



sfu events

ONTAP EMS reference

NetApp
November 20, 2025

Table of Contents

sfu events	1
sfu.adaptersuspendio events	1
sfu.adapterSuspendIO	1
sfu.adapterSuspendIO.ndu	1
sfu.auto events	1
sfu.auto.update.off.impact	2
sfu.badbridgeshelfconfig events	2
sfu.badBridgeShelfConfig	2
sfu.ctrllerlmntspershelf events	3
sfu.ctrllerElmntsPerShelf	3
sfu.download events	3
sfu.download.details	3
sfu.download.done.details	4
sfu.downloadctrllerbridge events	4
sfu.downloadCtrllerBridge	4
sfu.downloaderror events	5
sfu.downloadError	5
sfu.downloadingcontroller events	5
sfu.downloadingController	5
sfu.downloadingctrlerr1xx events	6
sfu.downloadingCtrllerR1XX	6
sfu.downloadstarted events	6
sfu.downloadStarted	6
sfu.downloadsucces events	6
sfu.downloadSuccess	7
sfu.downloadsummary events	7
sfu.downloadSummary	7
sfu.downloadsummaryerrors events	7
sfu.downloadSummaryErrors	7
sfu.fcdownloadfailed events	8
sfu.FCDownloadFailed	8
sfu.firmwaredownrev events	8
sfu.firmwareDownrev	9
sfu.firmwareDownrev.shelf	9
sfu.firmwareuptodate events	9
sfu.firmwareUpToDate	9
sfu.nsmdownloadfailed events	10
sfu.NSMDownloadFailed	10
sfu.partnerinaccessible events	10
sfu.partnerInaccessible	10
sfu.partnernotresponding events	11
sfu.partnerNotResponding	11
sfu.partnerrefusedupdate events	11

sfu.partnerRefusedUpdate	11
sfu.partnerupdatecomplete events	12
sfu.partnerUpdateComplete	12
sfu.partnerupdatetimeout events	12
sfu.partnerUpdateTimeout	12
sfu.rebootrequest events	13
sfu.rebootRequest	13
sfu.rebootrequestfailure events	13
sfu.rebootRequestFailure	13
sfu.resumediskio events	13
sfu.resumeDiskIO	13
sfu.sasdownloadfailed events	14
sfu.SASDownloadFailed	14
sfu.statuscheckfailure events	14
sfu.statusCheckFailure	14
sfu.suspenddiskio events	15
sfu.suspendDiskIO	15
sfu.suspendses events	15
sfu.suspendSES	15

sfu events

sfu.adaptersuspendio events

sfu.adapterSuspendIO

Severity

INFORMATIONAL

Description

This message occurs during a disk shelf firmware update on a disk shelf that cannot perform I/O while updating firmware. Typically, the shelves involved are bridge-based.

Corrective Action

I/O resumes automatically after the firmware update is complete.

Syslog Message

Suspending I/O to %s adapter %s for %d seconds while shelf firmware is updated.

Parameters

adapterType (STRING): Type of adapter that is updating firmware.

channelName (STRING): Name of the adapter on which shelves will be updating firmware.

minutes (INT): Amount of time that I/O will be suspended on the adapter.

sfu.adapterSuspendIO.ndu

Severity

INFORMATIONAL

Description

This message occurs during a disk shelf firmware update on a disk shelf that can perform I/O, but might have to suspend management requests while updating firmware. Typically, the shelves involved are DS12-ESAS, DS20-ESAS, DS4243.

Corrective Action

Suspended data traffic resumes automatically after the firmware update is complete.

Syslog Message

Suspending %s to %s adapter %s for %d seconds while shelf firmware is updated.

Parameters

dataTrafficType (STRING): Type of data traffic: SMP.

adapterType (STRING): Type of adapter that is updating firmware.

channelName (STRING): Name of the adapter on which shelves will be updating firmware.

minutes (INT): Amount of time that specified data traffic will be suspended on the adapter.

sfu.auto events

sfu.auto.update.off.impact

Severity

ERROR

Description

This message occurs when ONTAP® software cannot automatically upgrade the firmware on a disk shelf because the hidden 'shelf.fw.auto.update' option is set to off.

