Product Release Notes for
SANtricity® ES Storage Manager Version 10.77

May 2011

51472-00, Rev. A

Revision History

Version and Date	Description of Changes
51472-00, Rev. A, May 2011	Initial release of the document.

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Product Release Notes for SANtricity® ES Storage Manager Version 10.77

Documentation Set Corrections

ST2500 M2 Array Module Installation

- Step 1 – Preparing for ST2500 M2 Array Module Installation, Gathering Items, ST2500 M2 Cables and Connectors – The serial cable shown in the graphic shows the wrong connector. It should show a DB-9 connector.
- Step 7 - Connecting the ST2500 M2 Array Module to the Drive Modules, Things to Know – The graphic "Drive Channel Ports on the ST2500 M2 Array Module" is missing. Figure 1 shows the missing graphic.

Figure 1 Drive Channel Ports on the ST2500 M2 Array Module

98008-01
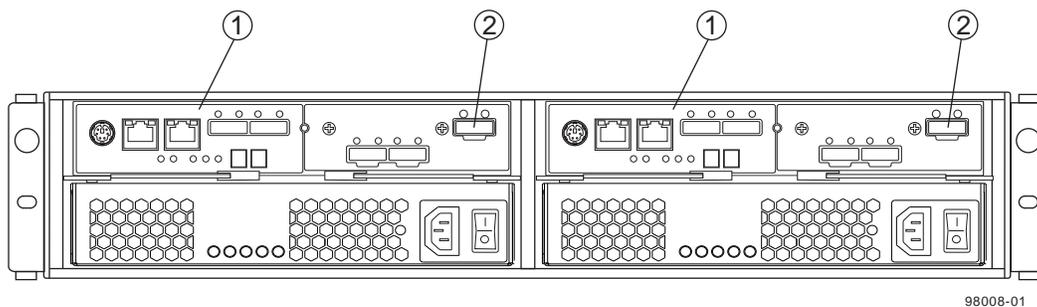
Configuring the Host Bus Adapter

This section contains additional information that was omitted from the *Initial Configuration and Software Installation Guide*, which describes how to configure your operating systems (OSs), failover drivers, and host bus adapter (HBA) settings for Fibre Channel (FC), iSCSI, and SAS protocols.

Use the following table to determine whether to make changes to the OS, the failover driver, or the software initiator for your configuration. Make OSs changes first, then alter failover driver settings, and then make changes to the HBA settings. Follow the table from left-to-right, and use the appropriate settings for your configuration.

NOTE Not applicable indicates that the failover driver or software initiator does not apply to that OS.

Table 1 Configuration Changes for Operating Systems, Failover Drivers, and HBAs

Operating System	Failover Driver	FC Host Bus Adapter	SAS Host Bus Adapter Protocol	iSCSI Host Bus Adapter or Software Initiator Protocol
Linux with MPP failover drivers	MPP Failover Driver Configuration Changes	■ Linux FC Brocade HBA Changes for the DMMP Failover Driver ■ Linux FC Emulex HBA Changes for the MPP Failover Driver ■ Linux FC QLogic HBA Changes for the MPP Failover Driver	SAS HBA Setting Changes	Linux iSCSI Protocol Settings for the HBAs
Linux with DMMP failover drivers	Linux DMMP Failover Driver Configuration Changes	■ Linux FC Brocade HBA Changes for the DMMP Failover Driver ■ Linux FC Emulex HBA Changes for the DMMP Failover Driver ■ Linux FC QLogic HBA Changes for the DMMP Failover Driver	SAS HBA Setting Changes	Linux DMMP Failover Driver Configuration Changes
Windows	Windows 2003 and Windows 2008 MPIO/DSM Failover Driver Settings	■ Brocade FC HBA Settings for the Windows OS ■ Emulex Fibre Channel HBA Settings for the Windows OS ■ QLogic HBA Settings for the Windows OS	SAS HBA Setting Changes	Changing the Windows FC and iSCSI HBA Settings
VMware with ESX 3.5 or ESX 4.1	No change is required to any of the failover driver settings.	QLogic FC HBA Setting Changes for the VMware OS	SAS HBA Setting Changes for the VMware OS	■ No change is required to the iSCSI HBA with ESX 3.5. ■ Changing the HBA Settings for the VMware OS
■ HP-UX ■ Changing the HP-UX OS Settings for HBAs	Not applicable	No changes are required to the HP-UX FC HBA settings.	Not applicable	Not applicable
Sun Solaris	Sun Solaris systems use the MPXIO failover driver, which requires no changes.	No changes are required to either the QLogic or the Emulex HBA settings.	Not applicable	Not applicable
Xen	MPP Failover Driver Configuration Changes	Changing the Xen HBA Settings	Not applicable	Not applicable

