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.

Storag	e Management Utility
User n Passw Langu A <i>Fo</i>	ame:

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

User – manage

Password - Imanage

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.

System Status System Time 2010-03-02 04:43:39	MSA2312sa	
	View 👻 Provisioning 👻	Configuration - Tools - Wizards -
System Events 🔀 2 🥂 4 🚺 179	MSA2312sa > Configuration	Configuration Wizard
Configuration View	Create V/dick	
	Create a vdisk by selecting the	
Logical Vdisks	Vdisk name:* vd05	System Settings
vd01 (RAID5)	RAID Level: RAID-5	Advanced Settings
xd03 (RAID5)	Chunk size: 64KB	Online Initialization:
vd04 (RAID5)	Add or remove required o	lisks to/from each selection set by choosing disks from the e
Hosts	Disk Selection Sets, Con	nniete: No. Total Space: 0.0KB:
Physical	Time	iek Tone Dieke
Enclosure 1	RAID5 A	ny 1 2 3 4 5 6 7 8 9 10 11 12 13 1
Enclosure 2	O SPARE A	ny 1234
Enclosure 3		
Enclosure 4	Tabular Grap	
Enclosure 4	Tabular Grap Enclosures Front View	me Tume State Size

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

(b) Storage Ma	inagement Utility	
System Status System Time 2010-03-02	SMU Action	
System Events 🔀 2 🧘	Configuration Wizard Configure basic settings for system operation.	?
Configuration View MSA2312sa Logical Visks Vdisks Vdisks Vdig (Visks Vd0 (Visks Vd0 (Enclosure Enclosure Enclosure Enclosure Enclosure Enclosure	Step 2 of 8: Password Setup Change the passwords for the default users of the system. Note that this can be performed later, and additional users added, under System > configuration. manage user: New password: Re-enter password: New password: Re-enter password: Re-enter password: New password:	
	Introduction Passwords Network Services System Info. Notification Ports Confirm	

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

(b) Storage Mai	nagement Uti	ility					
System Status			_				
System Time 2010-03-02	SMU Action						_
System Events 🔀 2 🧯	Configuratio	on Wizard gs for system operation.					?
Configuration View	Step 3 of 8: Netwo	rk configuration					
MSA2312se	IP address source:	manual	~				
Vdisks	RAID	Controller A	RA	ID Controller B	_		
vd02 ()	IP address:*	146.237.110.85	IP address:*	146.237.110.89			
vd03 ()	IP mask:*	255.255.255.0	IP mask:*	255.255.255.0			
Hosts	Gateway:*	146.237.110.1	Gateway:*	146.237.110.1			
Enclosure							
Enclosure							
Enclosure							
					Previous	Next Car	ncel
1	Introduction	Passwords Net	twork Ser	vices System Info.	Notification	Ports Confirm	

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

(iii) Storage Ma	nagement Utility
System Status	SMI Action
System Time 2010-03-02	
System Events 🔀 2 🦺	Configuration Wizard 2
Configuration View	Step 4 of 8: Enable system-management services
MSA2312sa	Enable services to use to manage the storage system and disable other services. Network services operate out-of-band and do not affect host I/O to t
Vdisks	Network Management Services
🐻 vd01 (Web Browser Interface (WBI)
遺 vd02 (l	HTTP
vd03 (1	HTTPS
Maete	Command Line Interface (CLI)
Physical	✓ Telnet
Enclosure	SSH SSH
Enclosure	Storage Management Initiative Specification (SMI-S)
Enclosure	File Transfer Protocol (FTP)
U7 LINGOUIO	Simple Network Management Protocol (SNMP)
	Service Interface
	Service Debug
	In-band Management Services
	Draviaue Next Canaal
	Previous Next Cancel
1	Introduction Passwords Network Services System Info. Notification Ports Confirm

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.

(ii) Storage Ma	anagement Util	lity					
System Status	-						
System Time 2010-03-02	SMU Action						
System Events 🔀 2 🧯	Configuration Configure basic setting	n Wizard s for system operation.					2
	Step 5 of 8: System	information		50 March 100 M			
Logical Vdisks	Set the name, contac System Name:	Ct person, location, and	description for the	system.			
vd01	System Contact:	Brian Suhr					
vd03	System Location:	Glenview, IL					
Hosts	System mormation.	OLV VMWare					
Enclosure							
Enclosure							
i Enclosure	e						
					Previous	Next Ca	ncel
2	Introduction I	^p asswords Ne	twork Sei	rvices System	Info. Notification	Ports Confirm	

