



nvmem events

ONTAP EMS reference

NetApp
November 20, 2025

Table of Contents

nvmem events	1
nvmem.battery events	1
nvmem.battery.capacity.low	1
nvmem.battery.capacity.low.warn	1
nvmem.battery.capacity.normal	1
nvmem.battery.capLow	2
nvmem.battery.capLowCrit	2
nvmem.battery.capLowWarn	3
nvmem.battery.capNormal	3
nvmem.battery.current.high	3
nvmem.battery.current.high.warn	4
nvmem.battery.current.normal	4
nvmem.battery.currentHigh	4
nvmem.battery.currentHiWarn	5
nvmem.battery.currentLow	5
nvmem.battery.currentLowWarn	6
nvmem.battery.discFET.normal	6
nvmem.battery.discFET.off	6
nvmem.battery.end_of_life.high	7
nvmem.battery.end_of_life.high.warn	7
nvmem.battery.end_of_life.normal	7
nvmem.battery.fccLow	8
nvmem.battery.fccLowCrit	8
nvmem.battery.fccLowWarn	9
nvmem.battery.fccNormal	9
nvmem.battery.FET.normal	9
nvmem.battery.FET.off	10
nvmem.battery.noCharge	10
nvmem.battery.normalCharge	10
nvmem.battery.notPresent	11
nvmem.battery.packInvalid	11
nvmem.battery.packValid	12
nvmem.battery.powerFault	12
nvmem.battery.powerNormal	12
nvmem.battery.sensor.unread	13
nvmem.battery.temp.high	13
nvmem.battery.temp.high.warn	13
nvmem.battery.temp.low	14
nvmem.battery.temp.low.warn	14
nvmem.battery.temp.normal	14
nvmem.battery.tempHigh	15
nvmem.battery.tempLow	15
nvmem.battery.unread	16

nvmem.battery.voltage.high	16
nvmem.battery.voltage.high.warn	16
nvmem.battery.voltage.normal	17
nvmem.battery.voltageHigh	17
nvmem.battery.voltageHiWarn	17
nvmem.battery.voltageLow	18
nvmem.battery.voltageLowWarn	18
nvmem.battery.wrongCharge	19
nvmem.voltage events	19
nvmem.voltage.high	19
nvmem.voltage.high.warn	19
nvmem.voltage.low	20
nvmem.voltage.low.warn	20
nvmem.voltage.normal	20

nvmem events

nvmem.battery events

nvmem.battery.capacity.low

Severity

EMERGENCY

Description

This message occurs when the NVMEM battery lacks the capacity to preserve the NVMEM contents for the required minimum of 72 hours. The system is at the risk of data loss if the power fails. This message repeats every hour while the problem continues and the system shuts down in 24 hours if automatic recharging of the battery does not restore its charge.

Corrective Action

Correct any environmental problems, such as chassis over-temperature. The battery charges automatically. If the capacity is not restored in several hours, replace the battery pack. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery lacks the capacity to preserve the NVMEM contents.

Parameters

(None).

nvmem.battery.capacity.low.warn

Severity

INFORMATIONAL

Description

This message occurs when the NVMEM battery capacity is below normal.

Corrective Action

(None).

Syslog Message

The NVMEM battery capacity is below normal.

Parameters

(None).

nvmem.battery.capacity.normal

Severity

INFORMATIONAL

Description

This message occurs when the NVMEM battery capacity is normal.

Corrective Action

(None).

Syslog Message

The NVMEM battery capacity is normal.

Parameters

(None).

nvmem.battery.capLow**Severity**

ALERT

Description

This message occurs when the NVMEM battery capacity is low. To prevent data loss, the system schedules a clean shutdown if the problem is not corrected.

Corrective Action

Correct any environmental problems, such as chassis overheating. The battery charges automatically. If the capacity is not restored automatically within 30 minutes after the system is powered on, replace the NVMEM battery. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery capacity is low (%s).