Changing the Linux OS Settings, the Failover Driver Settings, and the HBA Settings for the DMMP Failover Driver

Use the following table to see the changes required by the Linux OSs to either failover drivers or HBA settings when using the DMMP failover driver.

Table 2 Linux DMMP Failover Driver Configuration Changes

Setting Changes for Linux Failover Driver Configurations
Setting name: `dev_loss_tmo` Default value: `10` Recommended value: `15` Setting location: `/etc/multipath.conf` Comments: Driver time-out value.
Setting name: `failback` Default value: Manual failback Recommended value: `10` Setting location: `/etc/multipath.conf` Comments: This change applies only to non-cluster configurations. For cluster configurations, do not change this value from the default.
Setting name: `fast_io_fail_tmo` Default value: 5 Recommended value:10 Setting location: `/etc/multipath.conf` Comments: The midlayer uses either this value or the `dev_loss_tmo` value, whichever is set to a lower value. If fast failover is set, some errors normally retried by the driver are immediately transferred to the alternate path.
Setting name: `features` Recommended value: `2 pg_init_retries 50` Setting location: `/etc/multipath.conf` Comments: This parameter allows for a higher number of mode-select retries, because the SLES 11.0 OS transfers only one logical unit number (LUN) at a time.
Setting name: `getuid_callout` Default value: `"/lib/udev/scsi_id -- whitelisted -- device=/dev/%n"` Recommended value: `"/lib/udev/scsi_id -g -u -d/dev/%n"` Setting location: `/etc/multipath.conf`
Setting name: `hardware_handler` Recommended value: `1 RDAC` Setting location: `/etc/multipath.conf` Comments: This parameter sets the RDAC device handler.
Setting name: `no_path_retry` Default value: 0 Recommended value: `30` Setting location: `/etc/multipath.conf` Comments: This midlayer uses either this setting or the `dev_loss_tmo` value, whichever is set to a lower value. If a fast failover is set, some errors that are normally retried by the driver are transferred to the alternate path.
Setting name: `path_checker` Default value: `directio` Recommended value: `RDAC` Setting location: `/etc/multipath.conf`

Setting Changes for Linux Failover Driver Configurations
Setting name: `path_grouping_policy` Default value: `multibus` Recommended value: `group_by_prio` Setting location: `/etc/multipath.conf`
Setting name: `path_selector` Default value: `round-robin 0` Recommended value: `round-robin 0` Setting location: `/etc/multipath.conf`
Setting name: `polling_interval` Default value: 5 Recommended value: 5 Setting location: `/etc/multipath.conf`
Setting name: `prio` Recommended value: `RDAC` Setting location: `/etc/multipath.conf`
Setting name: `rr_min_io` Default value: `1000` Recommended value: `100` Setting location: `/etc/multipath.conf`
Setting name: `rr_weight` Default value: `uniform` Recommended value: `priorities` Setting location: `/etc/multipath.conf`

Table 3 Linux FC Brocade HBA Changes for the DMMP Failover Driver

Component	Setting Changes
Brocade HBA for Linux OSs with the DMMP failover driver	Setting name: `path_tov` Default value: `0x1E` Recommended value: `0xA`

