



system health commands

ONTAP 9.15.1 commands

NetApp
December 18, 2024

Table of Contents

- system health commands 1
 - system health alert delete 1
 - system health alert modify 1
 - system health alert show 2
 - system health alert definition show 6
 - system health autosupport trigger history show 9
 - system health config show 11
 - system health policy definition modify 13
 - system health policy definition show 14
 - system health status show 16
 - system health subsystem show 16

system health commands

system health alert delete

Delete system health alert

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The `system health alert delete` command deletes all the alerts on the cluster with the specified input parameters.

Parameters

-node {<nodename>|local} - Node

Use this parameter to delete alerts generated on a cluster only on the node you specify.

-monitor <hm_type> - Monitor

Use this parameter to delete alerts generated on a cluster only on the monitor you specify.

-alert-id <text> - Alert ID

Use this parameter to delete alerts generated on a cluster only on the alert ID you specify.

-alerting-resource <text> - Alerting Resource

Use this parameter to delete alerts generated on a cluster on the alerting resource you specify.

Examples

This example shows how to delete an alert with the specified alert-id:

```
cluster1::> system health alert delete -alert-id DualPathToDiskShelf_Alert
-alerting-resource *
```

system health alert modify

Modify system health alert

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The `system health alert modify` command suppresses alerts generated on the cluster and sets the acknowledgement state for an alert.

Parameters

-node {<nodename>|local} - Node

Use this parameter to specify the node on which you want to change the state.

-monitor <hm_type> - Monitor

Use this parameter to specify the monitor name on which you want to change the state.

-alert-id <text> - Alert ID

Use this parameter to specify the alert ID on which you want to change the state.

-alerting-resource <text> - Alerting Resource

Use this parameter to specify the alerting resource name on which you want to change the state.

[-acknowledge {true|false}] - Acknowledge

Use this parameter to set the acknowledgement state to true or false.

[-suppress {true|false}] - Suppress

Use this parameter to set the suppress state to true or false.

[-acknowledger <text>] - Acknowledger

Use this parameter to set the acknowledger as the filter for setting state.

[-suppressor <text>] - Suppressor

Use this parameter to set the suppressor as the filter for setting state.

Examples

This example modifies the alert field states on the cluster:

```
cluster1::> system health alert modify -node * -alert-id  
DualPathToDiskShelf_Alert -suppress true
```

system health alert show

View system health alerts

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The `system health alert show` command displays information about all the alerts generated on the system. Using `-instance` will add detailed information.

Parameters

{ [-fields <fieldname>,...]

Selects the fields that you specify.

| [-instance] }

Displays the following additional information about each alert:

- Node name
- Resource name
- Severity of the alert
- Time of alert generation
- Suppress state of the alert
- Acknowledge state of the alert
- Probable cause for the alert
- Possible effect due to the alert
- Recommended corrective actions to follow

[-node {<nodename>|local}] - Node

Selects the alerts generated for the specified node.

[-monitor <hm_type>] - Monitor

Selects the alerts with the specified monitor name.

[-alert-id <text>] - Alert ID

Selects the alerts with the specified alert ID.

[-alerting-resource <text>] - Alerting Resource

Selects the alerts with the specified alerting resource name.

[-subsystem <hm_subsystem>] - Subsystem

Selects the alerts generated on the monitoring subsystem.

[-indication-time <Date>] - Indication Time

Selects the alerts with the specified indicated time.

[-perceived-severity <hm_perceived_sev>] - Perceived Severity

Selects the alerts with the perceived severity level.

[-probable-cause <hm_probable_cause>] - Probable Cause

Selects the alerts that contain the specified probable cause.

[-probable-cause-description <text>] - Description

Selects the alerts containing the specified probable cause description.

[-corrective-actions <text>] - Corrective Actions

Selects the alerts with the specified recommended corrective action.

[-possible-effect <text>] - Possible Effect

Selects the alerts with the specified possible effect.

