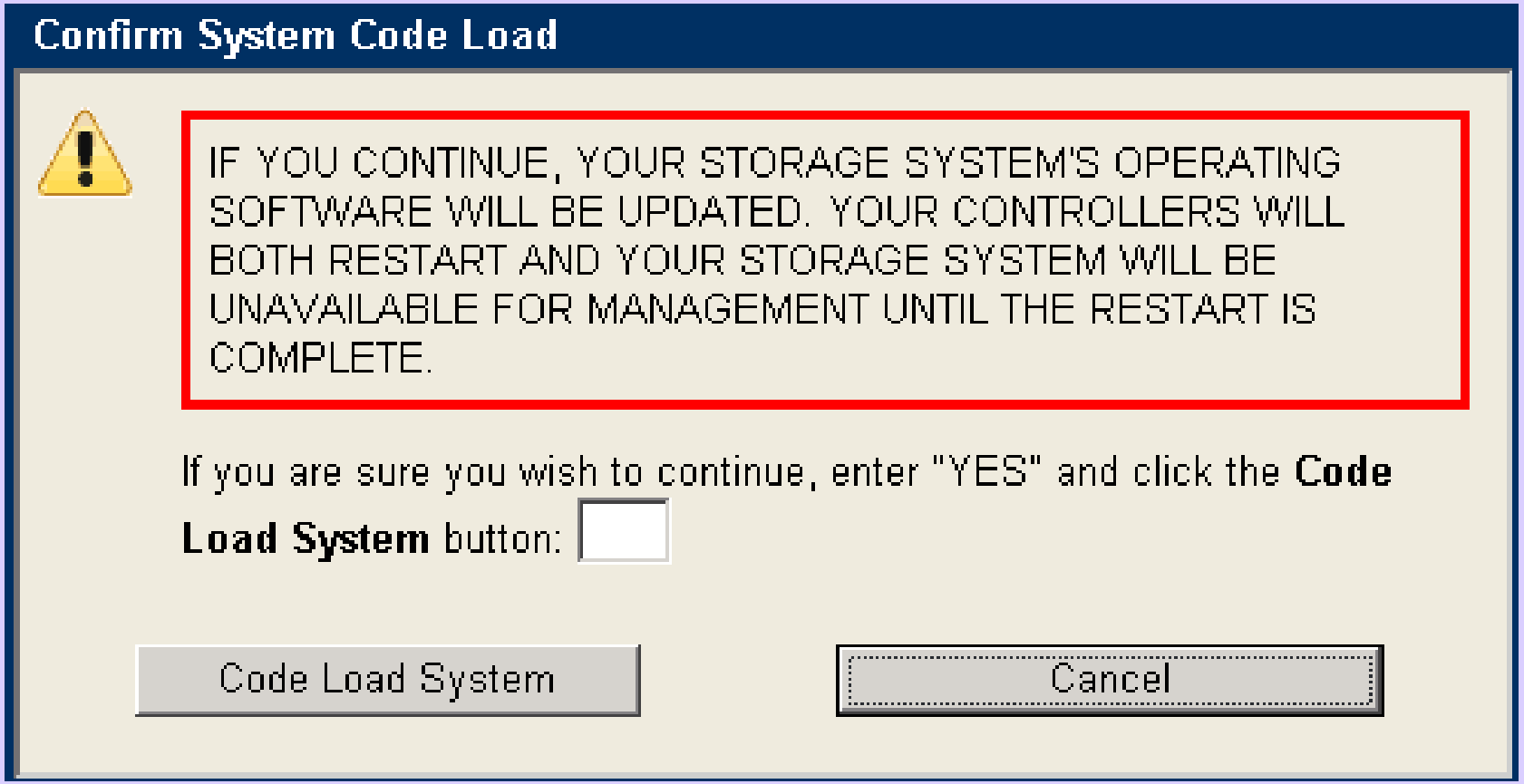
Performing a code load (3 of 4)



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Performing a code load (4 of 4)

(Caution: Do not use the browser Back button to access this page. Doing so will duplicate the current action.)