Parameters

reading (STRING): Reading that triggered this message.

nvmem.battery.capLowCrit**Severity**

EMERGENCY

Description

This message occurs when the NVMEM battery capacity is critically low. If this issue is not resolved within the specified time, the system shuts down to prevent data loss.

Corrective Action

Correct any environmental problems, such as overheating. The battery charges automatically. If the capacity is not restored automatically within 30 minutes after the system is powered on, replace the NVMEM battery. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery capacity is critically low (%s). To prevent data loss, the system will shut down in %d minutes.

Parameters

reading (STRING): Reading that triggered this message.

num_minutes (INT): Number of minutes until the system shuts down.

nvmem.battery.capLowWarn

Severity

ERROR

Description

This message occurs when the NVMEM battery capacity is below normal.

Corrective Action

Correct any environmental problems, such as overheating. The battery charges automatically. If the capacity is not restored automatically within 30 minutes after the system is powered on, replace the NVMEM battery within three months. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery capacity is below normal (%s).

Parameters

reading (STRING): Reading that triggered this message.

nvmem.battery.capNormal

Severity

NOTICE

Description

This message occurs when the NVMEM battery capacity is normal.

Corrective Action

(None).

Syslog Message

The NVMEM battery capacity is normal.

Parameters

(None).

nvmem.battery.current.high

Severity

EMERGENCY

Description

This message occurs when the NVMEM battery current is excessively high and the system will shut down.

Corrective Action

First, correct any environmental problems, such as chassis over- temperature. If the NVMEM battery current is still too high, replace the battery pack. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery current is excessively high and the system will shut down.

Parameters

(None).

nvmem.battery.current.high.warn**Severity**

INFORMATIONAL

Description

This message occurs when the NVMEM battery current is above normal.

Corrective Action

(None).

Syslog Message

The NVMEM battery current is above normal.

Parameters

(None).

nvmem.battery.current.normal**Severity**

INFORMATIONAL

Description

This message occurs when the NVMEM battery current is normal.

Corrective Action

(None).

Syslog Message

The NVMEM battery current is normal.

Parameters

(None).

nvmem.battery.currentHigh**Severity**

EMERGENCY

Description

This message occurs when the NVMEM battery charging current is critically high. If this issue is not resolved within the specified time, the system shuts down to prevent data loss.

Corrective Action

Replace the NVMEM battery. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery current is critically high (%s). To prevent data loss, the system will shut down in %d minutes.

Parameters

reading (STRING): Reading that triggered this message.

num_minutes (INT): Number of minutes until the system shuts down.

nvmem.battery.currentHiWarn

Severity

ALERT

Description

This message occurs when the NVMEM battery charging current is above normal. If this issue is not resolved within the specified time, the system shuts down to prevent data loss.

Corrective Action

Replace the NVMEM battery. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery current is above normal (%s). To prevent data loss, the system will shut down %s.

Parameters

reading (STRING): Reading that triggered this message.

countdown (STRING): Remaining time before chassis shutdown.

nvmem.battery.currentLow

Severity

EMERGENCY

Description

This message occurs when the NVMEM battery detects a short circuit. If this issue is not resolved within the specified time, the system shuts down to prevent data loss.

Corrective Action

Replace the controller module.

Syslog Message

The NVMEM battery has a short circuit (%s). To prevent data loss, the system will shut down in %d minutes.

Parameters

reading (STRING): Reading that triggered this message.

num_minutes (INT): Number of minutes until the system shuts down.

nvmem.battery.currentLowWarn

Severity

ALERT

Description

This message occurs when the NVMEM battery is discharging when it should not. If this issue is not resolved within the specified time, the system shuts down to prevent data loss.

Corrective Action

Replace the NVMEM battery. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery current is below normal (%s). To prevent data loss, the system will shut down %s.

Parameters

reading (STRING): Reading that triggered this message.

countdown (STRING): Remaining time before chassis shutdown.

nvmem.battery.discFET.normal

Severity

NOTICE

Description

This message occurs when the NVMEM battery discharge field-effect transistor (FET) is on.

Corrective Action

(None).