[-acknowledge {true|false}] - Acknowledge

Selects the alerts with the specified acknowledgement status.

[-suppress {true|false}] - Suppress

Selects the alerts with the specified suppressor field status of true or false.

[-policy <text>] - Policy

Selects the alerts with the specified policy name.

[-acknowledger <text>] - Acknowledger

Selects the alerts with the specified acknowledger field.

[-suppressor <text>] - Suppressor

Selects the alerts with the specified suppressor field.

[-additional-info <text>,...] - Additional Information

Selects the alerts with the specified additional information.

[-alerting-resource-name <text>] - Alerting Resource Name

Selects the alerts with the specified alerting resource name.

[-tags <hm_alert_type>,...] - Additional Alert Tags

Selects the alerts with the specified keywords.

Examples

The example below displays information about all the alerts generated in the cluster:

```
cluster1::> system health alert show
Node: node1
    Alert ID: DualPathToDiskShelf_Alert
    Resource: Shelf ID 2
    Severity: Major
    Suppress: false
    Acknowledge: false
    Tags: quality-of-service, nondisruptive-upgrade
    Probable Cause: Disk shelf 2 does not have two paths to controller
                    node1.
    Possible Effect: Access to disk shelf 2 via controller node1 will be
                    lost with a single hardware component failure (e.g.
                    cable, HBA, or IOM failure).
    Corrective Actions: 1. Halt controller node1 and all controllers attached
                        to disk shelf 2.
                        2. Connect disk shelf 2 to controller node1 via two
                        paths following the rules in the Universal SAS and ACP Cabling Guide.
                        3. Reboot the halted controllers.
                        4. Contact support personnel if the alert persists.
```

The example below displays additional information about a specific alert generated in the cluster:

```

cluster1::> system health alert show -monitor node-connect -alert-id
DualPathToDiskShelf_Alert -instance
Node: node1
    Monitor: node-connect
    Alert ID: DualPathToDiskShelf_Alert
Alerting Resource: 50:05:0c:c1:02:00:0f:02
    Subsystem: SAS-connect
    Indication Time: Mon Mar 21 10:26:38 2011
Perceived Severity: Major
    Probable Cause: Connection_establishment_error
    Description: Disk shelf 2 does not have two paths to controller
node1.
    Corrective Actions: 1. Halt controller node1 and all controllers
attached to disk shelf 2.
                        2. Connect disk shelf 2 to controller node1 via
two paths following the rules in the Universal SAS and ACP Cabling Guide.
                        3. Reboot the halted controllers.
                        4. Contact support personnel if the alert
persists.
    Possible Effect: Access to disk shelf 2 via controller node1 will
be lost with a single hardware component failure (e.g. cable, HBA, or IOM
failure).
    Acknowledge: false
    Suppress: false
    Policy: DualPathToDiskShelf_Policy
Acknowledger: -
Suppressor: -
Additional Information: Shelf uuid: 50:05:0c:c1:02:00:0f:02
                        Shelf id: 2
                        Shelf Name: 4d.shelf2
                        Number of Paths: 1
                        Number of Disks: 6
                        Adapter connected to IOMA:
                        Adapter connected to IOMB: 4d
Alerting Resource Name: Shelf ID 2
Additional Alert Tags: quality-of-service, nondisruptive-upgrade

```

system health alert definition show

Display system health alert definition

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The `system health alert definition show` command displays information about the various alerts defined in the system health monitor policy file. Using `-instance` will display additional details.

Parameters

{ [-fields <fieldname>,...]

Selects the fields that you specify.

| [-instance] }

Use this parameter to display additional information on each alert definition.

- Node name
- Monitor name
- Subsystem identifier
- Alert ID
- Severity of the alert
- Probable cause
- Probable cause description
- Possible effect due the error state
- Recommended corrective actions to be followed
- Any additional information
- Additional alert tags

[-node {<nodename>|local}] - Node

Selects the alert definitions for the specified node.