Table 4 Linux FC Emulex HBA Changes for the DMMP Failover Driver

Component	Setting Changes
Emulex HBA for Linux OSs with the DMMP failover driver	Setting name: `lpfc_devloss_tmo` Recommended value: `10` Setting location: ■ For the SLES 11.0 OS and all subsequent releases: `/etc/modprobe.conf.local` ■ For the RHEL 6 OS: `/etc/modprobe.d/` with "`options lpfc_devloss_tmo=10`"

Table 5 Linux FC QLogic HBA Changes for the DMMP Failover Driver

Component	Setting Changes
QLogic HBA for Linux OSs with the DMMP failover driver	Setting name: `qlport_down_retry` Recommended value: `10` Setting location: ■　For the SLES 11.0 OS and all subsequent releases: `/etc/modprobe.conf.local` ■　For the RHEL 6 OS: `/etc/modprobe.d/` with `"options qla2xxx qlport_down_retry=10"`

Table 6 Linux iSCSI HBA Changes for the DMMP Failover Driver

Component	Setting Changes
iSCSI HBA for Linux OSs with the DMMP failover driver	Setting name: `node.session.timeo.replacement_timeout` Default value: `120` Recommended value: `20` Setting location: `/etc/iscsi/iscid.conf`
	Setting name: `node.startup` Recommended value: `automatic` Setting location: `/etc/iscsi/iscsid.conf`
	Setting name: `noop_out_interval` Recommended value: `5` Setting location: `/etc/iscsi/iscsid.conf`
	Setting name: `noop_out_timeout` Recommended value: `5` Setting location: `/etc/iscsi/iscsid.conf`

Changing the Linux MPP Failover Driver and HBA Settings

Use the following table to see the changes required by the Linux MPP failover driver and the HBAs.

Table 7 MPP Failover Driver Configuration Changes

Component	Setting Changes
MPP failover driver	Setting name: `DisableLunRebalance` Default value: `0x0` Recommended value: `0x3` Setting location: `/etc/mpp.conf` Comments: This setting applies only to cluster configurations.

Table 8 Linux FC Brocade HBA Changes for the MPP Failover Driver

Component	Setting Changes
FC Brocade HBA for Linux OSs with the MPP failover driver	Setting name: `rport_del_timeout` Default value: `0x5a` Recommended value: `60` Setting location: `/etc/modeprobe.conf`

Table 9 Linux FC Emulex HBA Changes for the MPP Failover Driver

Component	Setting Changes
FC Emulex HBA for Linux OSs with the MPP failover driver	Setting name: `LinkTimeOut` Default value: `30` Recommended value: `60` Comments: Use the Emulex HBAnyware application to change the setting.
	Setting name: `NodeTimeOut` Default value: `0x1E` Recommended value: `0X3c` Comments: Use the Emulex HBAnyware application to change the setting.

Table 10 Linux FC QLogic HBA Changes for the MPP Failover Driver

Component	Setting Changes
FC QLogic HBA for Linux OSs with the MPP failover driver	Setting name: `ExecutionThrottle` Default value: `0` Recommended value: `256` Comments: Use the QLogic BIOS to change the setting for the in-the-box driver. Use the QLogic SANsurfer application to change the setting for the standard driver.
	Setting name: `qlport_down_retry` Default value: `30` Recommended value: `70` Setting location: `/etc/modprobe.conf`. Comments: Add `"options qlport_down_retry=70"` to the setting.

Table 11 Linux iSCSI Protocol Settings for the HBAs

Component	Setting Changes
iSCSI settings for Linux OSs with the MPP failover driver	Setting name: `node.session.timeo.replacement_timeout` Default value: `120` Recommended value: `144` Setting location: ■ For the SLES 11.0, RHEL 5, and RHEL 6 OSs: `/etc/iscsi/iscsid.conf` ■ For the SLES 10.0 OS: `/etc/iscsid.conf`
	Setting name: `node.startup` Recommended value: `automatic` Setting location: ■ For the SLES 11.0, RHEL 5, and RHEL 6 OSs: `/etc/iscsi/iscsid.conf` ■ For the SLES 10.0 OS: `/etc/iscsid.conf`

Changing the Windows FC and iSCSI HBA Settings

Use the following tables to see the changes required by the Windows OS to either failover drivers or HBA settings.