Syslog Message

The NVMEM battery discharge FET is on.

Parameters

(None).

nvmem.battery.discFET.off

Severity

EMERGENCY

Description

This message occurs when the NVMEM battery discharge field-effect transistor (FET) is off. To prevent data loss, the system shuts down.

Corrective Action

Shut down the system and power-cycle the controller. If the discharge FET remains off, replace the NVMEM battery. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery discharge FET is off. To prevent data loss, the system will shut down in %d minutes.

Parameters

num_minutes (INT): Number of minutes until the system shuts down.

nvmem.battery.end_of_life.high**Severity**

INFORMATIONAL

Description

This message occurs when the NVMEM battery-cycle count indicates that the battery has reached its anticipated life expectancy.

Corrective Action

(None).

Syslog Message

The NVMEM battery has reached its anticipated life expectancy.

Parameters

(None).

nvmem.battery.end_of_life.high.warn**Severity**

INFORMATIONAL

Description

This message occurs when the NVMEM battery-cycle count indicates that the battery is nearing its anticipated life expectancy.

Corrective Action

(None).

Syslog Message

The NVMEM battery is nearing its anticipated life expectancy.

Parameters

(None).

nvmem.battery.end_of_life.normal**Severity**

INFORMATIONAL

Description

This message occurs when the NVMEM battery-cycle count indicates that the battery is well below its anticipated life expectancy.

Corrective Action

(None).

Syslog Message

The NVMEM battery is well below its anticipated life expectancy.

Parameters

(None).

nvmem.battery.fccLow

Severity

ALERT

Description

This message occurs when the NVMEM battery full-charge capacity is low. If this issue is not resolved within the specified time, the system shuts down to prevent data loss.

Corrective Action

Use the "system battery show" SP CLI command to get the battery manufactured date. If the battery is newer than three years old, correct any chronic environmental problems, such as overheating. If the full-charge capacity is still below normal, contact technical support for assistance with replacement of the NVMEM battery. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery full-charge capacity is low (%s). To prevent data loss, the system will shut down %s.

Parameters

reading (STRING): Reading that triggered this message.

countdown (STRING): Remaining time before chassis shutdown.

nvmem.battery.fccLowCrit

Severity

EMERGENCY

Description

This message occurs when the NVMEM battery full-charge capacity is critically low. If this issue is not resolved within the specified time, the system shuts down to prevent data loss.

Corrective Action

Use the "system battery show" SP CLI command to get the battery manufactured date. If the battery is newer than three years old, correct any chronic environmental problems, such as overheating. If the full-charge capacity is still below normal, contact technical support for assistance with replacement of the NVMEM battery. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery full-charge capacity is critically low (%s). To prevent data loss, the system will shut down in %d minutes.

Parameters

reading (STRING): Reading that triggered this message.

num_minutes (INT): Number of minutes until the system shuts down.

nvmem.battery.fccLowWarn

Severity

ALERT

Description

This message occurs when the NVMEM battery full-charge capacity is below normal.

Corrective Action

Use the "system battery show" SP CLI command to get the battery manufactured date. If the battery is newer than three years old, correct any chronic environmental problems, such as overheating. If the full-charge capacity is still below normal, contact technical support for assistance with replacement of the NVMEM battery. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery full-charge capacity is below normal (%s).

Parameters

reading (STRING): Reading that triggered this message.

nvmem.battery.fccNormal

Severity

NOTICE

Description

This message occurs when the NVMEM battery full-charge capacity is normal.

Corrective Action

(None).

Syslog Message

The NVMEM battery full-charge capacity is normal.

Parameters

(None).

nvmem.battery.FET.normal

Severity

NOTICE

Description

This message occurs when the NVMEM battery charge field-effect transistor (FET) is on.

Corrective Action

(None).

Syslog Message

The NVMEM battery charge FET is on.

Parameters

(None).

nvmem.battery.FET.off

Severity

ALERT

Description

This message occurs when the NVMEM battery charge field-effect transistor (FET) is off. If this issue is not resolved within the specified time, the system shuts down to prevent data loss.

