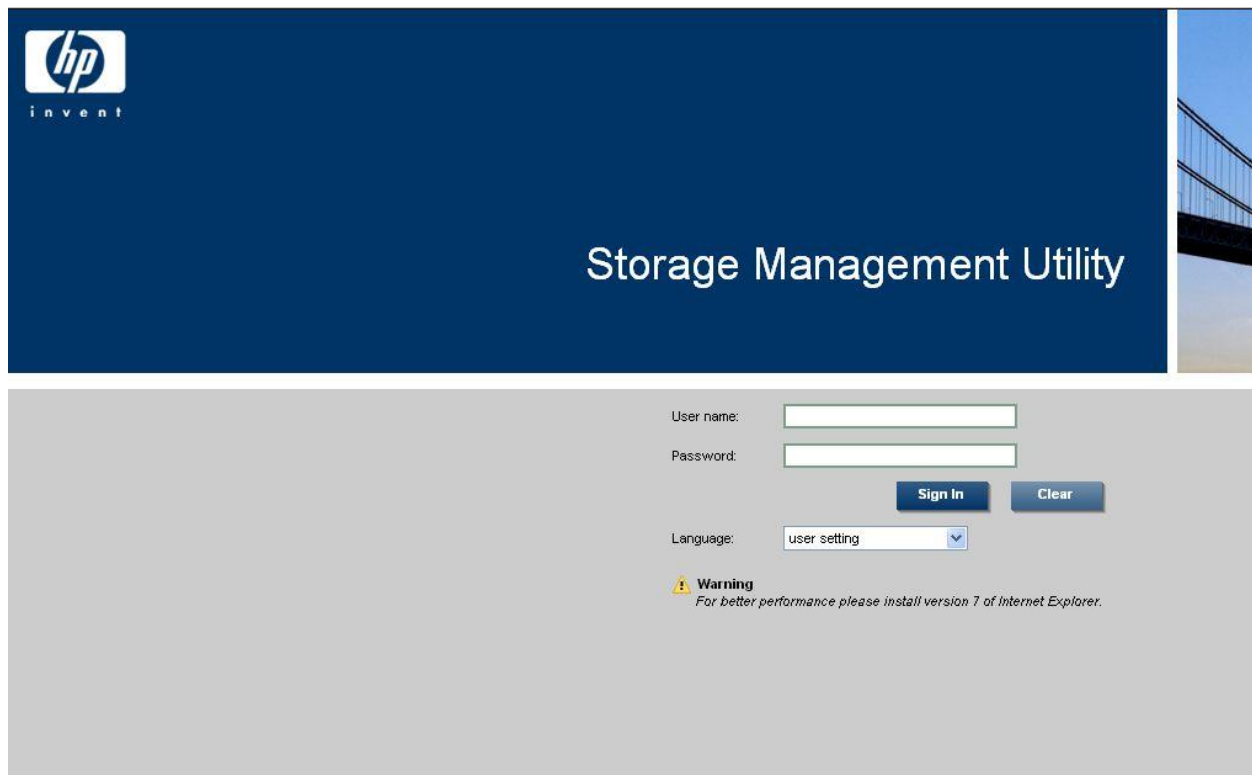


# HP MSA 2300 Series Configuration Guide

1. Logon to console
2. Configure system settings
3. Create Vdisks
4. Create Volumes
5. Assign volumes to Hosts
6. Create Global Spares
7. Rename Host

## Login to console:

The MSA series will have 1 or 2 console ports. The ports will come with default IP address of 10.0.0.2 and 10.0.0.3. Once you enter in the IP address to your web browser you will see the screen below.



User name:

Password:

Language:

**Warning**  
*For better performance please install version 7 of Internet Explorer.*

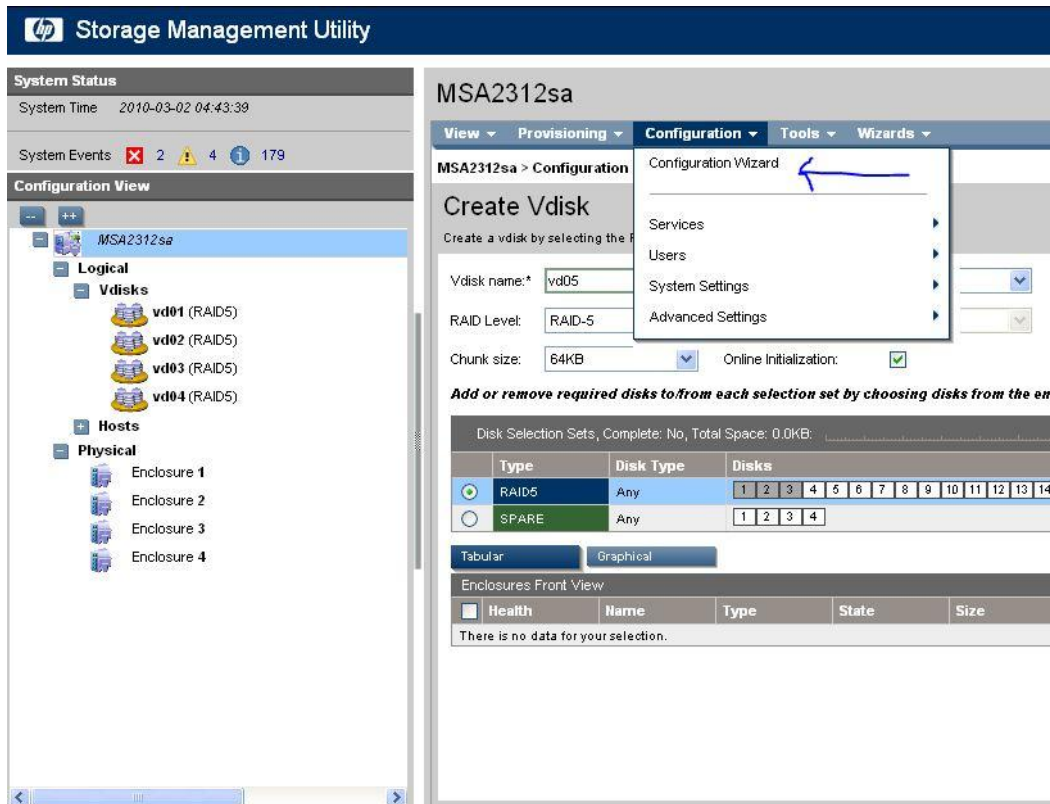
Once at the logon screen you can login using the default factory credentials below.