Table 12 Windows OS Configuration Changes for FC and iSCSI HBAs

Component	Setting Changes
Windows 2003 OS settings	Setting name: `IO Timeout Value` Default value: `0x14` Recommended value: `0x78` Recommended value when using iSCSI HBA: `0xA0` Setting location: `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\disk`
Windows 2008 OS settings	Setting name: `IO Timeout Value` Default value: `0x14` Recommended value: `0x3c` Setting location: `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\disk`

Table 13 Windows 2003 and Windows 2008 MPIO/DSM Failover Driver Settings

Component	Setting Changes
MPIO/DSM failover driver settings for the Windows 2003 OS and the Windows 2008 OS	Setting name: `DisableLunRebalance` Default value: `0x0` Recommended value: `0x3` Setting location: `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\mppdsm` Comments: This setting applies only to MSCS cluster configurations.

Table 14 Brocade FC HBA Settings for the Windows OS

Component	Setting Changes
Brocade FC HBA settings for the Windows 2008 OS	Setting name: `path_tov` Default value: `0x1E` Recommended value: `0xA` Comments: Use the Brocade BCU command line application to change the setting location.
Brocade FC HBA settings for the Windows 2003 OS	Setting name: `path_tov` Default value: `0x1E` Recommended value: `0x3C` Comments: Use the Brocade BCU command line application to change the setting location.

Table 15 Emulex Fibre Channel HBA Settings for the Windows OS

Component	Setting Changes
Emulex HBA settings for the Windows 2008 OS with Fibre Channel	Setting name: `LinkTimeOut` Default value: `0x1E` Recommended value: `0xA` Comments: Use the Emulex HBAnyware application to change the setting location.
	Setting name: `NodeTimeOut` Default value: `0x1E` Recommended value: `0xA` Comments: Use the Emulex HBAnyware application to change the setting location..
Emulex HBA settings for the Windows 2003 OS with Fibre Channel	Setting name: `LinkTimeOut` Default value: `30` Recommended value: `60`
	Setting name: `NodeTimeOut` Default value: `0x1E` Recommended value: `0x3C`

Table 16 QLogic HBA Settings for the Windows OS

Component	Setting Changes
QLogic settings for the Windows 2008 OS with Fibre Channel	Setting name: `ExecutionThrottle` Default value: `8` Recommended value: `255` Comments: Use the QLogic SANsurfer application to change the setting location.
	Setting name: `LinkDownTimeOut` Default value: `30` Recommended value: `10` Comments: Use the QLogic SANsurfer application to change the setting location.
	Setting name: `LunsPerTarget` Default value: `8` Recommended value: `0` Comments: Use the QLogic SANsurfer application to change the setting location.
	Setting name: `PortDownRetryCount` Default value: `30` Recommended value: `10` Comments: Use the QLogic SANsurfer application to change the setting location.

Component	Setting Changes
Emulex settings for the Windows 2003 OS with FC	Setting name: `ExecutionThrottle` Default value: `8` Recommended value: `255` Comments: Use the Emulex HBAnyware application to change the setting location.
	Setting name: `LinkDownTimeOut` Default value: `30` Recommended value: `60` Comments: Use the Emulex HBAnyware application to change the setting location.
	Setting name: `LoginRetryCount` Default value: `8` Recommended value: `30` Comments: Use the Emulex HBAnyware application to change the setting location.
	Setting name: `LunsPerTarget` Default value: `8` Recommended value: `0` Comments: Use the Emulex HBAnyware application to change the setting location.
	Setting name: `PortDownRetryCount` Default value: `30` Recommended value: `70` Comments: Use the Emulex HBAnyware application to change the setting location.

Table 17 iSCSI HBA Settings for the Windows OS

Component	Setting Changes
Windows 2008 OS	Setting name: `LinkDownTime` Default value: `0x3C` Recommended value: `0x1E` Setting location: `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E97B-E325-11CE-BFC1-08002BE10318}\`*XXX*`\parameters`, where *XXX* is the only expandable folder.
Windows 2003 OS	Setting name: `LinkDownTime` Default value: `0x3C` Recommended value: `0x90` Setting location: `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Class\{4D36E97B-E325-11CE-BFC1-08002BE10318}\`*XXX*`\parameters`, where *XXX* is the only expandable folder.