Corrective Action

Shut down the system and power-cycle the controller. If the charge FET remains off, replace the NVMEM battery. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery charge FET is off. To prevent data loss, the system will shut down %s.

Parameters

countdown (STRING): Remaining time before chassis shutdown.

nvmem.battery.noCharge

Severity

ALERT

Description

This message occurs when the NVMEM battery requests a charge but does not receive it. If this issue is not resolved within the specified time, the system shuts down to prevent data loss.

Corrective Action

Pull the controller from the slot and ensure that the NVMEM battery connector is seated properly. If the problem occurs again, replace the NVMEM battery. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery is requesting to be charged but the charger is not charging the battery. To prevent data loss, the system will shut down %s.

Parameters

countdown (STRING): Remaining time before chassis shutdown.

nvmem.battery.normalCharge

Severity

NOTICE

Description

This message occurs when the NVMEM battery charging status is normal.

Corrective Action

(None).

Syslog Message

The NVMEM battery charging status is normal.

Parameters

(None).

nvmem.battery.notPresent**Severity**

ALERT

Description

This message occurs when the NVMEM battery is not present. To prevent data loss, the system shuts down.

Corrective Action

While the system is shut down, pull the controller from the slot and ensure that the NVMEM battery is present. If the NVMEM battery is already present, ensure that the connector is seated properly. Push the controller back in and power on the system. If this does not correct the problem, replace the NVMEM battery. If the system still does not detect the battery, replace the controller module.

Syslog Message

The NVMEM battery is not present. To prevent data loss, the system will shut down in %d minutes.

Parameters

num_minutes (INT): Number of minutes until the system shuts down.

nvmem.battery.packInvalid**Severity**

EMERGENCY

Description

This message occurs when an unsupported NVMEM battery pack is installed in the system. To prevent data loss, the system initiates a clean shutdown if the problem is not corrected.

Corrective Action

Shut down the system and replace the NVMEM battery with a correct battery pack.

Syslog Message

The incorrect NVMEM battery is installed. Expected part number is %s. To prevent data loss, the system will shut down in %d minutes.

Parameters

partnum (STRING): Valid battery part number.

num_minutes (INT): Number of minutes until the system shuts down.

nvmem.battery.packValid

Severity

NOTICE

Description

This message occurs when a valid NVMEM battery pack is present and readable.

Corrective Action

(None).

Syslog Message

A valid NVMEM battery pack is present.

Parameters

(None).

nvmem.battery.powerFault

Severity

EMERGENCY

Description

This message occurs when the NVMEM battery is not receiving power. If this issue is not resolved within the specified time, the system shuts down to prevent data loss.

Corrective Action

Pull the controller from the slot and ensure that the NVMEM battery connector is seated properly. Push the controller back in and boot the system. If the NVMEM battery is still not receiving power, replace the NVMEM battery. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery is not receiving power. To prevent data loss, the system will shut down in %d minutes.

Parameters

num_minutes (INT): Number of minutes until the system shuts down.

nvmem.battery.powerNormal

Severity

NOTICE

Description

This message occurs when the NVMEM battery power is normal.

Corrective Action

(None).

Syslog Message

The NVMEM battery power is normal.

Parameters

(None).

nvmem.battery.sensor.unread**Severity**

INFORMATIONAL

Description

This message occurs when the battery state of the battery-backed memory (NVMEM) is unknown. One of the battery sensors is not readable.

Corrective Action

Shut down the system and power-cycle the controller module. If the problem is not corrected, replace the battery. If the sensor is still not readable, replace the controller module.

Syslog Message

The battery state of the battery-backed memory (NVMEM) %s is not readable.

Parameters

sensor_name (STRING): Sensor name.

nvmem.battery.temp.high**Severity**

EMERGENCY

Description

This message occurs when the NVMEM battery is too hot and the system is at a high risk of data loss if power fails. The system will shut down.