[-monitor <hm_type>] - Monitor

Selects the alert definitions with the specified monitor name.

[-alert-id <text>] - Class of Alert

Selects the alert definitions with the specified alert identifier.

[-perceived-severity <hm_perceived_sev>] - Severity of Alert

Selects the alert definitions with the specified perceived severity.

[-probable-cause <hm_probable_cause>] - Probable Cause

Selects the alert definitions with the specified probable cause of the alert.

[-probable-cause-description <text>] - Probable Cause Description

Selects the alert definitions with the specified probable cause description.

[-possible-effect <text>] - Possible Effect

Selects the alert definitions with the specified possible effect.

[-corrective-actions <text>] - Corrective Actions

Selects the alert definitions with the specified corrective action.

[-subsystem <hm_subsystem>] - Subsystem Name

Selects the alert definitions with the specified subsystem.

[-additional-information <text>] - Additional Relevant Data

Selects the alert definitions with the specified additional information.

[-tags <hm_alert_type>,...] - Additional Alert Tags

Selects the alert definitions with the specified keywords.

Examples

The example below displays information about all the definitions in the alert definition file:

```

cluster1::> system health alert definition show
Node           Monitor           Subsystem           Alert ID
-----
node-01        system-connect     SAS-connect
DualControllerNonHa_

Alert
Severity: Major
Probable Cause: Configuration_error
Probable Cause Description: Disk shelf $(sschm_shelf_info.id) is connected
to
two controllers
$(sschm_shelf_info.connected-nodes)) that are
not an HA pair.
Possible Effect: Access to disk shelf $(sschm_shelf_info.id)
may
be lost with a single controller failure.
Corrective Actions: 1. Halt all controllers that are connected to
disk shelf $(sschm_shelf_info.id).
2. Connect disk shelf $(sschm_shelf_info.id)
to both HA controllers following the rules in the Universal SAS and ACP
Cabling Guide.
3. Reboot the halted controllers.
4. Contact support personnel if the alert
persists.
Additional Info: -
Tags: quality_of_service, nondisruptive-upgrade

```

The example below displays detailed information about the definitions in the alert definition file:

```
cluster1::> system health alert definition show -instance
Node: krivC-01
        Monitor: system-connect
        Class of Alert: DualControllerNonHa_Alert
        Severity of Alert: Major
        Probable Cause: Configuration_error
Probable Cause Description: Disk shelf $(sschm_shelf_info.id) is connected
to two controllers ($(sschm_shelf_info.connected-nodes)) that are not an
HA pair.
        Possible Effect: Access to disk shelf $(sschm_shelf_info.id)
may be lost with a single controller failure.
        Corrective Actions: 1. Halt all controllers that are connected to
disk shelf $(sschm_shelf_info.id).
        2. Connect disk shelf $(sschm_shelf_info.id) to both HA
controllers following the rules in the Universal SAS and ACP Cabling
Guide.
        3. Reboot the halted controllers.
        4. Contact support personnel if the alert persists.
        Subsystem Name: SAS-connect
Additional Relevant Data: -
        Additional Alert Tags: quality_of_service, nondisruptive-upgrade
```

system health autosupport trigger history show

View system health alert history

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The `system health autosupport trigger history show` command displays all the alert triggers in the cluster that generated the AutoSupport messages. The following fields are displayed in the output:

- Node name
- Monitor name
- Subsystem
- Alert identifier
- Alerting resource
- Severity
- If an AutoSupport has been sent due to this alert

Parameters

{ [-fields <fieldname>,...]

Use this parameter to display only the fields you specify.

| [-instance] }

Use this parameter to display additional information about all of the alerts that were generated.

[-node {<nodename>|local}] - Node

Use this parameter to display AutoSupport trigger history on the specified node.

[-monitor <hm_type>] - Monitor

Use this parameter to display AutoSupport trigger history with the specified monitor name.

[-alert-id <text>] - Alert ID

Use this parameter to display the AutoSupport message that was triggered by the specified alert ID.