User – manage

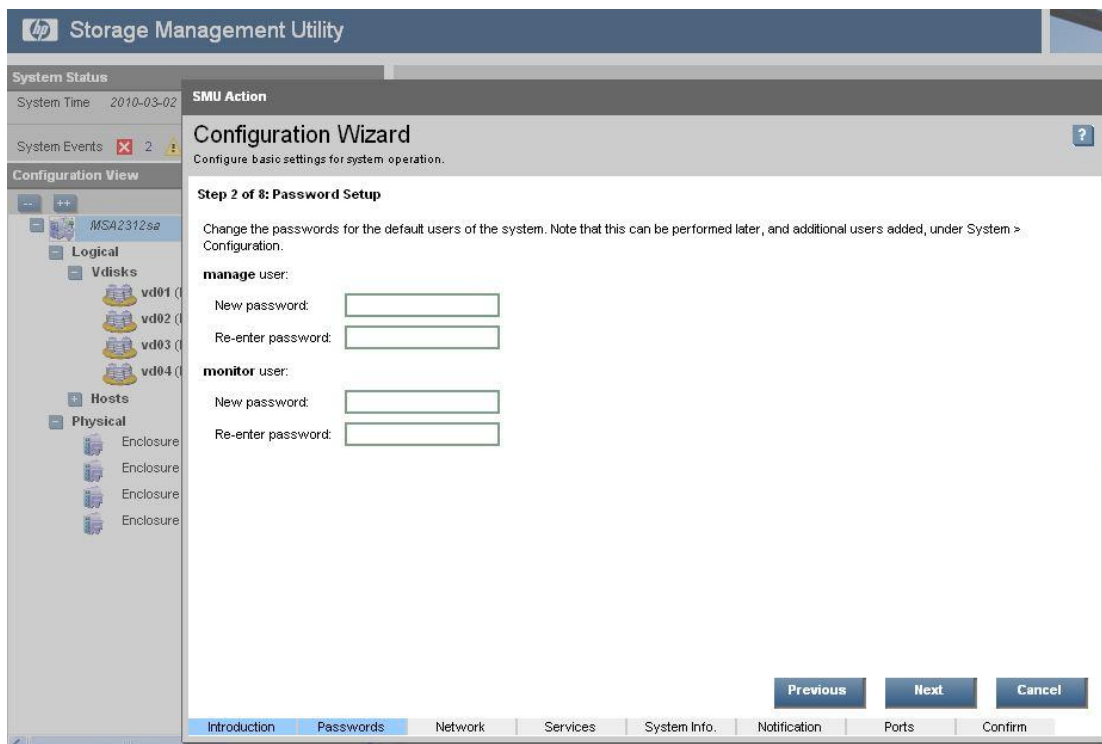
Password - !manage

## Configure system settings

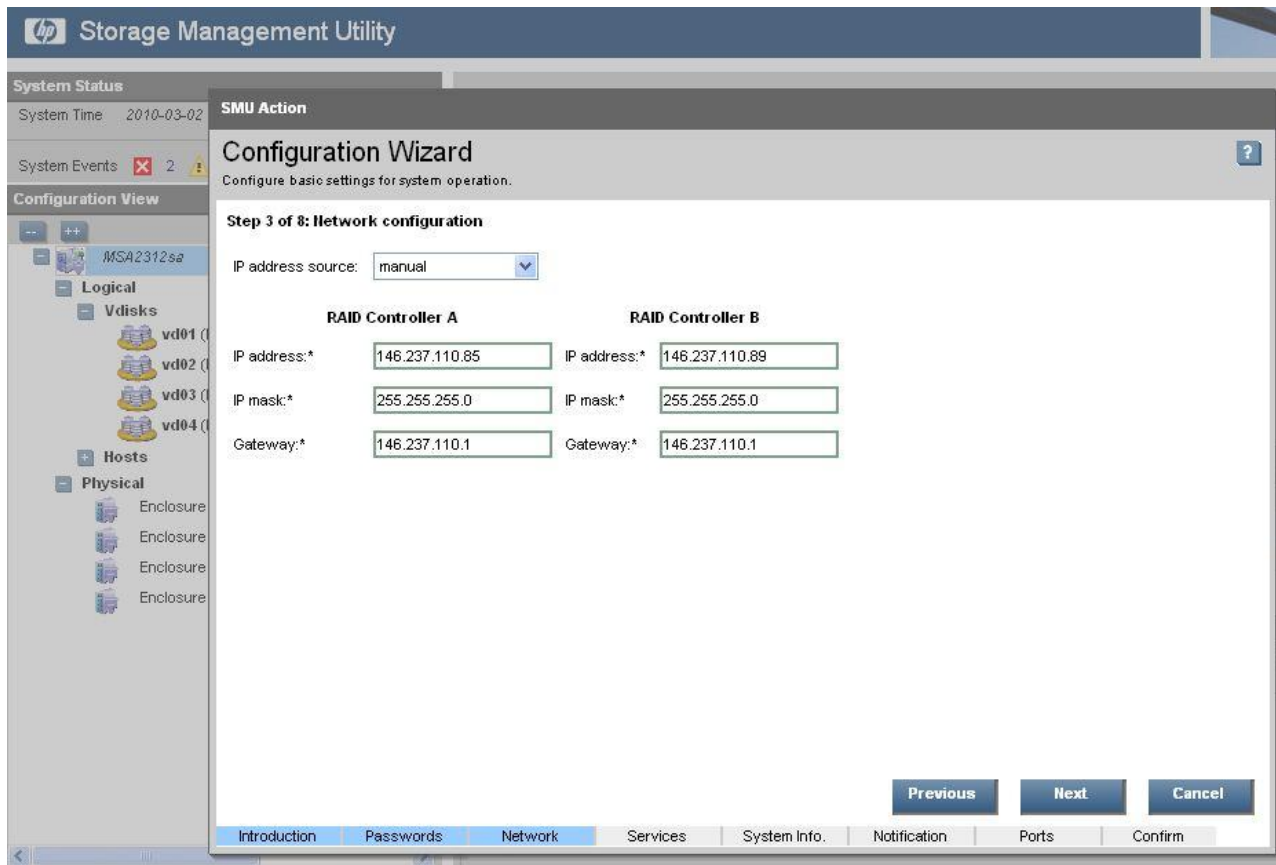
You will need to configure system settings to set the IP address of the console ports, change passwords, setup error reporting and services running on the array.