Changing the SAS Host Bus Adapters

Use the following table to see the changes required by the SAS HBA settings.

Table 18 SAS HBA Setting Changes

Component	Setting Changes
For the Windows 2008 OS and the Linux OS using either DMMP failover drivers, obtain the required settings for the latest LSI SAS HBA firmware from this website: http://kb.lsi.com/DownloadsCategory339.aspx	
For Windows 2003 OSs and Linux OSs using MPP failover drivers, you can obtain the latest LSI SAS HBA firmware required settings from http://kb.lsi.com/DownloadsCategory339.aspx 1. Load the HBA firmware. 2. Change the settings listed below through the HBA BIOS.	
SAS HBA settings for both the Windows 2003 OS and Linux OSs with MPP failover drivers	Setting name: `IODeviceMissingDelay` Default value: `5` (the new default value with the customer firmware) Recommended value: `8` Comments: Use theHBA BIOS to change the setting location.
	Setting name: `ReportDeviceMissingDelay` Default value: `10` (the new default value with the customer firmware) Recommended value: `144` Comments: Use the HBA BIOS to change the setting location.

Changing the HBA Settings for the VMware OS

Use the following tables to see the changes required to HBA settings when running on the a VMware operating system.

Table 19 QLogic FC HBA Setting Changes for the VMware OS

Component	Setting Changes
QLogic FC host bus adapter changes	Setting name: `qlink_down_timeout` Default value: `30` Recommended value: `10` Comments: Use the QLogic SANsurfer application to change this setting.
	Setting name: `qlport_down_retry` Default value: `15` Recommended value: `5` Comments: Use the QLogic SANsurfer application to change this setting.

Table 20 SAS HBA Setting Changes for the VMware OS

Component	Setting Changes
Obtain the required settings for the LSI SAS HBA firmware from this website: http://kb.lsi.com/DownloadsCategory339.aspx	
NOTE Make sure you load the HBA firmware first, and then access the HBA BIOS to change the following settings.	
SAS host bus adapter changes	Setting name: `IODeviceMissingDelay` Default value: `5` (new default with custom firmware) Recommended value: `0` Setting locations: Use the HBA BIOS to change the setting location.
	Setting name: `ReportDeviceMissingDelay` Default value: `10` (new default with custom firmware) Recommended value: `0` Setting locations: Use the HBA BIOS to change the setting location.

Table 21 iSCSI Host Bus Adapter Changes for the VMware OS

Component	Setting Changes
iSCSI host bus adapter changes	Setting name: `noop_out_interval` Default value: `40` Recommended value: `15` Setting locations: `vmkisci-tool -W -a "noop_out_interval=15" vmhba#` (where # is the iSCSI adapter number)
	Setting name: `noop_out_timeout` Recommended value: `10` Setting locations: `vmkisci-tool -W -a "noop_out_timeout=10" vmhba#` (where # is the iSCSI adapter number)

Changing the HP-UX OS Settings for HBAs

Use the following table to see the changes required for HP-UX OS to use the HBAs.

NOTE Make sure that you make these changes after the LUNs are visible to the OS.

Table 22 HP-UX OS Changes for HBAs

Component	Setting Changes

HP-UX OSs changes	Setting name: `Disk Timeout Value`
	Default value: `30`
	Recommended value: `120`
	Setting locations:
	■ For the HP-UX 11iv2 OS and previous versions that use the legacy device node –
	    `#pvchange-t120/dev/dsk/c6t0d0`
	■ For 11iv3 that uses the persistent device special files (DSF) device node –
	    `#pvchange-t120/dev/disk/disk_number`

	Setting name: `IO Timeout Value` Recommended value: `240` Setting location: `#lvchange -t 240/dev/vg01/lvol1.`

Changing the Xen HBA Settings

Use the following table to see the changes required to the QLogic HBA settings for the Xen system.