Corrective Action

If the system is excessively warm, allow it to cool gradually. If the NVMEM battery temperature reading is still too high, replace the battery pack. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery is too hot and the system is at a high risk of data loss if power fails. The system will shut down to prevent data loss.

Parameters

(None).

nvmem.battery.temp.high.warn**Severity**

INFORMATIONAL

Description

This message occurs when the NVMEM battery temperature high.

Corrective Action

(None).

Syslog Message

The NVMEM battery temperature is high.

Parameters

(None).

nvmem.battery.temp.low**Severity**

ALERT

Description

This message occurs when the NVMEM battery is too cold and the system is at a high risk of data loss if power fails.

Corrective Action

If the system is excessively cold, allow it to warm gradually. If the NVMEM battery temperature reading is still too low, replace the battery pack. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery is too cold and the system is at a high risk of data loss if power fails.

Parameters

(None).

nvmem.battery.temp.low.warn**Severity**

INFORMATIONAL

Description

This message occurs when the NVMEM battery temperature is low.

Corrective Action

(None).

Syslog Message

The NVMEM battery temperature is low.

Parameters

(None).

nvmem.battery.temp.normal**Severity**

INFORMATIONAL

Description

This message occurs when the NVMEM battery temperature is normal.

Corrective Action

(None).

Syslog Message

The NVMEM battery temperature is normal.

Parameters

(None).

nvmem.battery.tempHigh**Severity**

EMERGENCY

Description

This message occurs when the NVMEM battery temperature is critically high. If this issue is not resolved within the specified time, the system shuts down to prevent data loss.

Corrective Action

Correct any environmental problems, such as a overheating. If the NVMEM battery temperature is still above normal, replace the NVMEM battery. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery temperature is critically high (%s). To prevent data loss, the system will shut down in %d minutes.

Parameters

reading (STRING): Reading that triggered this message.

num_minutes (INT): Number of minutes until the system shuts down.

nvmem.battery.tempLow**Severity**

ALERT

Description

This message occurs when the NVMEM battery is too cold. If this issue is not resolved within the specified time, the system shuts down to prevent data loss.

Corrective Action

If the system is excessively cold, allow it to warm gradually. If the NVMEM battery temperature is still too low, replace the NVMEM battery. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery is too cold (%s). To prevent data loss, the system will shut down %s.

Parameters

reading (STRING): Reading that triggered this message.

countdown (STRING): Remaining time before chassis shutdown.

nvmem.battery.unread

Severity

EMERGENCY

Description

This message occurs when the NVMEM battery state cannot be determined because the sensor is unreadable. If this issue is not resolved within the specified time, the system shuts down to prevent data loss.

Corrective Action

Pull the controller from the slot and ensure that the NVMEM battery connector is seated properly. If the problem is not corrected, replace the NVMEM battery. If the sensor is still not readable, replace the controller module.

Syslog Message

The NVMEM battery state cannot be determined because the '%s' sensor is unreadable. To prevent data loss, the system will shut down in %d minutes.

Parameters

sensor_name (STRING): Sensor name.

num_minutes (INT): Number of minutes until the system shuts down.

nvmem.battery.voltage.high

Severity

EMERGENCY

Description

This message occurs when the NVMEM battery voltage is excessively high and the system will shut down.

Corrective Action

First, correct any environmental problems, such as chassis over-temperature. If the NVMEM battery voltage is still too high, replace the battery pack. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery voltage is excessively high and the system will shut down.

Parameters

(None).

nvmem.battery.voltage.high.warn

Severity

INFORMATIONAL

Description

This message occurs when the NVMEM battery voltage is above normal.

Corrective Action

(None).

Syslog Message

The NVMEM battery voltage is above normal.

Parameters

(None).

nvmem.battery.voltage.normal**Severity**

INFORMATIONAL

Description

This message occurs when the NVMEM battery voltage is normal.

Corrective Action

(None).

Syslog Message

The NVMEM battery voltage is normal.