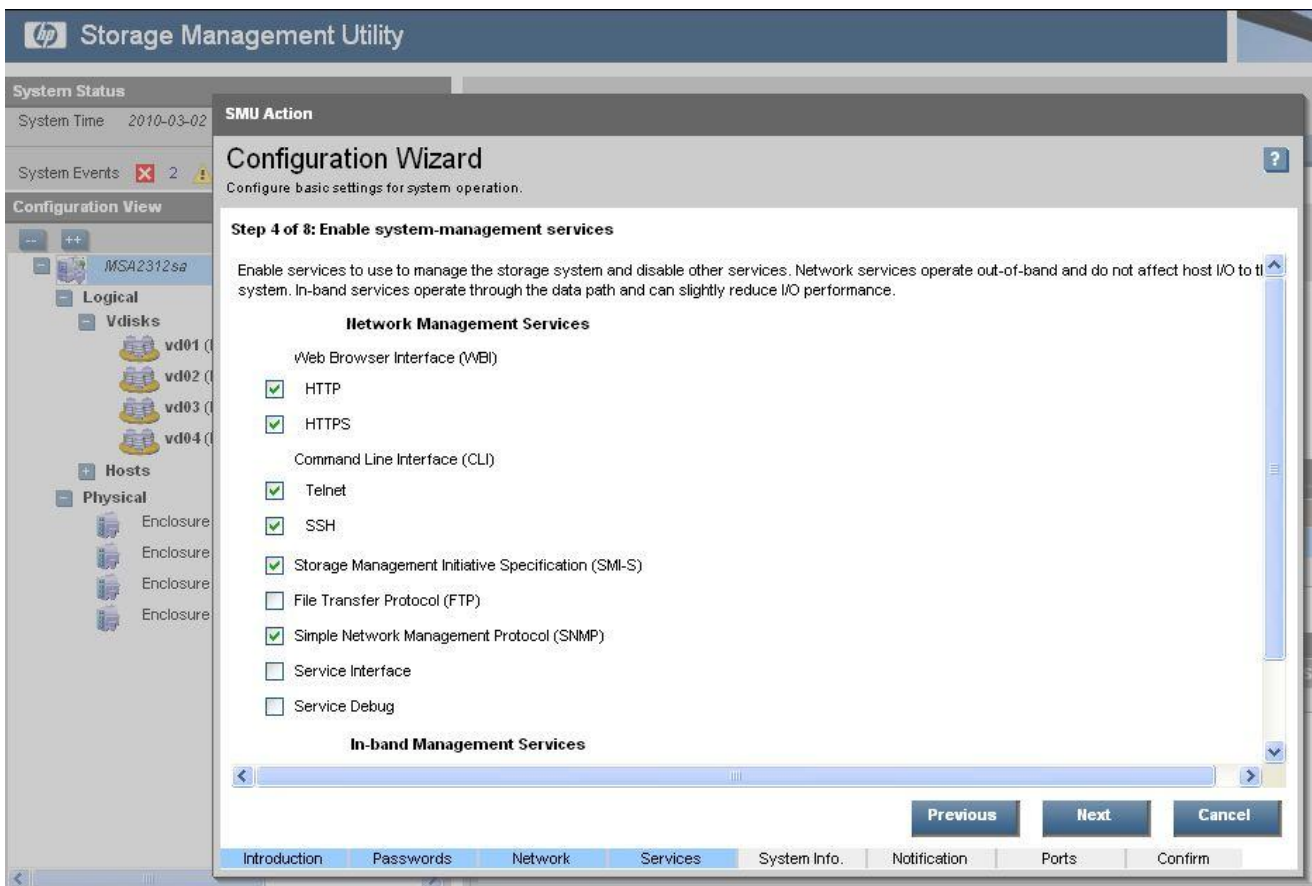
From the screen above select the Configuration Wizard from "Configuration" menu at the top of screen.



The screen above will allow you to change the passwords for the account you are logged in with.



The 3<sup>rd</sup> screen on the configuration wizard allows you to set the IP address for the controllers available in the device.

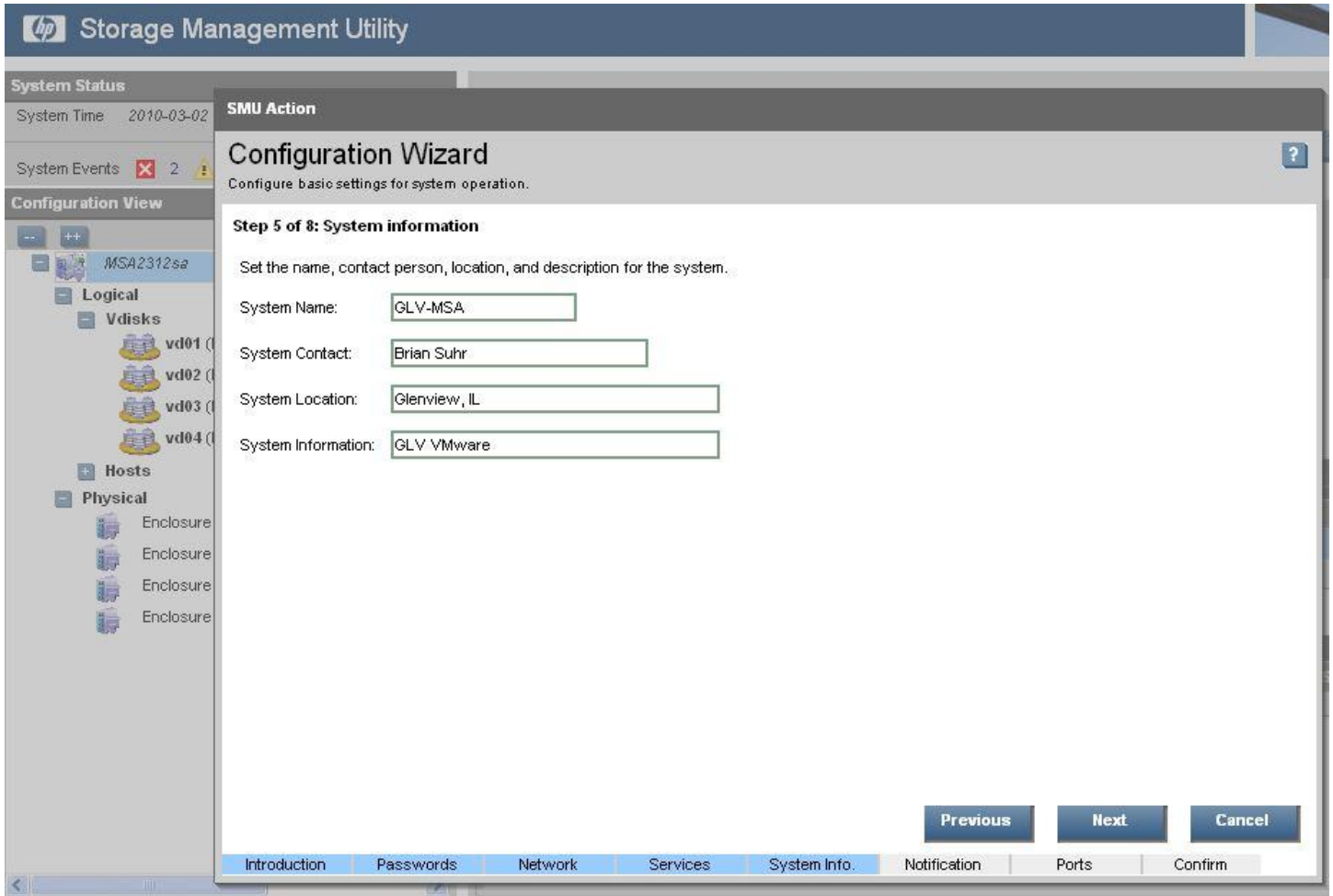


The screen above screen will allow you to enable/disable system services.