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

Image Management Utility

and with the			
System Status			
System Time 2010-03-02	SMU Action		
System Events 🔀 2 🫕	Configuration Wizard		?
Configuration View			
	Step 6 of 8: Configure event notification		
MSA2312sa	Set up email and SNMP event notification below. Up to 4 email adv	dresses and 3 SNMP trap hosts can be configured.	
Logical			
📄 Vdisks	Email Configuration	SHMP Configuration	
vd01 (Notification Level: none (Disabled)	Notification Level: none (Disabled)	
vd 03 (1	SMTP Server address:* 0.0.0.0	Read Community: public	
vd04 (Sender Name:	Write Community: private	
Physical	Sender Domain:* mydomain.com	Trap Host 1 Address: 0.0.0.0	
Enclosure	Email Address 1:	Trap Host 2 Address: 0.0.0.0	
Enclosure	Email Address 2:	Trap Host 3 Address: 0.0.0.0	
Enclosure	Email Address 3:		
	Email Address 4:		
		Previous Next	Cancel
	Introduction Passwords Network Servi	ces System Info. Notification Ports Con	firm
1000			

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.

2
Vert Cancel
Cancer
Confirm

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.

System Status		
System Time 2010-03-02	SMU Action	
System Events 🔀 2 🦺	Configuration Wizard Configure basic settings for system operation.	?
- ++	Step 7 of 8: Port configuration	
MSA2312sa	For FC and ISCSI controller host ports, configure parameters for communication between the controllers and connected hosts.	
Logical	Port A1 (SAS): There are no configurable settings for SAS.	
vaisks	Port A2 (SAS): There are no configurable settings for SAS.	
2002 (Port A3 (SAS): There are no configurable settings for SAS.	
vd03 ((Port A4 (SAS): There are no configurable settings for SAS.	
👼 vd04 (Port B1 (SAS): There are no configurable settings for SAS.	
📳 Hosts	Port B2 (SAS): There are no configurable settings for SAS.	
Physical Enclosure	Port B3 (SAS): There are no configurable settings for SAS.	
Enclosure	Port B4 (SAS): There are no configurable settings for SAS.	
Enclosure		
Enclosure		
	Previous Next Cancel	
	Introduction Passwords Network Services System Info. Notification Ports Confirm	

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:

Storage Management Utility							
System Status System Time 2010-03-02 23:48:31	Vdisks	;					
	View -	Provis	ioning 🔻				
System Events 🔀 2 🥂 12 🚺 225	Vdisks > 1	Create	Vdisk <				
Configuration View	Valiat	Delete	Vdisks 🔪				
	Summary	Delete	Volumes Muttiple St	nanahata			
Logical	Vdisks		watiple Si	napsnots			
Voisks	H	ealth	C	omponent	Count	-	Capacity
	 Image: Image: Ima) ок	V	disks	3		4.9TB
Volume vd02_v001 (1798.5GB)	Vdisks						
vd03 (RAID5)	Health	-	Name	Size		Free	RAI
Hosts	🚫 ок		vd01	1798.	5GB	OB	RAII
Physical	🚫 ок		vd02	1798.	5GB	08	RAII
Enclosure 1	🚫 ок		vd03	1348.	86B	1348.86	B RAII
Enclosure 3 Enclosure 4							
(2) Done							

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.