Processing 10 firmware image segments. Please wait...

Please wait while your management server processes your firmware image file and sends the individual code segments in the file to your controllers for validation. This process may take several minutes.

8 of 10 segments processed and transferred

Current segment			
#	Name	Size	Status
9	Functional image	2,662,412 bytes	Processing

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Initializing the storage system

- Creates a usable storage system
- Binds controllers as operational pair
- Establishes preliminary data structures on the disk array
- Creates the default disk group
- Only must be done first time you configure the storage system or if the storage system is uninitialized

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Levels of metadata (1 of 2)

Three levels of EVA metadata

1. Storage system-level quorum disks
   - Holds controller information
     - WWN
     - Storage system name
     - Character map of disk groups and virtual disk members, but not virtual disk chunk mappings
   - Quorum disk requirements
     - Minimum of two quorum disks to boot HSV controllers
     - Minimum of five quorum disks
     - Maximum of 16 quorum disks (One per disk group)
     - Storage requirements are pre-allocated at 0.03% on each disk

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Levels of metadata (2 of 2)

2. Disk group metadata
   - Disk group characteristics
     - Number of spindles
     - Spare space allocation
   - Virtual disk chunk mapping
3. Command View EVA metadata
   - The management logical disk (MLD) provides metadata for Command View EVA
   - Devoted to the management server
   - Spread across metadata area on all disks in disk groups
   - Holds backup copy of current controller configuration
   - Holds controller events and controller data such as trap host lists and license lists

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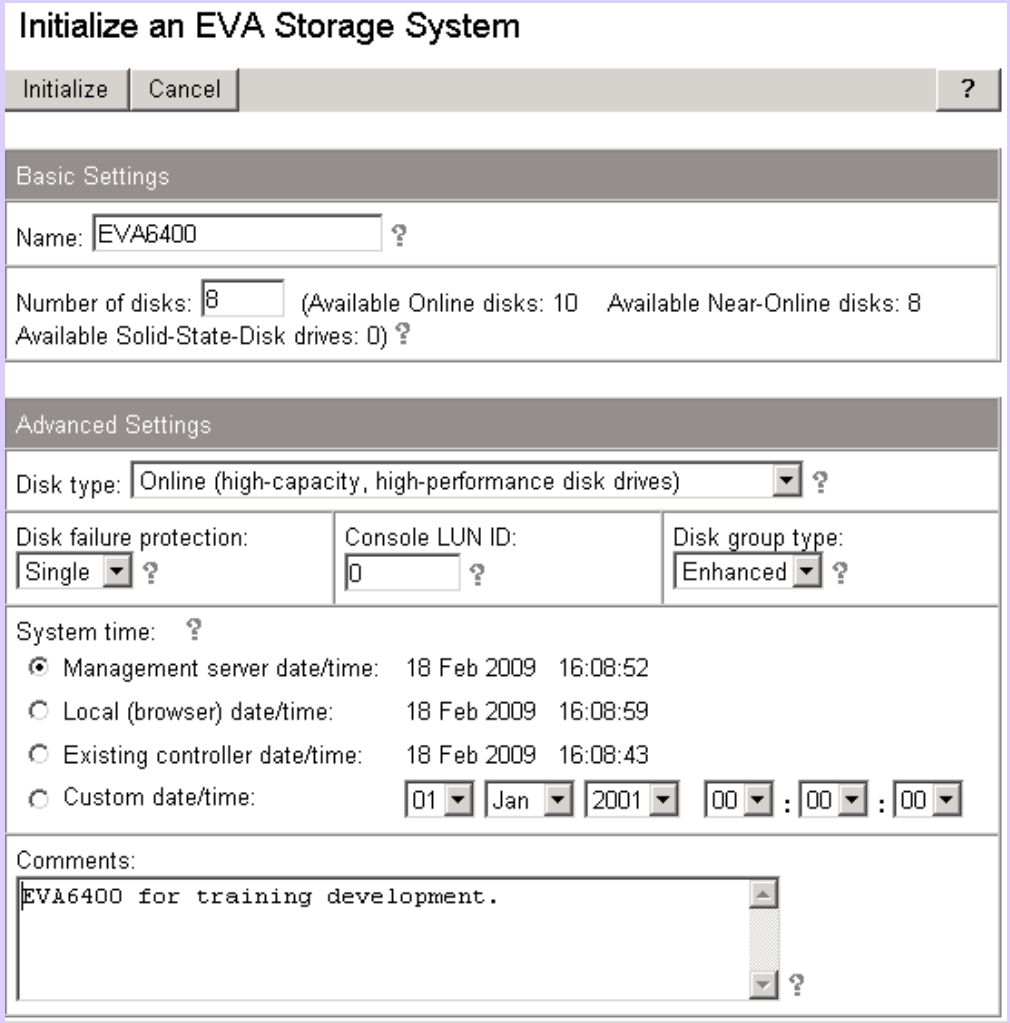
Initialize an EVA Storage System page (1 of 2)