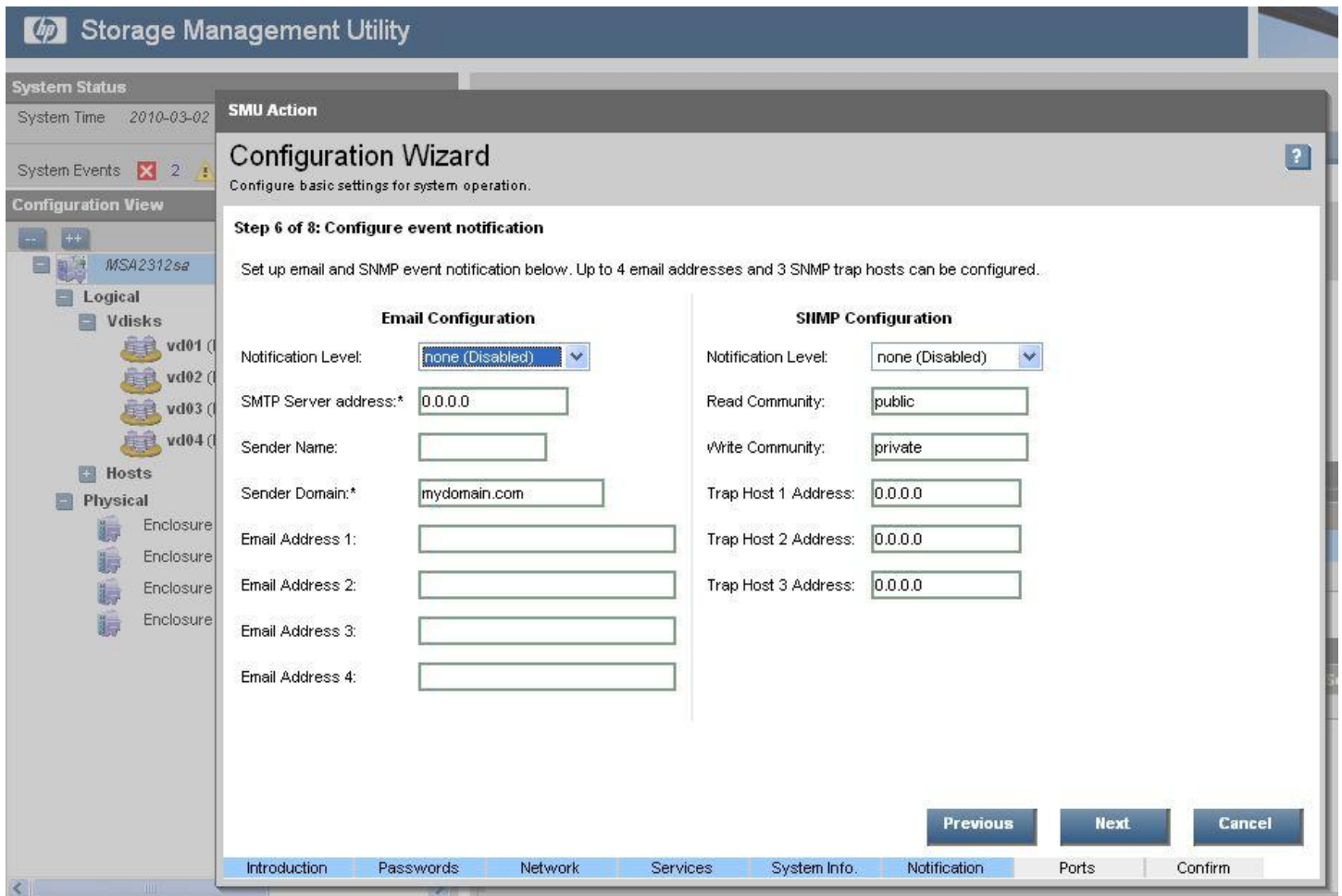
Web browser settings allow you to select how secure you want the connection to be.

CLI – gives you the option to allow Telnet & SSH connections for command line configurations.

The remaining options are std. support protocols.



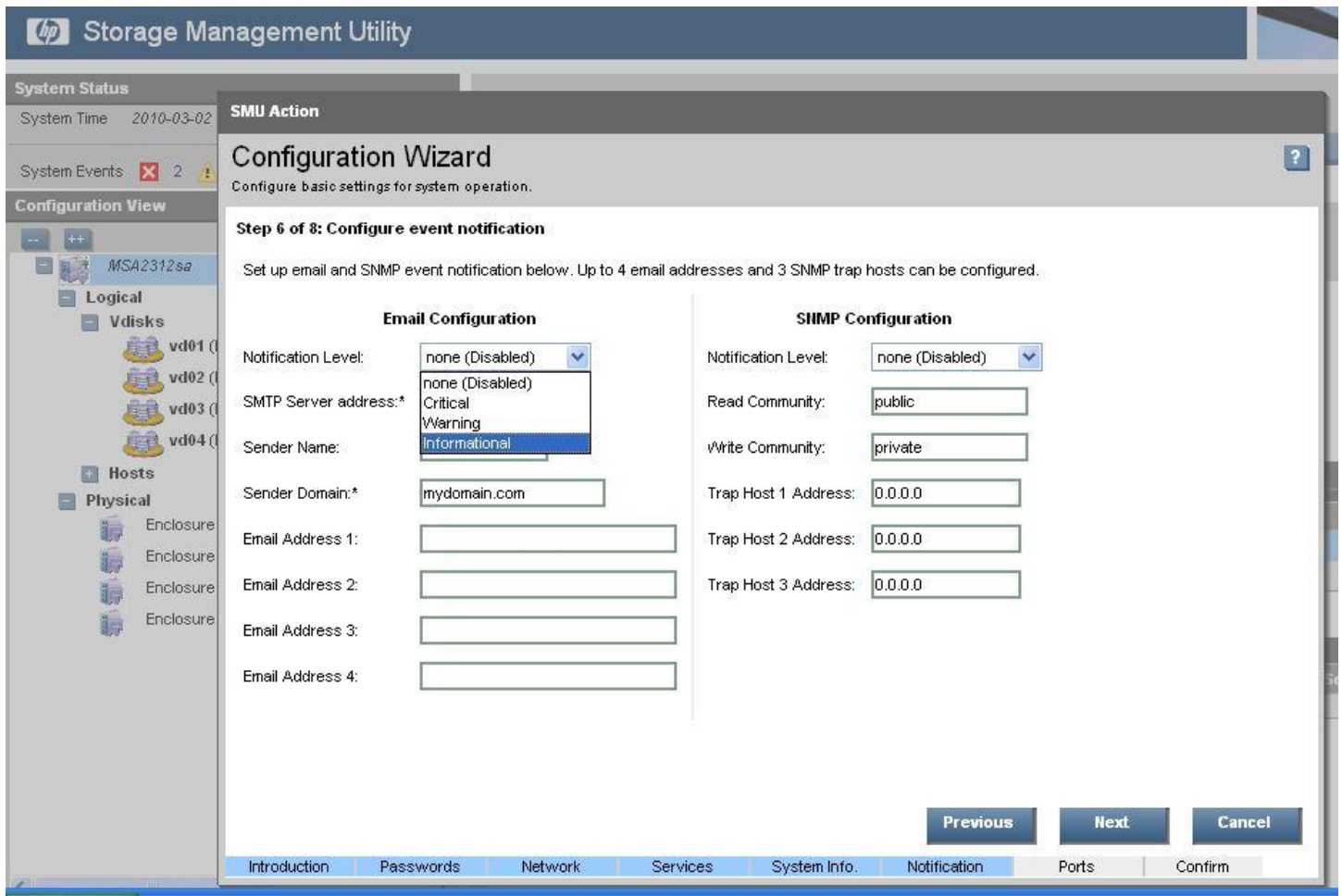
Step 5 allows you to specify system name, contact and location of the Storage Device.