[-alerting-resource <text>] - Alerting Resource

Use this parameter to display the AutoSupport message that was triggered by the specified alerting resource.

[-subsystem <hm_subsystem>] - Subsystem

Use this parameter to display the AutoSupport message that was triggered by the specified subsystem.

[-indication-time <Date>] - Indication Time

Use this parameter to display the AutoSupport message that was triggered at the indicated time.

[-perceived-severity <hm_perceived_sev>] - Perceived Severity

Use this parameter to display the AutoSupport message that was triggered by alerts with the specified perceived severity.

[-autosupport-triggered {true|false}] - AutoSupport Triggered

Use this parameter to display the alerts that generated AutoSupport messages.

[-probable-cause <hm_probable_cause>] - Probable Cause

Use this parameter to display the alerts that were generated with the specified probable cause.

[-corrective-actions <text>] - Corrective Actions

Use this parameter to display the AutoSupport alerts with the specified corrective actions.

[-asup-enable {true|false}] - Enable Asup for This Alert

Use this parameter to enable or disable an AutoSupport message for this alert.

[-alert-clear-time <Date>] - Alert Clear Time

Use this parameter to display the alerts that were cleared at a given time.

Examples

This example displays information about the AutoSupport trigger history

```

cluster1::> system health autosupport trigger history show
Node           Monitor           Subsystem           Alert ID
-----
-----
node1          node-connect      SAS-connect
DualPathToDiskShelf_
Alert
Resource: 50:05:0c:c1:02:00:0f:02
Severity: Major
AutoSupport sent: true

```

This example displays info about the autosupport trigger history in detail

```

cluster1::> system health autosupport trigger history show -instance
Node: node1
Monitor: node-connect
Alert ID: DualPathToDiskShelf_Alert
Alerting Resource: 50:05:0c:c1:02:00:0f:02
Subsystem: SAS-connect
Indication Time: Thu Mar 17 11:59:09 2011
Perceived Severity: Major
AutoSupport Triggered: true
Probable Cause: Connection_establishment_error
Corrective Actions: 1. Halt controller node1 and all controllers
attached to disk shelf 2.
2. Connect disk shelf 2 to controller node1 via two paths following the
rules in the Universal SAS and ACP Cabling Guide.
3. Reboot the halted controllers.
4. Contact support personnel if the alert persists.
Enable asup for this alert: true
Alert Clear Time: Wed May 29 16:10:13 2013

```

system health config show

Display system health configuration

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The `system health config show` command displays the configuration and status of each health monitor in the cluster. The command shows a health status for each health monitor. The health status is an aggregation of the subsystem health for each subsystem that the health monitor monitors. For example, if a health monitor monitors two subsystems and the health status of one subsystem is "ok" and the other is "degraded", the health status for the health monitor is "degraded".

Parameters

{ [-fields <fieldname>,...]

If you specify the `-fields <fieldname>`, ... parameter, the command output also includes the specified field or fields. You can use `'-fields ?'` to display the fields to specify.

| [-instance] }

If you specify the `-instance` parameter, the command displays detailed information about all fields.

[-node {<nodename>|local}] - Node

Use this parameter to list the health monitors present on the specified node.

[-monitor <hm_type>] - Monitor

Use this parameter to display the health monitors with the specified monitor name.

[-subsystem <hm_subsystem>,...] - Subsystem

Selects the health monitors with the specified subsystems.

[-health {ok|ok-with-suppressed|degraded|unreachable|unknown}] - Health

Selects the health monitors with the specified health status.

[-mon-version <text>] - Monitor Version

Selects the health monitors with the specified monitor version.

[-pol-version <text>] - Policy File Version

Selects the health monitors with the specified health monitor policy version.

[-context {Node |Cluster}] - Context

Selects the health monitors with the specified running context.

[-aggregator <hm_type>] - Aggregator

Selects the health monitors with the specified aggregator.