Vdis	ks										
View -	- Pro	visioning	*								
Vdisks	> Provi	sioning >	Create Vdisk								
Create a	ate V a vdisk by	disk / selecting f	the RAID type an	d a set of disks							
Vdisk	name:*	vd04		Assign to:	Auto	*					
RAID L	.evel:	RAID-5	~	Number of Sub-vdisl	ks:	~					
Chunk	size:	64KB	~	Online Initialization:							
Add o	r remov	e require	d disks to/from	each selection set L	y choosing a	lisks from the en	ciosures				
Di	sk Selec	tion Sets, (Complete: Yes, T	otal Space: 1.8TB: 📃		1.3TB		461.56	B		
	Туре		Disk Type	Disks				Size		Complete	
۲	RAID5	1	SAS	1 2 3 4 5	6789	10 11 12 13 14	15 16	1,800.00	OGB		
0	SPARE		SAS	1 2 3 4				0.00GB			
Tabu	lar	Gr	aphical								
Encle	osures F	ront View									
	Health	16 C	Name	Туре	State	Size	Enclos	ure	Serial	Number	Status
	0	¢	Disk-1.5	SAS	RAID5	450.0GB	Enclose	ure-1	JMX33	твс	ок
	0	¢	Disk-2.5	SAS	RAID5	450.0GB	Enclos	ure-2	30029	22600009013SLF4	ок
	0	¢	Disk-3.5	SAS	RAID5	450.0GB	Enclos	ure-3	30029	39H00009012NR5X	ок
	🚫 OK	<	Disk-4.5	SAS	RAID5	450.008	Enclos	ure-4	JMX2>	6НС	ок
											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 5th 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	vd01 (RAID	5)				
System Time 2010-03-02 04:37:41	Niau Danisi	-/		-1-	A Deckman	
System Events 🔀 2 🥂 4 🎧 179	view + Provisio	oning Coningur				
Configuration View	vd01 (RAID5) View	> Overview				
	Vdisk Over	view				
MSA2312sa	Details about a specif	ficundisk				
Vdisks	0	Snap Pools	0	0.0KB	Laurandonia	
		950.				
成 vd02 (RAID5)	Properties for vd0)1	1			
vd03 (BAID5)	Property		Value			
	Health		🚫 ок			
	Health Reason		Virtual-disk	is fault tolerant.		
Hosts	Name		vd01			
Physical	Size		1798.5GB			
Enclosure 1	Free		1798.5GB			
Enclosure 2	Current Owner		A			
Enclosure 3	Preferred Owner		A			
Enclosure 4	Serial Number		00c0ffda17	4f00001f1f8c4b00000	000	
	RAID		RAID5			
	Disks		5			
	Spares		0			
	Chunk Size		64k			
	Created		2010-03-01	20:10:07	1.00	
	Minimum Disk Size		449.6GB		/	
	Status		FTOL		1	
	Current Job		Initialize (72%)	K	
				13 (940) (1) (1)		

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:

System Status System Time 2010-03-02 23:27:30	vd02 (vd02 (RAID5)						
	View 👻	Provisioning 👻 C	onfiguration 👻	Tools -				
System Events 🔀 2 🥂 12 🕦 222	vd02 (RAII	Create Volume 🦟						
Configuration View	N/allia la	Create Volume Set						
	Valsk	Create Multiple Snaps	hots					
MSA2312sa	Details abo	Delete Volumes						
	Vdisk C	Delete Valati						
VOISKS	н	H Delete Valsk			Storage Sp			
		Expand Vdisk		1.8TB				
		JUK Disks	0	1.818	_			
Vd04(RAIDS)	0	Volum	es O	0.0KB	Innormation			
Hosts	0	Snap	Pools 0	0.0KB	Luuruntuut			
Enclosure 1								
Enclosure 2	Properti	es for vd02						
Enclosure 3	Propert	У	Value	Value Value Value Virtual-disk is fault tolerant. vd02				
	Health							
Enclosure 4	Health R	eason	Virtual					
	Name		vdU2					
	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.

em Events 🗙 2 🥂 12 🚺 222 guration View	View - Provisioning - Configuration - Tools - vd02 (RAID5) > Provisioning > Create Volume Create Volume
MISAL231288 Logical Vdisks Vdisks Vdiaks	Volume name:* vd02_v001 Size: 1798 0GB OpenVMS Volume?: OpenVMS Volume UID: Map

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)



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.

lume	a vd02, v001 (*	(798 5GB) > Provisioning	> Explicit Mann	inae		
iume	5 WG02_W001 (rrse.sob) > Provisioning	- схриск марр	niyə		
xpl	licit Volu	me Mappings				
odify	the volume ma	ppings to specific hosts by us	ing the default m	ap or explicit map settings		
0	туре	HUSEID	name	FUILS	LUR	ALLESS
0	Default	500605B0019C88F0				not-mapped
0	Explicit	500605B0019CE3D0	GLVVM001a	A1,A2,A3,A4,B1,B2,B3,B4	2	read-write
0	Default	500605B0019C88F4				not-mapped
۲	Explicit	500605B0019CE3D4	GLVVM001b	A1,A2,A3,A4,B1,B2,B3,B4	2	read-write
lap: UN:*	Clear	to remove existing mapping) Access:	read-write	~		
lap: UN:* Grap	Clear 2 ports from the hical	to remove existing mapping) Access: view or list below: Tabular A	read-write		1	

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.