Table 23 QLogic FC HBA Settings Changes for the Xen System

Component	Setting Changes
FC QLogic HBA changes for the Xen system	Setting name: `ExecutionThrottle` Default value: `0` Recommended value: `256` Comments: Use the QLogic BIOS to change the setting location. Use the QLogic SANsurfer application to change the setting location for the standard driver.
	Setting name: `qlport_down-retry` Default value: `30` Recommended value: `70` Setting location: `/etc/modprobe.conf`

Restrictions

This section provides updated information about the features and functionality of the SANtricity ES Storage Manager Version 10.77.

I/O Error Occurs When a Controller Is Reset on an Oracle Solaris 10U9 Host

Operating System

Oracle Solaris 10U9 x86 and SPARC

Hardware/Software/Firmware

SANtricity ES Storage Manager Version 10.77

Problem or Restriction

An Oracle Solaris 10U9 host with an MPxIO failover driver encounters an I/O error during a controller reset. The `\var\adm\messages` file has `SCSI transport failed: reason 'tran_err': giving up` messages logged by the SCSI layer. You might temporarily lose access to the data.

Workaround

To recover from this problem, restart I/O operations.

Major Event Log (MEL) Logs a Module Path Redundancy Loss Critical Event During an ESM/IOM Firmware Upgrade

Hardware/Software/Firmware

ST2500 M2 controller-drive tray with a DE6600 drive module with two expansion DE6600 SAS drive modules

Problem or Restriction

This problem occurs during environmental services monitor (ESM/IOM) firmware download operations, but only when more than one expansion drive trayexists.

The ESM/IOM firmware download causes an ESM/IOM to reboot, which interrupts the I/O path to any expansion modules cascaded behind the controller-drive tray being updated; however, the I/O path is not interrupted to the controller-drive tray being updated. This situation causes the controller firmware to detect a loss-of-module redundancy condition, which the controller firmware attempts to suppress during ESM/IOM firmware downloads.

A MEL event is logged, and a transient Needs Attention condition occurs for the storage array. The Needs Attention condition persists for approximately one minute or less after the ESM/IOM firmware download process completes.

Workaround

No workaround is necessary. Ignore the MEL event message.

Red Hat Enterprise Linux Host Is Unresponsive During a Controller Reboot with iSCSI and Device Mapper Multipath

Operating System

Red Hat Enterprise Linux (RHEL) with iSCSI and Device Mapper Multipath (DMMP)

Hardware/Software/Firmware

DMMP failover driver

Problem or Restriction

The problem occurs when the shutdown sequence of an vm2-monitor and iSCSI is reversed. The shutdown messages indicate that iSCSI failed to shut down. The host does not reboot. The host runs the `vgs` command to query the pools and issues an error messages that the host is unresponsive for more than two minutes.

Workaround

To recover from this problem, perform these actions:

1. Open a terminal window.
2. Run the `iscsiadm -m node -u` command to log out of all iSCSI sessions.
3. Run the `service iscsi stop` command to shut down the iSCSI service.
4. Reboot the host.

I/O Errors Occur during Controller Firmware Download

Operating System

Red Hat Enterprise Linux (RHEL) version 6 with kernel 2.6.32

> **NOTE** This problem does not occur in RHEL version 6.0 with kernel 2.6.33.

Hardware/Software/Firmware

- PowerPC
- Emulex 10N9824 HBA
- Device Mapper Multipath (DMMP) failover driver
- ST2500 M2 controller-drive tray
- Sun StorageTek™ 6180 controller-drive tray

Problem or Restriction

This problem occurs when an I/O error occurs on a host during an online controller firmware upgrade.

Workaround

To avoid this problem, quiesce the host I/O before the performing controller firmware upgrades. To recover from this problem, make sure that the host reports that it has optimal paths available to the storage array controllers, and then resume I/O.