Corrective Action

Set the hidden option 'shelf.fw.auto.update' to "on", or update the firmware manually.

Syslog Message

Firmware could not be updated on I/O module %s with firmware version %s on %s disk shelf %s.shelf%d.
Update the firmware manually.

Parameters

moduleType (STRING): I/O controller module type, for example, AT-FCX/ESH4/SAS/IOM3.

productRev (STRING): Firmware revision level.

shelfType (STRING): Disk shelf enclosure type, for example, DS14-Mk4-FC, DS14-Mk2-FC, or DS14-Mk2-AT.

channelName (STRING): Name of the adapter port or switch port of the disk shelf enclosure.

shelfId (INT): ID of the disk shelf enclosure.

sfu.badbridgeshelfconfig events

sfu.badBridgeShelfConfig

Severity

ALERT

Description

This message occurs when the disk shelf firmware update aborts because it cannot contact the two peer FC-to-SAS bridges.

Corrective Action

Make sure that the storage controller is correctly cabled to the two peer FC-to-SAS bridges and that the bridges are correctly cabled to the SAS disk shelves. Then retry the (advanced privilege) "storage shelf firmware update" command.

Syslog Message

Firmware update aborted on disk shelf %s.shelf%d module %s. Unable to contact two peer FC-to-SAS bridges.

Parameters

channelName (STRING): Name of the adapter port or switch port of the disk shelf that aborted the firmware update.

shelfId (INT): ID of the disk shelf that aborted the firmware update.

module (STRING): Module that aborted the firmware update.

sfu.ctrllerlmntspershelf events

sfu.ctrllerElmntsPerShelf

Severity

INFORMATIONAL

Description

This message occurs when a disk shelf firmware download determines the number of controller elements per shelf that can be downloaded.

Corrective Action

(None).

Syslog Message

%s: %d ES controller %s can be updated on %s.shelf%d.

Parameters

cmdName (STRING): Name of the command issued, such as "storage shelf firmware update".

count (INT): Number of ES controller elements on this shelf that can be downloaded.

pluralElement (STRING): Element or Elements.

channelName (STRING): Name of the adapter port or switch port on which the disk shelf firmware can be downloaded.

shelfId (INT): ID of the disk shelf on which the disk shelf firmware can be downloaded.

sfu.download events

sfu.download.details

Deprecated

Deprecated as of ONTAP® version 9.6. A new EMS message is added.

Severity

NOTICE

Description

This message occurs when a disk shelf firmware update completes download firmware to a disk shelf or shelves in the system.

Corrective Action

Shelf firmware update will be attempted again in the next background shelf firmware update.

Syslog Message

%s: Download of firmware file %s on %s.shelf%d might not have completed on one module as %s. An attempt to download again will be done in the next cycle.

Parameters

cmdName (STRING): Name of the command issued, such as "storage shelf firmware update".

fileName (STRING): Name of the file in /etc/shelf_fw that was being downloaded.

channelName (STRING): Name of the adapter port or switch port on which the disk shelf firmware download error occurred.

shelfId (INT): ID of the disk shelf on which the disk shelf firmware download error occurred.
ErrorReason (STRING): More information about the reason for download error.

sfu.download.done.details

Severity

NOTICE

Description

This message occurs when a shelf firmware update finishes downloading firmware to a shelf or shelves in the system.

Corrective Action

Shelf firmware update will be attempted again in the next background shelf firmware update.

Syslog Message

%s: Download of firmware file on %s.shelf%d might not have been completed on one module because %s.
An attempt to download again will be done in the next cycle.

Parameters

cmdName (STRING): Name of the command issued, such as "storage shelf firmware update".
channelName (STRING): Name of the adapter port or switch port on which the disk shelf firmware download error occurred.
shelfId (INT): ID of the shelf on which the shelf firmware download error occurred.
ErrorReason (STRING): More information about the reason for download error.

sfu.downloadctrllerbridge events

sfu.downloadCtrllerBridge

Severity

INFORMATIONAL

Description

This message occurs when a disk shelf firmware download starts on a particular disk shelf.