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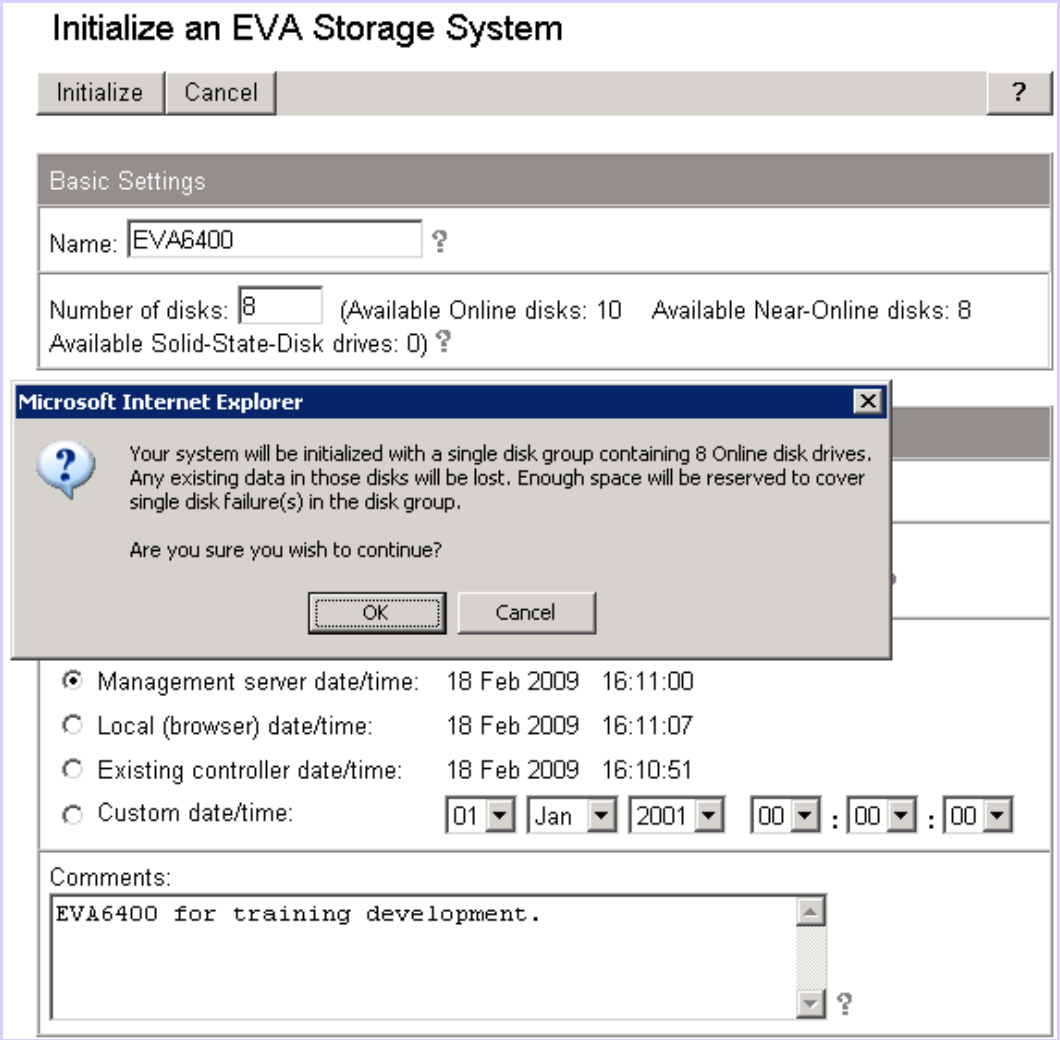
Initialize an EVA Storage System page (2 of 2)