Step 6 allows you to enable Email alerting and SNMP configuration. These will allow the device to send out notifications.

SMTP server – This is the mail server that will relay the messages.

Email Address 1-4 fields are used for address that you want the notifications sent out to. If you need more than 4 you should create and use a Distribution list.



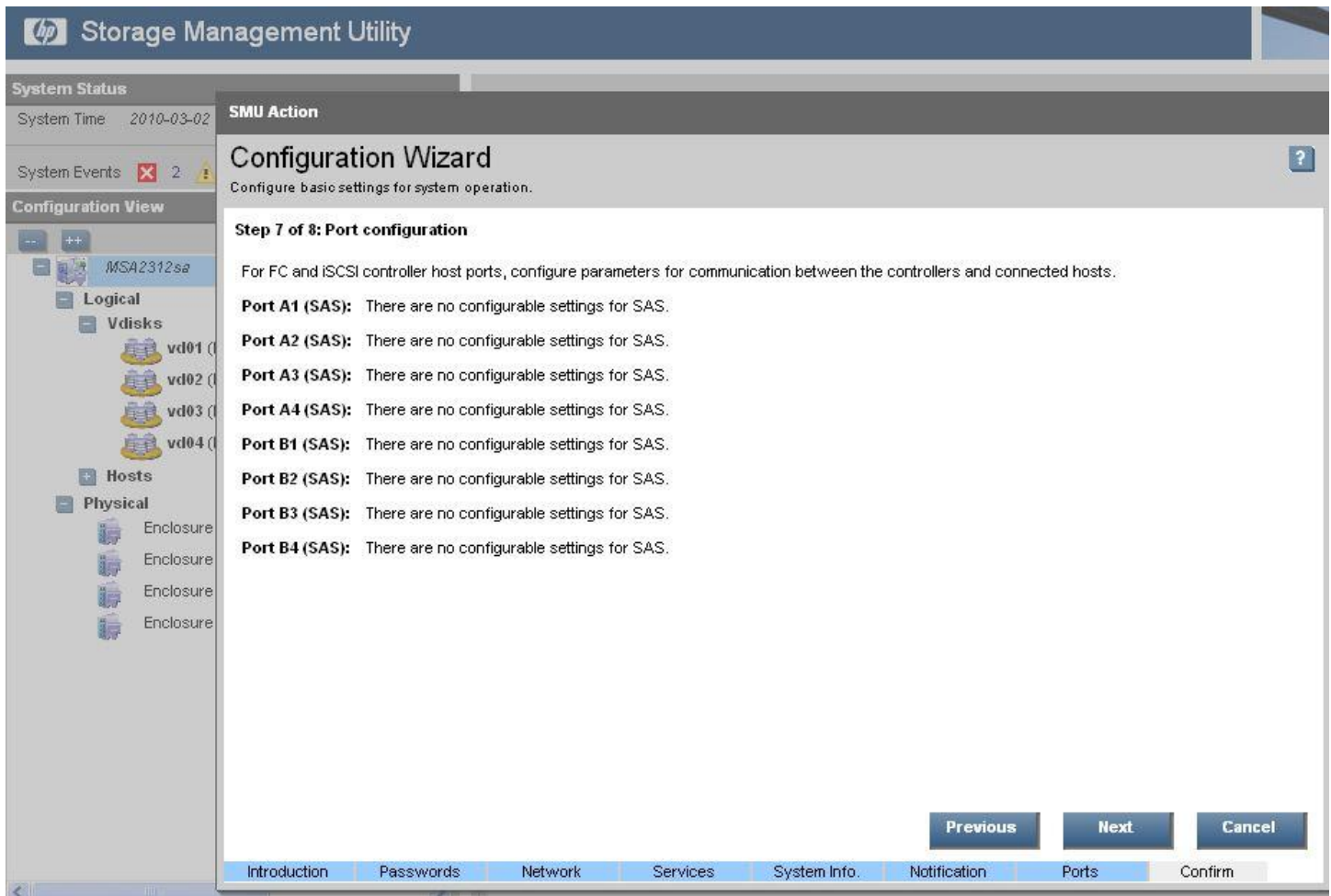
You have several levels of Notification settings that are available.

Critical – This will only send out notifications on critical warnings.

Warning – This level will send out notices on both Critical and Warning level errors.

Informational – This selection will send out notices for all events on the system.

To turn off notification you will want to select “none (Disabled)” and no events will be sent.



Step 7 is for configuring parameters of Fiber Channel and iSCSI ports. Since the device used for this document creating used SAS disks there was nothing to configure on this stage.



## Creating Vdisks:

The screenshot displays the HP Storage Management Utility interface. On the left, the 'Configuration View' shows a tree structure for 'Logical' components, including 'Vdisks' (vd01, vd02, vd03) and 'Hosts'. On the right, the 'Vdisks' section is active, showing a 'View' dropdown menu with 'Provisioning' selected. A context menu is open over the 'Vdisks' section, listing options: 'Create Vdisk', 'Delete Vdisks', 'Delete Volumes', and 'Create Multiple Snapshots'. A blue arrow points to the 'Create Vdisk' option. Below the menu, there are two summary tables. The first table, 'Vdisks Overview', shows a total capacity of 4.9TB. The second table, 'Vdisks', provides details for each vdisk.

Health	Component	Count	Capacity
OK	Vdisks	3	4.9TB

Health	Name	Size	Free	RAID
OK	vd01	1798.5GB	0B	RAID5
OK	vd02	1798.5GB	0B	RAID5
OK	vd03	1348.8GB	1348.8GB	RAID5

To create new Vdisks refer to the screen above and the directions below.

1. Click on Vdisks from the Tree view on the left side.
2. On left side of screen click on Provisioning from top menu and select "Create Vdisk".
3. Refer to image below for remaining steps.