Cluster Startup Fails When Devices Are in a Unit Attention State

Operating System

Red Hat Enterprise Linux (RHEL) version 6.0 with Native Cluster

Hardware/Software/Firmware

Device Mapper Multipath (DMMP) failover driver

Problem or Restriction

This problem occurs when the DMMP failover driver is used with the RHEL version 6.0 OS. If you try to set up a Red Hat cluster with the DMMP failover driver, cluster startup might fail during the unfencing stage, where each host registers itself with the SCSI devices. The devices are in a Unit Attention state, which causes the SCSI registration command issued by the host during startup to fail. When the cluster manager (cman) service starts, the logs show that the nodes failed to unfence themselves, which causes the cluster startup to fail.

Workaround

To avoid this problem, do not use the DMMP failover driver with RHEL version 6.0. To recover from this problem, open a terminal window, and run `sg_turs -n 5 <device>`, where `<device>` is a SCSI device that is virtualized by the DMMP failover driver. Run this command on every `/dev/sd` device that the DMMP failover driver manages, and it issues a `Test Unit Ready` command to clear the Unit Attention state and allow node registration on the device to succeed.

DMMP Manages the Boot Disk after MPP Is Installed when Default Options Are Used in the OS Installer Menu

Operating System

Red Hat Enterprise Linux (RHEL) version 6.0

Hardware/Software/Firmware

Device Mapper Multipath (DMMP) failover driver

Problem or Restriction

This problem occurs when the operating system (OS) is installed with the default installation settings. The partition table installs the OS on the `multipath` device path. The DMMP failover driver manages the OS. Two different failover drivers could manage the OS logical unit number (LUN), which can cause unforeseen errors and is not a tested or supported configuration.

DMMP manages the virtual LUN while MPP manages the physical LUN, which causes both DMMP and MPP to manage the SAN Boot OS.

Workaround

To avoid this problem, configure the partition table manually to manage the OS with *only* MPP. If a different failover is preferred, configure the partition table manually during OS installation to prevent DMMP from managing both the LUN and the SAN boot LUN.

To recover from this problem, reinstall the OS, and configure the partition table manually, perform these steps:

1. Select **Review and modify partitioning layout** during installation.
2. Delete all volumes in the logical volume manager (LVM) pool.
3. Delete **physical volume (LVM)** from the hard drive group.
4. Select **Free Space** in the hard drive group, and click **Create**.
5. Select **Standard Partition**.
6. Add the partition setup.
   — Mount point as `/`
   — File system type as `ext4`
   — Fill to maximum allowable size
7. Click **Next**, and continue the installation.

ST2500 M2 Controller Firmware Panics during Firmware Download

Hardware/Software/Firmware

- ST2500 M2 controller-drive tray
- Controller firmware version 7.77
- Environmental services monitor(ESM/IOM)

Problem or Restriction

This problem occurs when a firmware download to the controller causes the controller to panic and reboot.

Workaround

No workaround is necessary. The controller automatically reboots, which recovers the system.

Node Unfencing Fails when Automatically Generated Host Keys Are Used during a Red Hat Cluster Suite Services Startup

Operating System

Red Hat Enterprise Linux 6 with Native Cluster

Problem or Restriction

This problem occurs the first time a cluster is set up when the `cluster.conf` file does not have manually defined host keys. When the `cluster.conf` file was first defined to set up a cluster with SCSI reservation fencing, the cluster services were started on the nodes. With SCSI reservation fencing, the hosts try to generate and register a key on the clustered devices as part of the cluster manager's startup. The cluster manager service (cman) fails to start, and the `key cannot be zero` error message appears in the host log.

Workaround

To avoid this problem, use only power fencing. Do not use SCSI reservation fencing. To recover from this problem, change to manually defined host keys, and restart the cluster services.

Red Hat Cluster Suite Services with GFS2 Mounts Cannot Transfer between Nodes when the Client Mounts with NFSv4

Operating System

Red Hat Enterprise Linux 6 Native Cluster

Hardware/Software/Firmware

Problem or Restriction

This problem occurs during an attempt to transfer a cluster service manually when a client is connected using NFSv4. The Global File System (GFS) 2 mount points failed to unmount, which caused the Red Hat Cluster Suite Services to go to the Failed state. The mount point, and all other mount points exported from the same virtual IP address, becomes inaccessible.