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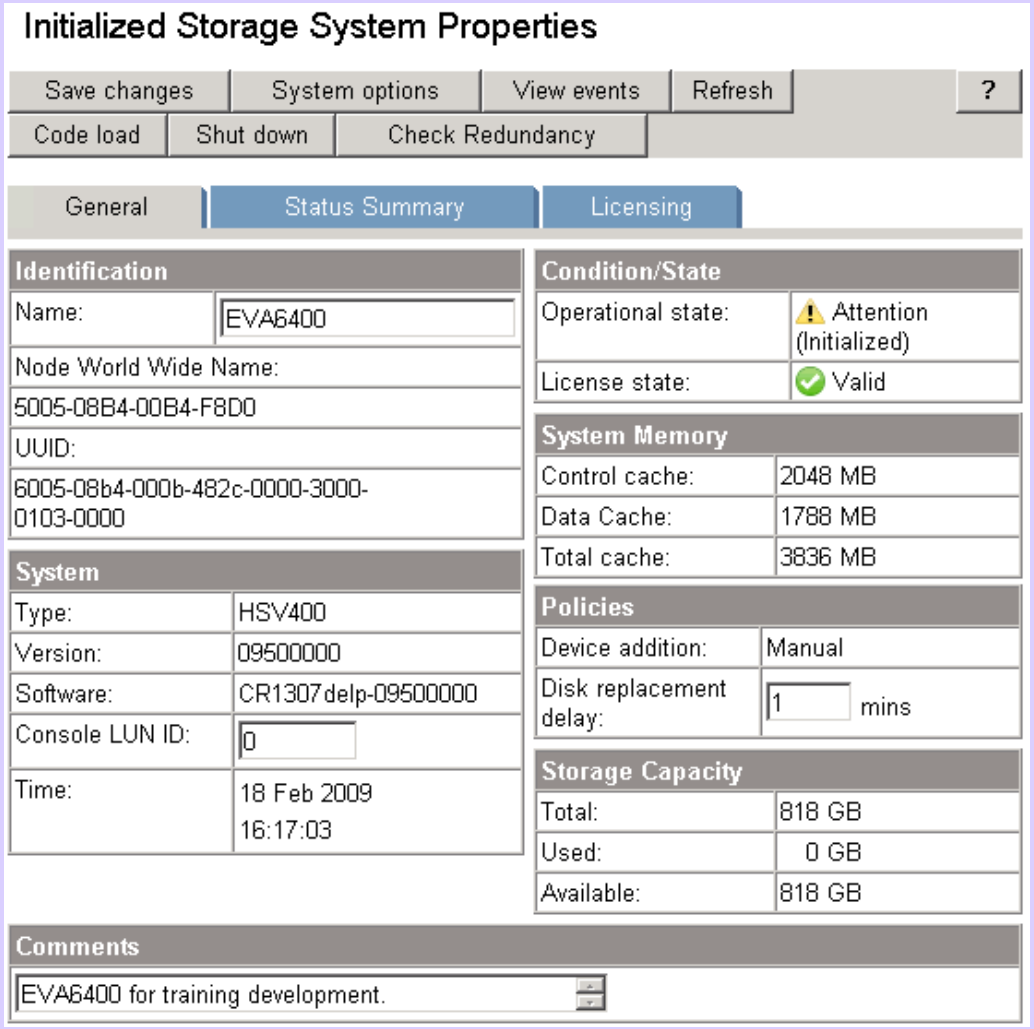
Initialized Storage System Properties page