## Vdisks

View ▾ Provisioning ▾

Vdisks > Provisioning > Create Vdisk

### Create Vdisk

Create a vdisk by selecting the RAID type and a set of disks

Vdisk name:\*  Assign to:

RAID Level:  Number of Sub-vdisks:

Chunk size:  Online Initialization:

**Add or remove required disks to/from each selection set by choosing disks from the enclosures**

Disk Selection Sets, Complete: Yes, Total Space: 1.8TB: 1.3TB 461.5GB

Type	Disk Type	Disks	Size	Complete
<input checked="" type="radio"/> RAID5	SAS	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1,800.00GB	<input checked="" type="checkbox"/>
<input type="radio"/> SPARE	SAS	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	0.00GB	<input checked="" type="checkbox"/>

Tabular

Graphical

Enclosures Front View

<input type="checkbox"/>	Health	Name	Type	State	Size	Enclosure	Serial Number	Status
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> OK	Disk-1.5	SAS	RAID5	450.0GB	Enclosure-1	JMX33T8C	OK
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> OK	Disk-2.5	SAS	RAID5	450.0GB	Enclosure-2	3QQ292Z800009013SLF4	OK
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> OK	Disk-3.5	SAS	RAID5	450.0GB	Enclosure-3	3QQ2939H00009012NR5X	OK
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> OK	Disk-4.5	SAS	RAID5	450.0GB	Enclosure-4	JMX2X6HC	OK

Create Vdisk

You will now be presented with a screen similar to the one above. In the lower part you will be present with all disks that are unassigned.

1. Enter in your Vdisk name
2. Select your RAID level. (This will be based on your intended use.)
3. You can also select Chunk size.
4. The assign to section will Auto assign to a controller or you can specify A or B controllers directly.
5. Online initialization will you to begin working with the disk upon creation. If unchecked you must wait until it completes before starting to use.
6. Next you will need to select which disks will be part of your Vdisk from the lower section. Note the Name section shows you what Chassis and Disk number you are selecting. (Example: Disk-2.5 is the 5<sup>th</sup> disk in chassis 2)
7. When selecting the disks you will want to try and spread the disks out across multiple chassis's if you have more than one chassis. This will allow you more stability in the event that there s a chassis failure.
8. Spare selection: If you specify a spare disk from this screen it will be tied to only this Vdisk. Later in this document you will be able to configure a Global Spare. Global spares will provide protection to all Vdisks in the storage configuration.
9. Once you apply the settings your Vdisk will be created and will start the initialization. This process takes about 16 hours with 450 GB disks. Larger sized disks will take longer.
10. You are best to create all your Vdisks at once and let them initialize as it will only be 16 hours. If you do them and then wait it will take 16 hours each time.

System Status

System Time 2010-03-02 04:37:41

System Events 2 4 179

Configuration View

The configuration tree shows a hierarchy starting with 'MSA2312sa'. Under 'Logical', there are four 'Vdisks' (vd01, vd02, vd03, vd04) all configured as RAID5. Under 'Physical', there are four 'Enclosures' (Enclosure 1, 2, 3, 4).

vd01 (RAID5)

View Provisioning Configuration Tools

vd01 (RAID5) View > Overview

Vdisk Overview

Details about a specific vdisk

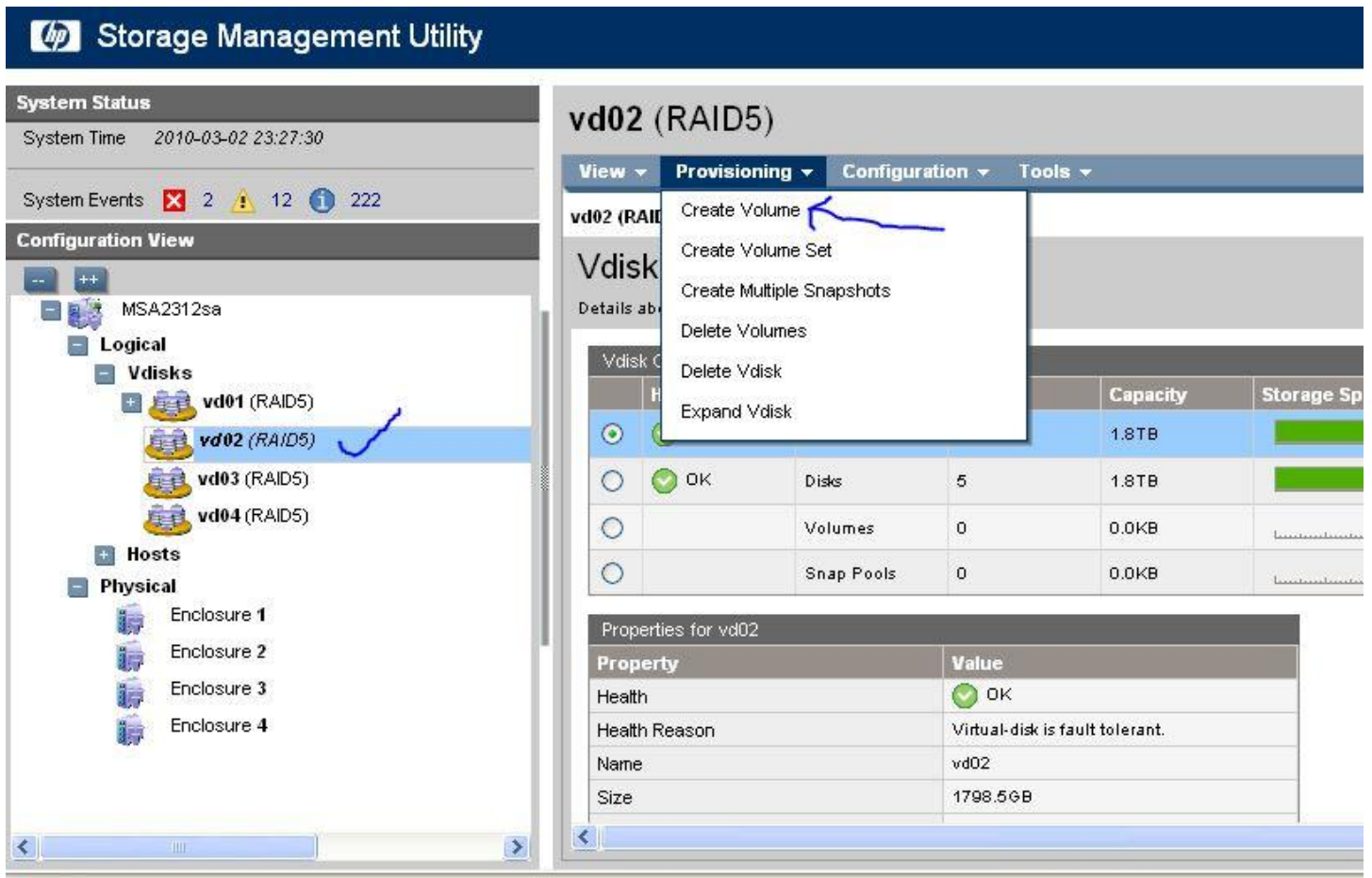
	Snap Pools	0	0.0KB
--	------------	---	-------

Properties for vd01

Property	Value
Health	OK
Health Reason	Virtual-disk is fault tolerant.
Name	vd01
Size	1798.5GB
Free	1798.5GB
Current Owner	A
Preferred Owner	A
Serial Number	00c0ffda174f00001f1f8c4b00000000
RAID	RAID5
Disks	5
Spares	0
Chunk Size	64k
Created	2010-03-01 20:10:07
Minimum Disk Size	449.6GB
Status	FTOL
Current Job	Initialize (72%)

To find out the progress on the disk initialization process, refer to the screen above and you are able to view the "Current Job" status.