-

1

tem Status	MSA2312sa					
stem Time 2010-03-02 04:54:15	WISA2	5125a				
	View 👻	Provisioning 👻	Configuration	n v Too	ols 👻	
stem Events 🔀 2 🥂 4 🚺 179	MSA2312s	Provisioning Wizar	ď			
figuration View	Quete	<u>a</u>				
	Syste	Add Host				
🖬 📑 MSA2312sa		Create Voick				
Logical	System		0000000000			
Vdisks vd01 (RAID5) vd02 (RAID5) vd03 (RAID5)	н	Create Multiple Sh	apsnots	t		
	0 0	Delete Vdisks				
		Delete Volumes				
	0	Remove Hosts				
	0 (Manage Global Spares				
Hosts	0	Delete Schedule	1			
50060580019C88E0		36	lum an	-		
50060580019CE3D4		V0	lumes	0		
	0	Sn	ap Pools	0		
500003D0013C00F4	0	Sn	apshots	0		
Physical Ecclosure 1	0	Sci	hedules	0		
Enclosure 1	0	Co	nfiguration Limits	5		
Enclosure 2	0	Lic	Licensed Features			
Enclosure 3	0	Ve	Versions			
Enclosure 4	System					
	Propert	у	V	/alue		
	Health		(🔈 ок		
	Redunda	ancy Mode	A	ctive-Active	2 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.

	12sa > Provisio	ning > Manage G	lobal Spares							
lar	nage Glob	al Spares								
d or	remove disks from	the selection set to	define the glob	al spares						
D	isk Sets, Tota <u>l S</u> p	ace: 900.2GB: 📒		900.2 G B						
	Туре	Disk Type	Disks				Size		Complete	
۲	GLOBAL SP	All	1 2 3	4 5 6 7 8			900.000	8		
Tabu	lar	Graphical								
The second	losures Front Vie	W		10				w		
Enci				2213.001.07	Size	Enclos	ure	Serial	Number	Status
Enci	Health	Name	Туре	State	JILC	and the second sec	1000000	Conception of the local distance	CONTRACTOR AND A CONTRACT OF A DECISION OF A DECISIONO OF	
	Health	Name Disk-1.1	Type SAS	GLOBAL SP	450.0GB	Enclos	ire-1	JMX33	G8C	ок

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:

vstem Status		500605B0019CE3D4		
		View - Provisioning -		
iystem Events 🔀 2 🤼 6 🊺 198		500605Bog Manage Host Mappings		
onfiguration View		Remove Host		
		Host (
📑 🚺 MSA2312sa		Details ab		
Logical		Configure CHAP		
Udisks		Formement Count		
3 (ICALDS) Volume vd01_v001 (1798.5GB)				
)	Manc 1		
vd02 (RAID5)				
vd03 (RAID5)		Properties for		
vd04 (RAID5)		Property	Value	
E Hosts		Host ID	500605B0019CE3D4	
GLVVM001		Name		
500605B0019C88F0		Discovered	Yes	
500605B0019CE3D4		Mapped	Yes	
500605B0019C88F4		Profile	Standard	
Physical				
Enclosure 1	-			

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	GLVVM001
System Time 2010-03-02 22:32:01	View - Provisioning -
System Events 🔀 2 🥂 6 🕕 198	GLVVM001 > Provisioning > Rename Host
Configuration View	D
	Modify the name
 Logical Vdisks Volume vd01_v001 (1798.5GB) Vd02 (RAID5) vd03 (RAID5) vd04 (RAID5) Hosts GL VVM007a S00605B0019C88F0 GL VVM001b S00605B0019C88F4 Physical Enclosure 1 	Name:* GLVVM001a Profile: Standard Modify Name

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 Time 2010-03-02 22:32:35	GLVVM001a	GLVVM001a				
	View - Provisioning -					
System Events 🔀 2 🤼 6 🚺 198	GLVVM001a > View > Ov	verview				
onfiguration View						
•	Host Overview	V				
🔲 🏭 MSA2312sa 🛛 🔺	Details about a specific host					
Logical	Host Overview					
vd01 (RAID5)	Component	Count				
Volume vd01_v001 (1798.5GB)	 Host 					
vd02 (RAID5)	O Maps	1				
vd03 (RAID5)	Properties for GLVVM0	001a				
vd04 (RAID5)	Property	Value				
Hosts	Host ID	500605B0019CE3D0				
GLVVI/001a	Name	GLVVM001a				
500605B0019C88F0	Discovered	Yes				
GLVVM001b	Mapped	No				
500605B0019C88F4	Profile	Standard				
Physical						
Enclosure 1						
× · · · ·						

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.