Corrective Action

(None).

Syslog Message

%s: Downloading %s on ES controller module %s via SES device %s.%d on %s.shelf%d.

Parameters

cmdName (STRING): Name of the command issued, such as "storage shelf firmware update".
fileName (STRING): Name of the file in /etc/shelf_fw that was being downloaded.
module (STRING): Either Module A or Module B, in which Module A is the upper module in the enclosure on the back side and Module B is the lower module in the enclosure on the back side.
channelNameSES (STRING): Name of the adapter port or switch port on the SES services device on which the disk shelf firmware download is occurring.
scsId (INT): SCSI ID of the SES services device used to download disk shelf firmware.
channelNameShelf (STRING): Name of the adapter port or switch port on which the disk shelf firmware

download is occurring.

shelfId (INT): ID of the disk shelf on which the disk shelf firmware download is occurring.

sfu.downloadererror events

sfu.downloadError

Severity

ERROR

Description

This message occurs when a disk shelf firmware update fails to successfully download firmware to a disk shelf or shelves in the system.

Corrective Action

Redownload the latest disk shelf firmware from the NetApp Support Site at <http://support.netapp.com/NOW/download/tools/diskshelf/> and attempt to download disk shelf firmware again, using the (advanced privilege) "storage shelf firmware update" command.

Syslog Message

%s: Error downloading firmware file %s on %s.shelf%d.%s

Parameters

cmdName (STRING): Name of the command issued, such as "storage shelf firmware update".

fileName (STRING): Name of the file in /etc/shelf_fw that was being downloaded.

channelName (STRING): Name of the adapter port or switch port on which the disk shelf firmware download error occurred.

shelfId (INT): ID of the disk shelf on which the disk shelf firmware download. error occurred.

ErrorReason (STRING): More information about the reason for download error.

sfu.downloadingcontroller events

sfu.downloadingController

Severity

INFORMATIONAL

Description

This message occurs when a disk shelf firmware download starts on a specific disk shelf.

Corrective Action

(None).

Syslog Message

%s: Downloading %s on disk shelf controller module %s on %s.shelf%d.

Parameters

cmdName (STRING): Name of the command issued, such as "storage shelf firmware update".

fileName (STRING): Name of the file in /etc/shelf_fw that was being downloaded.

module (STRING): Module on which the disk shelf firmware download is occurring.

channelName (STRING): Name of the adapter port or switch port on which the disk shelf firmware

download is occurring.

shelfId (INT): ID of the disk shelf on which the disk shelf firmware download is occurring.

sfu.downloadingctrlerr1xx events

sfu.downloadingCtrllerR1XX

Severity

INFORMATIONAL

Description

This message occurs when a disk shelf firmware download starts on a particular disk shelf.

Corrective Action

(None).

Syslog Message

%s: Downloading %s on ES controller on %s.shelf%d.

Parameters

cmdName (STRING): Name of the command issued, such as "storage shelf firmware update".

fileName (STRING): Name of the file in /etc/shelf_fw that was being downloaded.

channelName (STRING): Name of the adapter port or switch port on which the disk shelf firmware download is occurring.

shelfId (INT): ID of the disk shelf on which the disk shelf firmware download is occurring.

sfu.downloadstarted events

sfu.downloadStarted

Severity

INFORMATIONAL

Description

This message occurs when a disk shelf firmware update starts to download disk shelf firmware.

Corrective Action

(None).

Syslog Message

Update of disk shelf firmware started on %d %s.

Parameters

count (INT): Number of shelves that are starting disk shelf firmware download.

pluralShelf (STRING): Shelf or Shelves.

sfu.downloadsucccess events

sfu.downloadSuccess

Severity

INFORMATIONAL

Description

This message occurs when disk shelf firmware updates successfully.

Corrective Action

(None).

Syslog Message

%s: Firmware file %s downloaded on %s.shelf%d.