## Create Volumes:

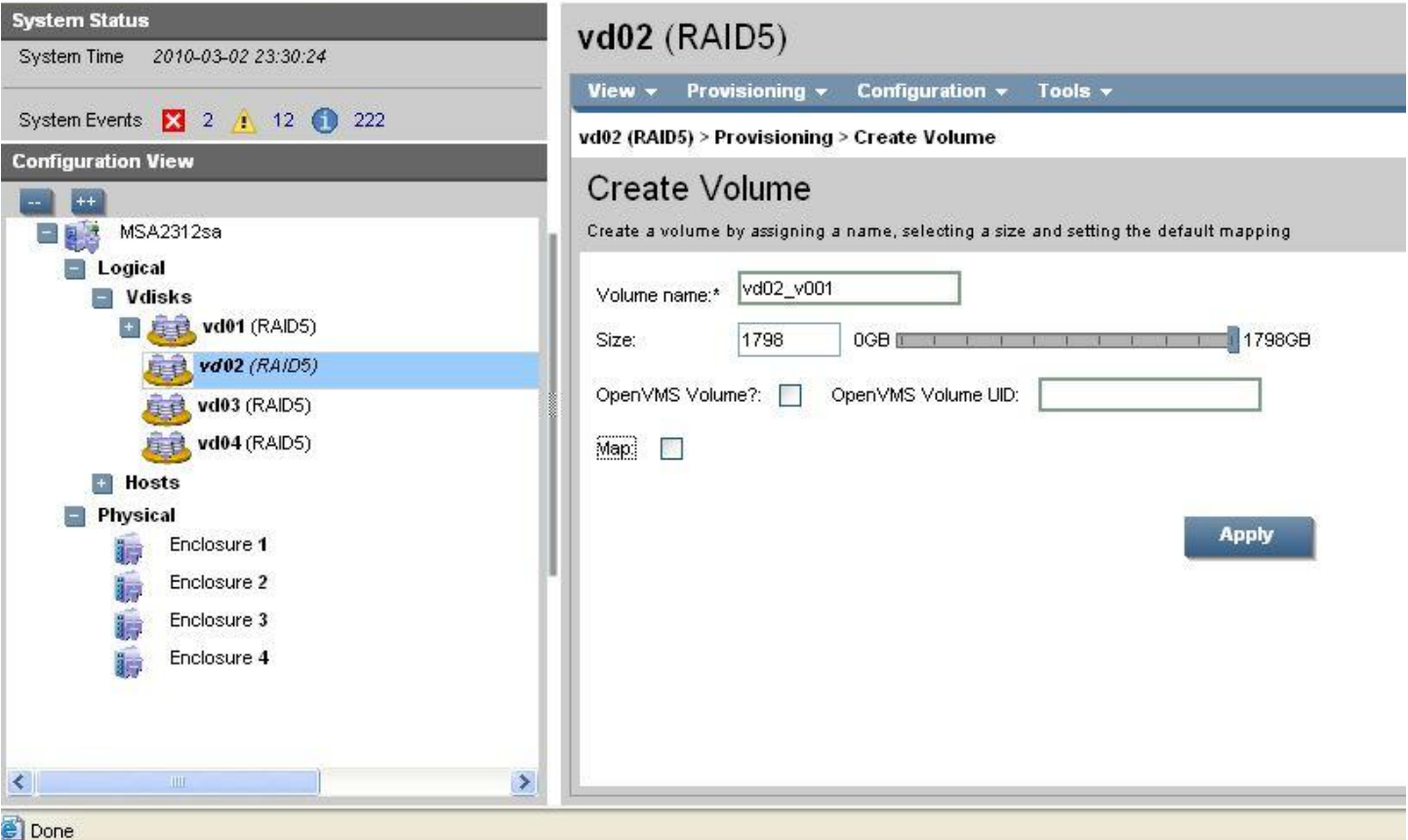


The screenshot displays the HP Storage Management Utility interface. On the left, the 'Configuration View' shows a tree structure under 'Logical' > 'Vdisks'. The vdisk 'vd02 (RAID5)' is selected and highlighted with a blue checkmark. On the right, the 'vd02 (RAID5)' details pane is open, showing a 'Provisioning' menu with 'Create Volume' selected and indicated by a blue arrow. Below the menu is a table showing the vdisk's status and properties.

Property	Value
Health	OK
Health Reason	Virtual-disk is fault tolerant.
Name	vd02
Size	1798.5 GB

Next step is to create volumes on the Vdisks that you already created. Think of a Volume is similar to a LUN/Partition on the disk. So you could create a large volume and then slice it up into several smaller volumes.

1. Click on the Vdisk you wish to create the volume on from the Tree in the left volume.
2. From the Provisioning menu at the top of the left screen choose "Create Volume"
3. You will then be presented with a screen similar to the next image below.



Once you clicked on “Create Volume” you are presented with the options listed above.

1. Enter in your Volume name.
2. Adjust the size that you want for this volume. It will default to the max available space on the Vdisk.
3. The OpenVMS options would only be used if you are connecting the storage to a VMS computer.
4. Do not check the “Map” option for now. In the next section you will learn how to map to hosts.
5. Click the “Apply” button to create the volume.

## Host Mapping: (Assigning Volumes)

The screenshot displays the HP Storage Management Utility interface. On the left, the 'Configuration View' shows a tree structure for 'MSA2312sa' with 'Logical' disks (vd01, vd02, vd03, vd04) and 'Physical' enclosures (Enclosure 1-4). The volume 'vd02\_v001 (1798.5GB)' is selected. On the right, the 'Volume vd02\_v001 (1798.5GB)' configuration page is open, with the 'Provisioning' menu expanded to show 'Explicit Mappings' selected, indicated by a blue arrow. Other menu options include 'Delete Volume', 'Default Mapping', 'Create Snapshot', 'Create Volume Copy', 'Roll Back Volume', 'Abort Volume Copy', and 'Delete Schedule'. An 'Apply' button is visible at the bottom right of the configuration panel. The Windows taskbar at the bottom shows the 'start' button, system tray icons, and the address bar with '146.237.110.85 [A] (...)'.