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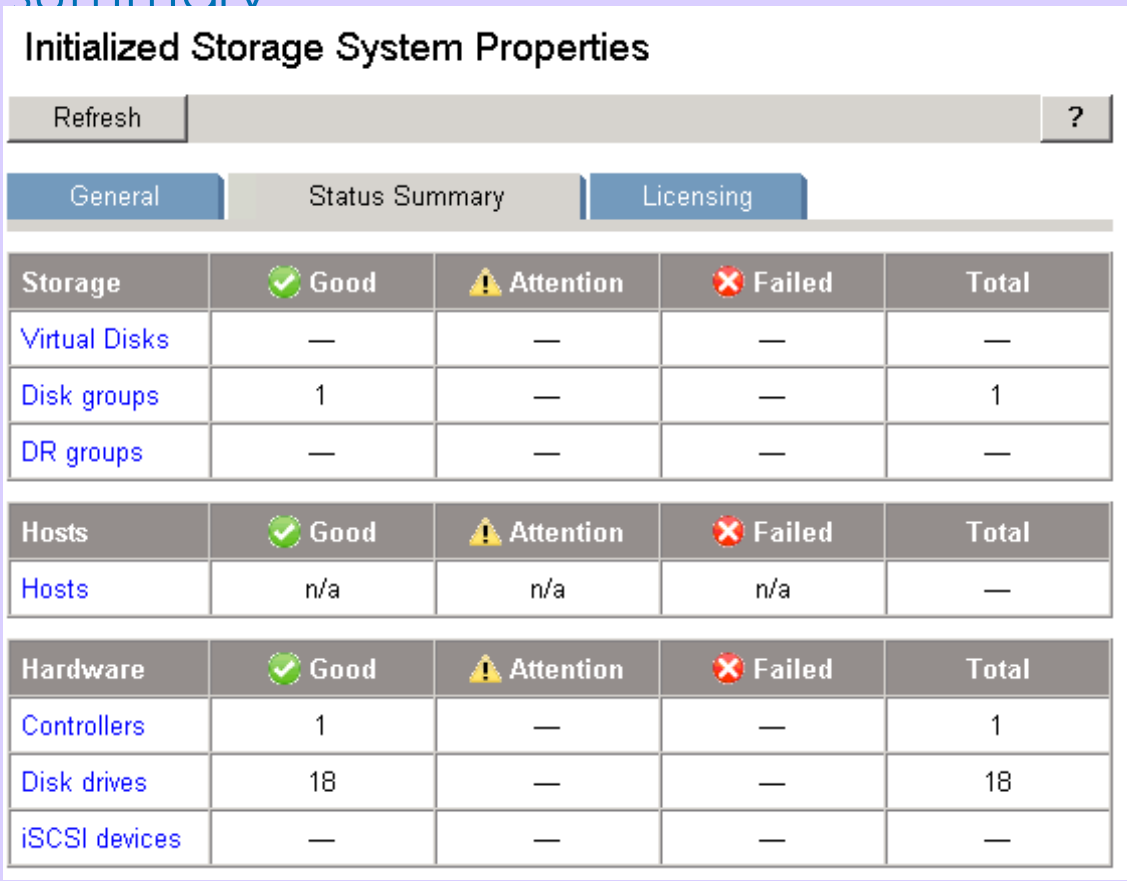
Status summaries

Use the Status Summary button to get a system summary, virtual disk summary, disk group summary, and data replication summary



Initialized Storage System Properties

Refresh ?