Parameters

cmdName (STRING): Name of the command issued, such as "storage shelf firmware update".

fileName (STRING): Name of the file in /etc/shelf_fw that was being downloaded.

channelName (STRING): Name of the adapter port or switch port on which the shelf firmware download occurred.

shelfId (INT): ID of the disk shelf on which the disk shelf firmware download occurred.

sfu.downloadsummary events

sfu.downloadSummary

Severity

INFORMATIONAL

Description

This message occurs when a disk shelf firmware update completes successfully.

Corrective Action

(None).

Syslog Message

Shelf firmware updated on %d %s.

Parameters

shelfCount (INT): Number of shelves that successfully updated.

pluralShelf (STRING): Shelf or Shelves.

sfu.downloadsummaryerrors events

sfu.downloadSummaryErrors

Severity

ERROR

Description

This message occurs when a disk shelf firmware update completes without successfully downloading to all shelves it attempted.

Corrective Action

Issue the (advanced privilege) "storage shelf firmware update" command again.

Syslog Message

Shelf firmware updated on %d %s, failed to update on %d %s.

Parameters

successCount (INT): Number of shelves successfully updated.

pluralShelf (STRING): Shelf or Shelves.

failedCount (INT): Number of shelves that failed to update.

pluralShelfFailed (STRING): Shelf or Shelves.

sfu.fcdownloadfailed events

sfu.FCDownloadFailed

Severity

ERROR

Description

This message occurs when a disk shelf firmware update fails to download shelf firmware to an FC or an ATA shelf successfully.

Corrective Action

Redownload the latest disk shelf firmware from the NetApp Support Site at <http://support.netapp.com/NOW/download/tools/diskshelf/> and attempt to download disk shelf firmware again by using the (advanced privilege) "storage shelf firmware update" command.

Syslog Message

%s: Download failed on %s on ES controller module %s via SES device %s.%d on %s.shelf%d.

Parameters

cmdName (STRING): Name of the command issued, such as "storage shelf firmware update".

fileName (STRING): Name of file in /etc/shelf_fw that was being downloaded.

module (STRING): Module A is the upper module in the enclosure on the back side. Module B is the lower module in the enclosure on the back side.

channelNameSES (STRING): Name of the adapter port or switch port on the SES services device on which the disk shelf firmware download failed.

scsild (INT): SCSI ID of the SES services device used to download disk shelf firmware.

channelNameShelf (STRING): Name of the adapter port or switch port on which the disk shelf firmware download failed.

shelfld (INT): ID of the disk shelf on which the disk shelf firmware download failed.

sfu.firmwaredownrev events

sfu.firmwareDownrev

Severity

ERROR

Description

This message occurs when disk shelf firmware is downrev and therefore cannot be updated automatically. Before updating the disk shelf firmware, always check the NetApp Support Site for the latest disk shelf firmware available: <http://support.netapp.com/NOW/download/tools/diskshelf/>.

Corrective Action

Copy updated disk shelf firmware into the /etc/shelf_fw directory on the storage appliance and then manually issue the (advanced privilege) "storage shelf firmware update" command.

Syslog Message

Disk shelf firmware needs to be updated on %d disk %s.

Parameters

downrevShelves (INT): Number of shelves in the system that are downrev.

pluralShelf (STRING): Shelf or Shelves.

sfu.firmwareDownrev.shelf

Severity

ERROR

Description

This message occurs when the disk shelf is running downrev firmware, and a later version is available in the /etc/shelf_fw directory. The shelf cannot be updated automatically, possibly because automatic shelf firmware update is disabled.

Corrective Action

Use the "options shelf.fw.auto.update" command to check whether automatic shelf firmware update is off. Manually issue the (advanced privilege) "storage shelf firmware update" command if background update is disabled.

Syslog Message

Shelf %s has downrev firmware.

Parameters

ShelfId (STRING): Shelf that is running downrev firmware.

sfu.firmwareuptodate events

sfu.firmwareUpToDate

Severity

INFORMATIONAL

Description

This message occurs when a disk shelf firmware update is requested but all shelves are determined to be updated already to the latest version of firmware available on the system. Before updating the disk shelf firmware, always check the NetApp Support Site for the latest disk shelf firmware available:

<http://support.netapp.com/NOW/download/tools/diskshelf/>.