Now that you have created Vdisks and Volumes on the disks you will now need to assign the Volumes to your hosts. You are able to manually add Hosts to the console. The system is very good at auto finding new hosts.

1. You will want to select the Volume from the tree that you wish to assign Hosts to.
2. Then select "Explicit Mappings" from the "Provisioning" menu on the left side menu.
- 3.



## Volume vd02\_v001 (1798.5GB)

View ▾ Provisioning ▾ Configuration ▾ Tools ▾

Volume vd02\_v001 (1798.5GB) > Provisioning > Explicit Mappings

### Explicit Volume Mappings

Modify the volume mappings to specific hosts by using the default map or explicit map settings

	Type	Host ID	Name	Ports	LUN	Access
<input type="radio"/>	Default	500605B0019C88F0				not-mapped
<input type="radio"/>	Explicit	500605B0019CE3D0	GLVVM001a	A1,A2,A3,A4,B1,B2,B3,B4	2	read-write
<input type="radio"/>	Default	500605B0019C88F4				not-mapped
<input checked="" type="radio"/>	Explicit	500605B0019CE3D4	GLVVM001b	A1,A2,A3,A4,B1,B2,B3,B4	2	read-write

Map:  (Clear to remove existing mapping)

LUN:\*  Access:

Select ports from the view or list below:

Graphical

Tabular



You will now be presented with the Explicit Volume Mappings screen.

1. From the top table you will need to select the Host that you wish to map to the Volume.
2. You will need to check the Map box.
3. In the LUN field enter the name that you wish to use
4. Choose the Access level. Default is read-write
5. Then select which ports on each Storage Processor you wish to map to. Default is all ports on all processors.

## Creating Global Spares:

The screenshot displays the HP Storage Management Utility interface for an MSA2312sa system. The left pane shows the Configuration View with a tree structure:

- MSA2312sa
  - Logical
    - Vdisks
      - vd01 (RAID5)
      - vd02 (RAID5)
      - vd03 (RAID5)
      - vd04 (RAID5)
    - Hosts
      - 500605B0019CE3D0
      - 500605B0019C88F0
      - 500605B0019CE3D4
      - 500605B0019C88F4
    - Physical
      - Enclosure 1
      - Enclosure 2
      - Enclosure 3
      - Enclosure 4

The right pane shows the provisioning menu for the selected system. The menu items are:

- Provisioning Wizard
- Add Host
- Create Vdisk
- Create Multiple Snapshots
- Delete Vdisks
- Delete Volumes
- Remove Hosts
- Manage Global Spares (highlighted with a blue arrow)
- Delete Schedule

Below the menu is a table showing system statistics:

System	Property	Value
	Volumes	0
	Snap Pools	0
	Snapshots	0
	Schedules	0
	Configuration Limits	
	Licensed Features	
	Versions	

At the bottom, the System Information table is visible:

Property	Value
Health	OK
Redundancy Mode	Active-Active ULP

Global spares are extra disks that can be used as spares for failed drives for any Vdisk in any enclosure. The other way to handle spares would be to specify a Spare that is dedicated to a specific Vdisk.

To start click on the storage enclosure at the top of the Tree View on the left. Refer to picture above and then select Manage Global Spares from the Provisioning menu.



# MSA2312sa

View ▾ Provisioning ▾ Configuration ▾ Tools ▾ Wizards ▾

MSA2312sa > Provisioning > Manage Global Spares

## Manage Global Spares

Add or remove disks from the selection set to define the global spares

Disk Sets, Total Space: 900.2GB:  900.2GB

Type	Disk Type	Disks	Size	Complete
<input checked="" type="radio"/> GLOBAL SP	All	<input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8	900.00GB	<input checked="" type="checkbox"/>

Tabular

Graphical

Enclosures Front View

<input type="checkbox"/>	Health	Name	Type	State	Size	Enclosure	Serial Number	Status
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> OK	Disk 1.1	SAS	GLOBAL SP	450.0GB	Enclosure-1	JMX3368C	OK
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> OK	Disk 2.1	SAS	GLOBAL SP	450.0GB	Enclosure-2	3QQ293HE00009013SLKZ	OK

**Modify Spares**

You will now see the Manage Global Spares page.

You will now be presented with any unassigned disks. To enable them as Global Spares all you need to do is select them and choose Modify Spares.

## Rename Host:

The screenshot displays the HP Storage Management Utility interface. On the left, the 'Configuration View' shows a tree structure of storage components. Under 'Logical' > 'Vdisks', there are four RAID5 volumes (vd01-vd04). Under 'Hosts', three hosts are listed: GLVVM001, 500605B0019C88F0, and 500605B0019CE3D4 (highlighted in blue). The right pane shows the details for the selected host, 500605B0019CE3D4. A 'Provisioning' menu is open, with 'Rename Host' selected and indicated by a blue arrow. Below the menu is a 'Host Overview' table and a 'Properties for' table.

Component	Count
Host	
Maps	1

Property	Value
Host ID	500605B0019CE3D4
Name	
Discovered	Yes
Mapped	Yes
Profile	Standard

To make it easier to identify your hosts you can give them custom names.

To do this you will select the host connection that you wish to change from the left column.

Then from the provisioning menu choose Rename Host

System Status

System Time 2010-03-02 22:32:01

System Events 2 6 198

Configuration View

MSA2312sa

- Logical
  - Vdisks
    - vd01 (RAID5)
      - Volume vd01\_v001 (1798.5GB)
      - vd02 (RAID5)
      - vd03 (RAID5)
      - vd04 (RAID5)
    - Hosts
      - GLVVM001a**
      - 500605B0019C88F0
      - GLVVM001b
      - 500605B0019C88F4
  - Physical
    - Enclosure 1

GLVVM001

View ▾ Provisioning ▾

GLVVM001 > Provisioning > Rename Host

Rename Host

Modify the name

Name:\*

Profile:  ▾

You are now able to type in a more suitable name to help with identifying which host you are working with.

Profile option is how you choose between Standard, HP-UX and Open VMS options.

System Status

System Time 2010-03-02 22:32:35

System Events 2 6 198

Configuration View

MSA2312sa

- Logical
  - Vdisks
    - vd01 (RAID5)
      - Volume vd01\_v001 (1798.5GB)
    - vd02 (RAID5)
    - vd03 (RAID5)
    - vd04 (RAID5)
  - Hosts
    - GLVVM001a
    - 500605B0019C88F0
    - GLVVM001b
    - 500605B0019C88F4
- Physical
  - Enclosure 1

# GLVVM001a

View Provisioning

GLVVM001a > View > Overview

## Host Overview

Details about a specific host

Host Overview	
Component	Count
<input checked="" type="radio"/> Host	
<input type="radio"/> Maps	1

Properties for GLVVM001a	
Property	Value
Host ID	500605B0019CE3D0
Name	GLVVM001a
Discovered	Yes
Mapped	No
Profile	Standard

After renaming the host interface you can see from the summary that you now have a friendly name and the host can still be referenced by the Host ID.