General | Status Summary | Licensing

Storage	Good	Attention	Failed	Total
Virtual Disks	—	—	—	—
Disk groups	1	—	—	1
DR groups	—	—	—	—

Hosts	Good	Attention	Failed	Total
Hosts	n/a	n/a	n/a	—

Hardware	Good	Attention	Failed	Total
Controllers	1	—	—	1
Disk drives	18	—	—	18
iSCSI devices	—	—	—	—

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Code load disk drives globally (1 of 4)

General process for using bundled firmware

- Locate the zip file that contains the bundled hard drive firmware, something like the following
  - HDDBundled_Image_2008_12_15.zip
- Double-click the zip file
- Double-click the self-extracting zip file (.exe) and unzip the file to the c:\Program Files\Hewlett-Packard\sanworks\ coadload folder
- Create a zip file (for example, my_codeload.zip) from the contents of the folder
- Select your initialized storage system
- Click Code Load, then OK

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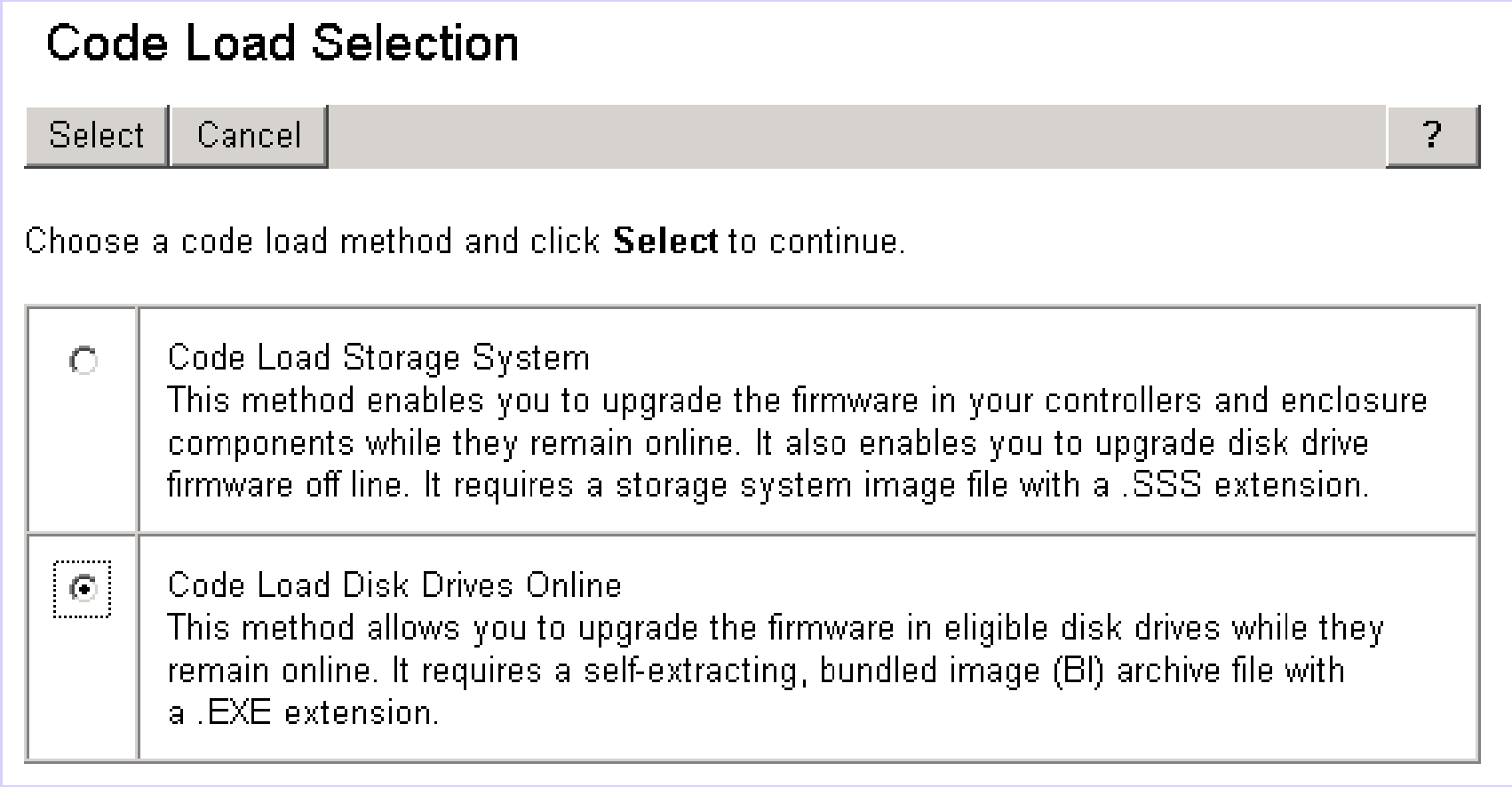
Code load disk drives globally (2 of 4)