[-resources <text>,...] - Resource

Selects the health monitors with the specified resource name.

[-init-state {Invalid|Initailizing|Initialized|Starting_Discovery|Starting_Re-Discovery|Discovery_Done_Partially|Discovery_Done}] - Subsystem Initialization Status

Selects the health monitors with the specified subsystem initialization state.

[-sub-pol-versions <text>] - Subordinate Policy Versions

Selects the health monitors with the specified subordinate policy version.

Examples

The example below displays information about health monitor configuration:

```
cluster1::> system health config show
Node           Monitor           Subsystem          Health
-----
node1          node-connect      SAS-connect        degraded
node1          system-connect    SAS-connect        degraded
node1          system            SAS-connect        degraded
```

The example below displays detailed information about health monitor configuration:

```
cluster1::> system health config show -instance
Node: node1
           Monitor: node-connect
           Subsystem: SAS-connect
           Health: degraded
           Monitor Version: 1.0
           Policy File Version: 1.0
           Context: node_context
           Aggregator: system-connect
           Resource: SasAdapter, SasDisk, SasShelf
Subsystem Initialization Status: initialized
Subordinate Policy Versions: 1.0 SAS, 1.0 SAS multiple adapters
```

system health policy definition modify

Modify system health policy definition

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The `system health policy definition modify` enables or disables health monitoring policies based on input parameters the user provides.

Parameters

-node {<nodename>|local} - Node

Use this parameter to specify the node on which you want to enable or disable the policy.

-monitor <hm_type> - Monitor

Use this parameter to specify the monitor name for which you want to be enable or disable the policy.

-policy-id <text> - Policy

Use this parameter to specify the policy identifier that you want to enable or disable.

[`-enable {true|false}`] - Policy Status

Use this parameter with the value "true" to enable the policy. Set the value to "false" to disable the policy.

[`-asup-enable {true|false}`] - Enable AutoSupport for This Alert

Use this parameter to enable or disable an AutoSupport message for this alert.

Examples

This example modifies policy state on the cluster:

```
cluster1::> system health policy definition modify -node node1
           -policy-id ControllerToShelfIomA_Policy -enable false -monitor *
```

system health policy definition show

Display system health policy definitions

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The `system health policy definition show` command lists the health monitor policy definitions as described by the health monitor policy file. The command displays the following fields:

- Node name
- Monitor name
- Policy name
- Policy rule expression
- Expression for joining two tables
- Policy status
- Alert identifier
- Responsible resource name

Parameters

{ [`-fields <fieldname>,...`] }

If you specify the `-fields <fieldname>, ...` parameter, the command output also includes the specified field or fields. You can use `-fields ?` to display the fields to specify.

| [`-instance]` }

If you specify the `-instance` parameter, the command displays detailed information about all fields.

[`-node {<nodename>|local}`] - Node

Selects policy definitions for the specified node.

[-monitor <hm_type>] - Monitor

Selects policy definitions with the specified monitor name.

[-policy-id <text>] - Policy

Selects policy definitions with the specified policy identifier.

[-rule-expression <ArithExpr>] - Rule Expression

Selects policy definitions with the specified rule of expression.

[-where <ArithExpr>] - Variable Equivalence

Selects rules that match the provided expression. This expression is part of the alert definition. It is shown for reference only and cannot be changed.

[-enable {true|false}] - Policy Status

Use this parameter with the value set to "true" to select policy definitions that are enabled. Set the value to "false" to select policy definitions that are disabled.

[-alert-id <text>] - Alert ID

Selects all policy definitions of the specified alert identifier.

[-responsible-resource-info <text>] - Table and ID of Resource at Fault

Selects all policy definitions with the specified responsible resource.

[-asup-enable {true|false}] - Enable AutoSupport for This Alert

Selects policy definitions for which AutoSupport messages are either enabled or disabled.