Workaround

To avoid this problem, configure the cluster nodes to not allow mount requests from NFS version 4 (NFSv4) clients. To recover from this problem, restart the failed service on the node previously owned it.

ISCSI Unrecoverable Error on a ST2500 M2 Storage Array Occurs after an ERROR: SEDRV ASSERT: MCC WRB Timeout Error in Completion Event

Operating System

All operating systems

Hardware/Software/Firmware

ST2500 M2 controller-drive tray with 10Gb/s iSCSI host interface cards

Problem or Restriction

This problem occurs during controller reboots. The controller that experiences the problem momentarily loses access to the alternate controller. The iSCSI session disconnects and then reconnects approximately 30 seconds later. Logical unit number (LUN) failover might occur, depending on host I/O timeout settings.

Workaround

> No workaround is necessary. The iSCSI session automatically reconnects approximately 30 seconds after it disconnected.

Real-Time Graph for the Storage Array Object Takes a Long Time to Open

Operating System

> All operating systems

Hardware/Software/Firmware

> SANtricity ES Storage Manager Version 10.77

Problem or Restriction

> This problem occurs when the storage array and the SANtricity ES Storage Manager client are in two different locations, the storage array contains more than 1024 volumes, and either network problems occur, or the communication between the storage array and the SANtricity ES Storage Manager client is delayed.

> The total time to launch the graph from a remote client is approximately 40 seconds to 50 seconds, and it might take longer when there is high network traffic, heavy I/O running on a large configuration, or both.

Workaround

> To avoid this problem, use a local SANtricity ES Storage Manager client to manage the storage array.

Host Aborts I/O Operations

Operating System

> Red Hat Enterprise Linux version 6.0

Problem or Restriction

> This problem occurs during an online controller firmware upgrade. The controller is not responding quickly enough to a host read or write to satisfy the host. After 30 seconds, the host sends a command to abort the I/O. The I/O aborts, and then starts again successfully.

Workaround

> Quiesce the host I/O before performing the controller firmware upgrade. To recover from this problem, either reset the server, or wait until the host returns an I/O error.

Host Attempts to Abort I/O Indefinitely

Operating System

> Red Hat Enterprise Linux version 6.0 with kernel 2.6.32

> **NOTE** This problem does not occur in Red Hat Enterprise Linux version 6.0 with kernel 2.6.33.

Hardware/Software/Firmware

> Controller firmware version 7.77.*xx*

Problem or Restriction

This problem occurs under situations of heavy stress when storage arrays take longer than expected to return the status of a read or write. The storage array must be sufficiently stressed that the controller response is more than 30 seconds, at which time a command is issued to abort if no response is received. The abort will be retried indefinitely even when the abort is successful. The application either times out or hangs indefinitely on the read or write that is being aborted. The messages file reports the aborts, and resets might occur on the LUN, the host, or the bus.

Factors effecting controller response include Remote Volume Mirroring, the controller state, the number of attached hosts, and the total throughput.

Workaround

To recover from this problem, reset the power on the server.

Storage Manager Installation Fails when a 32-Bit Installer Is Incorrectly Used on an x86_64-bit Linux OS

Operating System

Red Hat Linux Enterprise x86_64-bit

Hardware/Software/Firmware

SANtricity ES Storage Manager 32-bit installer

Problem or Restriction

This problem occurs when a 32-bit SANtricity ES Storage Manager installer is used on a 64-bit Linux OS. The installation fails, but no `unsupportedArchitectureError` error message appears and shows that the installation failed. InstallAnyware does not support an architecture check before an installation, and the same InstallAnyware script is used by all operating systems, so there is no architecture-specific check for Linux x86 installers. Functionality is not impacted.

Workaround

To avoid this problem, make sure you use the correct SANtricity ES Storage Manager architecture-specific build. To recover from this problem, reinstall SANtricity ES Storage Manager with the correct architecture-specific build.

Please
Recycle

51472-00A