Select Code Load Disk Drives Online and click Select



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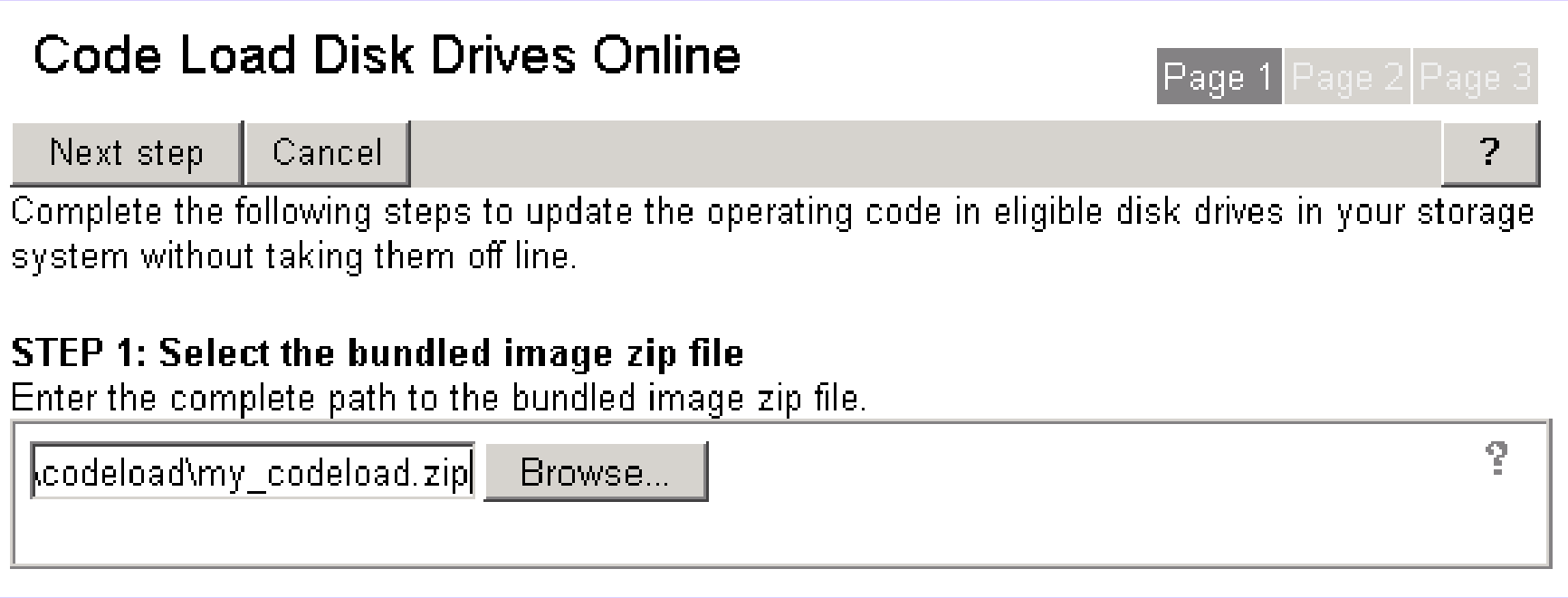
Code load disk drives globally (3 of 4)

Enter the path of the zip file you created



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Code load disk drives globally (4 of 4)

Review the code load status

Code Load Disk Drives Online

Page 1 | Page 2 | Page 3

Finish | Save to File | ?

STEP 3: Finish

The results of your online disk drive code load process are shown below. You can use your browser's print features or the **Save to File** button to create a record of this information. Click **Finish** to complete the code load process.