Corrective Action

(None).

Syslog Message

Firmware is up-to-date on all disk shelves.

Parameters

(None).

sfu.nsmdownloadfailed events

sfu.NSMDownloadFailed

Severity

ERROR

Description

This message occurs when a disk shelf firmware update fails to download disk shelf firmware to a disk shelf successfully.

Corrective Action

Go to the NetApp Support Site at <http://support.netapp.com/NOW/download/tools/diskshelf/> and try downloading the disk shelf firmware again by using the (advanced privilege) "storage shelf firmware update" command.

Syslog Message

%s: Download failed on %s on disk shelf controller module %s on disk shelf %s.%d.

Parameters

cmdName (STRING): Name of the command issued, such as "storage shelf firmware update".

fileName (STRING): Name of the file in /etc/shelf_fw that was being downloaded.

module (STRING): Module on which the disk shelf firmware download failed.

channelNameSES (STRING): Name of the adapter port or switch port on the SCSI enclosure services (SES) device on which the disk shelf firmware download failed.

shelfId (INT): ID of the disk shelf on which the disk shelf firmware download failed.

sfu.partnerinaccessible events

sfu.partnerInaccessible

Severity

ALERT

Description

This message occurs in a high-availability (HA) configuration in which communication between partner nodes cannot be established.

Corrective Action

Verify that the HA interconnect is operational. Retry the (advanced privilege) "storage shelf firmware update" command.

Syslog Message

HA partner is inaccessible. Shelf firmware update canceled.

Parameters

(None).

sfu.partnernotresponding events

sfu.partnerNotResponding

Severity

ALERT

Description

This message occurs when one node in a high-availability (HA) configuration does not respond to firmware download requests from another node, in which case the other node cannot download disk shelf firmware.

Corrective Action

Make certain that the HA interconnect is up and running on both nodes of the HA pair and then attempt to re-download disk shelf firmware, using the (advanced privilege) "storage shelf firmware update" command.

Syslog Message

Partner either responded in the negative, or did not respond in %d seconds. Aborting shelf firmware update.

Parameters

timeout (INT): Number of seconds the timeout is set for.

sfu.partnerrefusedupdate events

sfu.partnerRefusedUpdate

Severity

ALERT

Description

This message occurs in a high-availability (HA) configuration in which one node refuses firmware download requests from its partner node, in which case the partner node cannot download disk shelf firmware.

Corrective Action

Make certain that the HA partners are both running the same version of ONTAP® software and that the HA interconnect is up and running. Attempt the (advanced privilege) "storage shelf firmware update" command again.

Syslog Message

Partner node refused permission to update shelf firmware.

Parameters

(None).

sfu.partnerupdatecomplete events

sfu.partnerUpdateComplete

Severity

INFORMATIONAL

Description

This message occurs in a high-availability (HA) configuration in which an HA partner was downloading disk shelf firmware and the download was completed, at which point this notification is sent and enclosure services are resumed by the partner.

Corrective Action

(None).

Syslog Message

Partner is no longer updating disk shelf firmware. Resuming enclosure services.

Parameters

(None).

sfu.partnerupdatetimeout events

sfu.partnerUpdateTimeout

Severity

INFORMATIONAL

Description

This message occurs in a high-availability (HA) configuration in which an HA partner was downloading disk shelf firmware and the download has timed out. The system resumes enclosure services monitoring.

Corrective Action

Verify that the HA interconnect is operational and then retry the (advanced privilege) "storage shelf firmware update" command.

Syslog Message

Waited %d minutes for partner shelf firmware update. Resuming enclosure services.

Parameters

minutes (INT): Duration of the partner update timeout, in minutes.

sfu.rebootrequest events

sfu.rebootRequest

Severity

INFORMATIONAL

Description

This message occurs when the disk shelf firmware update is complete and the disk shelf will be rebooted to run the new code.

Corrective Action

(None).

Syslog Message

Issuing a request to reboot disk shelf %s.shelf%d module %s.