Examples

The example below displays information about all the policy definitions present in the cluster:

```

cluster1::> system health policy definition show
Node          Monitor          Policy
-----
node1         node-connect     ControllerToShelfIomA_Policy
Policy Rule Expression: nschm_shelf_info.num-paths == 2
                        nschm_shelf_info.iomb-adapter == NULL
                Where: -
                Enable: true
                Alert ID: ControllerToShelfIomA_Alert
                Number of Alerts: -
                Responsible Resource: nschm_shelf_info.name

```

The example below displays detailed information about all the policy definitions present in the cluster:

```
cluster1::> system health policy definition show -instance
Node: node1
          Monitor: node-connect
          Policy: ControllerToShelfIomA_Policy
          Rule Expression: nschm_shelf_info.num-paths == 2
          nschm_shelf_info.iomb-adapter == NULL
          Variable Equivalence: -
          Policy Status: true
          Alert ID: ControllerToShelfIomA_Alert
          Table and ID of Resource at Fault: nschm_shelf_info.name
```

system health status show

Display system health monitoring status

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The `system health status show` command displays the health monitor status. The possible states are:

- ok
- ok-with-suppressed
- degraded
- unreachable

Examples

This example displays information about health monitoring status:

```
cluster1::> system health status show
Status
-----
degraded
```

system health subsystem show

Display the health of subsystems

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The `system health subsystem show` command displays the health status of each subsystem for which health monitoring is available. This command aggregates subsystem health status from each node in the

cluster. A subsystem's health status changes to "degraded" when a health monitor raises an alert. You can use the [system health alert show](#) command to display information about generated alerts.

Parameters

{ [-fields <fieldname>,...]

If you specify the `-fields <fieldname>`, ... parameter, the command output also includes the specified field or fields. You can use `'-fields ?'` to display the fields to specify.

| [-instance] }

If you specify the `-instance` parameter, the command displays detailed information about all fields.

[-subsystem <hm_subsystem>] - Subsystem

Selects the specified subsystem.

[-health {ok|ok-with-suppressed|degraded|unreachable|unknown}] - Health

Selects subsystems that have the specified health status.

[-init-state {Invalid|Initailizing|Initialized|Starting_Discovery|Starting_Re-Discovery|Discovery_Done_Partially|Discovery_Done}] - Initialization State

Selects subsystems that have the specified initialization state.

[-outstanding-alert-count <integer>] - Number of Outstanding Alerts

Selects subsystems that have the specified number of outstanding alerts.

[-suppressed-alert-count <integer>] - Number of Suppressed Alerts

Selects subsystems that have the specified number of suppressed alerts.

[-node {<nodename>|local}] - Node

Selects subsystems for the specified node.

[-refresh-interval <[<integer>d] [<integer>h] [<integer>m] [<integer>s]>,...] - Subsystem Refresh Interval

The refresh interval is in minutes. A value of zero disables the sub-system refresh until a reboot or restart of the subsystem process.

Examples

The example below displays the health status of each subsystem:

```
cluster1::> system health subsystem show
Subsystem          Health
-----
SAS-connect        degraded
Switch-Health      OK
CIFSS-NDO           OK
```

The example below displays detailed information about the health status of each subsystem:

```
cluster1::> system health subsystem show -instance

                Subsystem: SAS-connect
                Health: degraded
                Initialization State: initialized
Number of Outstanding Alerts: 0
Number of Suppressed Alerts: 0
                Node: node1,node2
                Subsystem Refresh Interval: 30m, 30m
Subsystem: Switch-Health
                Health: ok
                Initialization State: initialized
Number of Outstanding Alerts: 0
Number of Suppressed Alerts: 0
                Node: node1
                Subsystem Refresh Interval: 5m
Subsystem: CIFS-NDO
                Health: OK
                Initialization State: initialized
Number of Outstanding Alerts: 0
Number of Suppressed Alerts: 0
                Node: node1
                Subsystem Refresh Interval: 5m
```

Related Links

- [system health alert show](#)

Copyright information

Copyright © 2024 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.