Disk Drive Configuration Information For Storage System:

Disk Group	Disk Drive			Model	FW Version	Code Load Status
	Rack	Enclosure	Bay	Capacity	BI Version	
Default Disk Group	Disk 001			BD03654499	3BE9	Loaded
	1	8	1	33.92 GB	3BE9	
Default Disk Group	Disk 003			BD03654499	3BE9	Loaded
	1	8	3	33.92 GB	3BE9	
Default Disk Group	Disk 006			BD03654499	3BE9	Loaded
	1	7	1	33.92 GB	3BE9	
Default Disk Group	Disk 007			BD03654499	3BE9	Loaded
	1	8	2	33.92 GB	3BE9	

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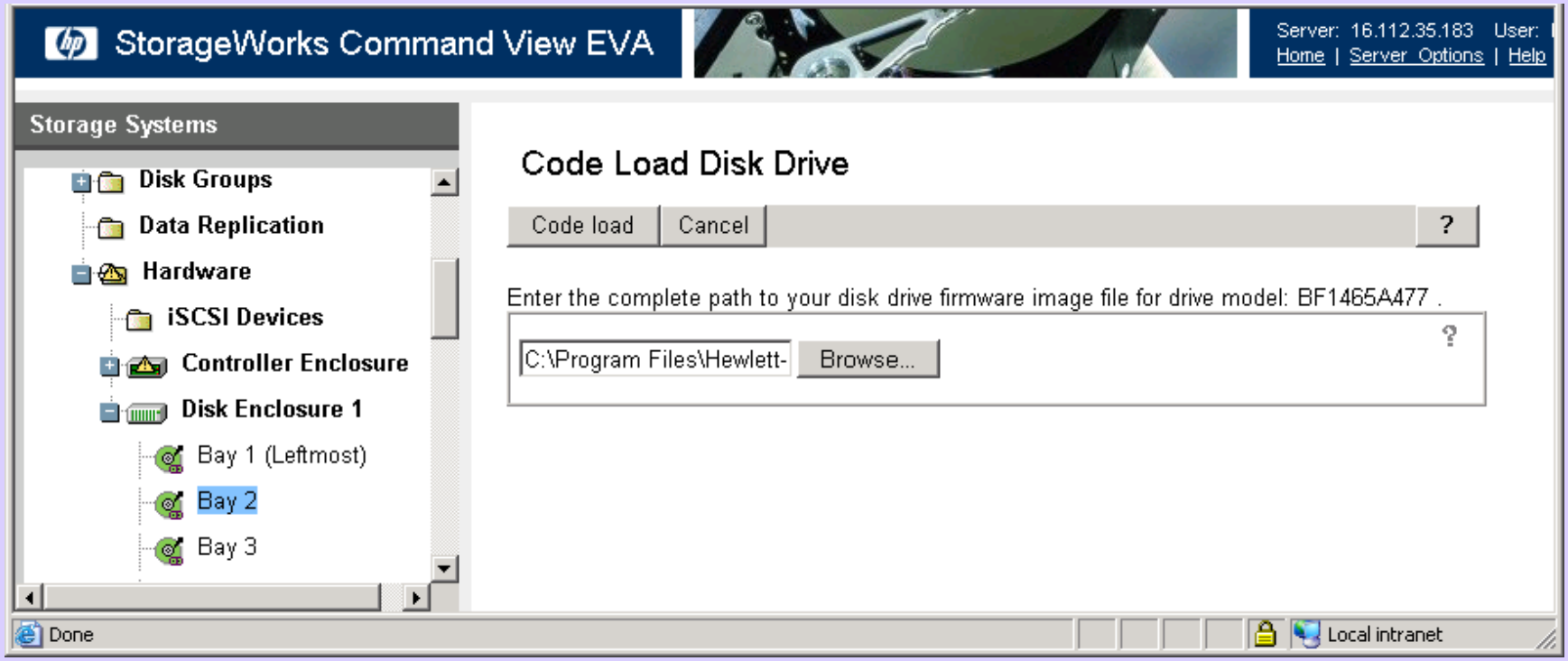
Code load disk drives individually

- Select a drive bay and the Code load button
- Browse to the specific firmware file and select Code load



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