Parameters

channelName (STRING): Name of the adapter port or switch port of the disk shelf to be rebooted.

shelfId (INT): ID of the disk shelf to be rebooted.

module (STRING): Module to be rebooted.

sfu.rebootrequestfailure events

sfu.rebootRequestFailure

Severity

ERROR

Description

This message occurs when an attempt to issue a reboot request after downloading disk shelf firmware fails, indicating a software error.

Corrective Action

Retry the (advanced privilege) "storage shelf firmware update" command.

Syslog Message

Could not issue the request to reboot disk shelf %s.shelf%d module %s.

Parameters

channelName (STRING): Name of the adapter port or switch port of the disk shelf to be rebooted.

shelfId (INT): ID of the disk shelf to be rebooted.

module (STRING): Module to be rebooted.

sfu.resumediskio events

sfu.resumeDiskIO

Severity

INFORMATIONAL

Description

This message occurs when a disk shelf firmware update is completed and disk I/O is resumed.

Corrective Action

(None).

Syslog Message

Resuming disk I/O after shelf firmware update.

Parameters

(None).

sfu.sasdownloadfailed events

sfu.SASDownloadFailed

Severity

ERROR

Description

This message occurs when a disk shelf firmware update fails to download disk shelf firmware to a disk shelf successfully.

Corrective Action

Go to the NetApp Support Site at <http://support.netapp.com/NOW/download/tools/diskshelf/> and try downloading the disk shelf firmware again by using the (advanced privilege) "storage shelf firmware update" command.

Syslog Message

%s: Download failed on %s on disk shelf controller module %s on disk shelf %s.%d.

Parameters

cmdName (STRING): Name of the command issued, such as "storage shelf firmware update".

fileName (STRING): Name of the file in /etc/shelf_fw that was being downloaded.

module (STRING): Module on which the disk shelf firmware download failed.

channelNameSES (STRING): Name of the adapter port or switch port on the SCSI enclosure services (SES) device on which the disk shelf firmware download failed.

shelfId (INT): ID of the disk shelf on which the disk shelf firmware download failed.

sfu.statuscheckfailure events

sfu.statusCheckFailure

Severity

ERROR

Description

This message occurs when the (advanced privilege) "storage shelf firmware update" command encounters a failure while attempting to read the status of the firmware update in progress.

Corrective Action

Retry the (advanced privilege) "storage shelf firmware update" command.

Syslog Message

%s: failed status check of f/w update on %s.shelf%d [%x] %s, retry_count = %d, %s.

Parameters

cmdName (STRING): Name of the command issued, such as "storage shelf firmware update".

channelName (STRING): Name of the adapter port or switch port on which the disk shelf firmware is to be downloaded.

shelfId (INT): ID of the disk shelf on which the disk shelf firmware is to be downloaded.

outStatusFlags (INTHEX): Output status flags value of the I/O operation (ONTAP® software internal value).

ModuleType (STRING): Module type, such as AT-FCX, AT-FC, ESH, LRC, and so on.

retryCount (INT): Number of times the status read has been retried.

DeviceStatus (STRING): Whether the SES target device status is OK or MISSING.

sfu.suspenddiskio events

sfu.suspendDiskIO

Severity

INFORMATIONAL

Description

This message occurs when a disk shelf firmware update is started and disk I/O is suspended.

Corrective Action

(None).

Syslog Message

Suspending disk I/O to reboot shelf modules for shelf firmware update.

Parameters

(None).

sfu.suspendses events

sfu.suspendSES

Severity

INFORMATIONAL

Description

This message occurs when a disk shelf firmware update is requested in a high-availability (HA) environment. One partner node updates the firmware on the disk shelf module while the HA partner node

temporarily disables enclosure services while the firmware update is in process.

Corrective Action

(None).

Syslog Message

Suspending enclosure services—partner is updating disk shelf firmware.

Parameters

(None).

Copyright information

Copyright © 2025 NetApp, Inc. All Rights Reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system—without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP “AS IS” AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b) (FEB 2014).

Trademark information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.