Parameters

(None).

nvmem.battery.voltageHigh**Severity**

EMERGENCY

Description

This message occurs when the NVMEM battery voltage is critically high. If this issue is not resolved within the specified time, the system shuts down to prevent data loss.

Corrective Action

Replace the NVMEM battery. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery voltage is critically high (%s). To prevent data loss, the system will shut down in %d minutes.

Parameters

reading (STRING): Reading that triggered this message.

num_minutes (INT): Number of minutes until the system shuts down.

nvmem.battery.voltageHiWarn**Severity**

ALERT

Description

This message occurs when the NVMEM battery voltage is above normal. If this issue is not resolved within the specified time, the system shuts down to prevent data loss.

Corrective Action

Correct any environmental problems, such as overheating. If the NVMEM battery voltage is still above normal, replace the NVMEM battery. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery voltage is above normal (%s). To prevent data loss, the system will shut down %s.

Parameters

reading (STRING): Reading that triggered this message.

countdown (STRING): Remaining time before chassis shutdown.

nvmem.battery.voltageLow

Severity

EMERGENCY

Description

This message occurs when the NVMEM battery voltage is critically low. If this issue is not resolved within the specified time, the system shuts down to prevent data loss.

Corrective Action

Correct any environmental problems, such as overheating. If the NVMEM battery voltage is still critically low, replace the NVMEM battery. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery voltage is critically low (%s). To prevent data loss, the system will shut down in %d minutes.

Parameters

reading (STRING): Reading that triggered this message.

num_minutes (INT): Number of minutes until the system shuts down.

nvmem.battery.voltageLowWarn

Severity

ALERT

Description

This message occurs when the NVMEM battery voltage is below normal. To prevent data loss, the system schedules a clean shutdown if the problem is not corrected.

Corrective Action

Correct any environmental problems, such as overheating. If the NVMEM battery voltage is still below normal 30 minutes after environmental problems have been corrected, replace the NVMEM battery. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery voltage is below normal (%s).

Parameters

reading (STRING): Reading that triggered this message.

nvmem.battery.wrongCharge

Severity

ALERT

Description

This message occurs when the NVMEM battery charger charges the battery without a request to do so. If this issue is not resolved within the specified time, the system shuts down to prevent data loss.

Corrective Action

Replace the NVMEM battery. If the problem persists, replace the controller module.

Syslog Message

The NVMEM battery charger is charging the battery even though the battery is not requesting to be charged. To prevent data loss, the system will shut down %s.

Parameters

countdown (STRING): Remaining time before chassis shutdown.

nvmem.voltage events

nvmem.voltage.high

Severity

EMERGENCY

Description

This message occurs when the NVMEM supply voltage is high and the system is at a high risk of data loss if power fails. The system will shut down.

Corrective Action

Correct any environmental or battery problems. If the problem persists, replace the controller module.

Syslog Message

The NVMEM supply voltage is high and the system is at a high risk of data loss if power fails. The system will shut down to prevent data loss.

Parameters

(None).

nvmem.voltage.high.warn

Severity

INFORMATIONAL

Description

This message occurs when the NVMEM supply voltage is above normal.

Corrective Action

(None).

Syslog Message

The NVMEM supply voltage is above normal.

Parameters

(None).

nvmem.voltage.low**Severity**

ALERT

Description

This message occurs when the NVMEM supply voltage is low and the system is at a high risk of data loss if power fails.

Corrective Action

First, correct any environmental or battery problems. If the problem continues, replace the controller module.

Syslog Message

The NVMEM supply voltage is low and the system is at a high risk of data loss if power fails.

Parameters

(None).

nvmem.voltage.low.warn**Severity**

INFORMATIONAL

Description

This message occurs when the NVMEM supply voltage is below normal.

Corrective Action

(None).

Syslog Message

The NVMEM supply voltage is below normal.

Parameters

(None).

nvmem.voltage.normal

Severity

INFORMATIONAL

Description

This message occurs when the NVMEM supply voltage is normal.

Corrective Action

(None).

Syslog Message

The NVMEM supply voltage is normal.

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.