



TR-4765: Monitor StorageGRID

StorageGRID solutions and resources

NetApp
November 21, 2025

Table of Contents

TR-4765: Monitor StorageGRID	1
Introduction to StorageGRID monitoring	1
Data sources	1
Where to find additional information	1
Use the GMI dashboard to monitor StorageGRID	2
Information that you should monitor regularly	2
Monitor storage	2
Use alerts to monitor StorageGRID	3
Advanced monitoring in StorageGRID	3
View metrics API through a Prometheus query	3
Export metrics through the API	5
Access metrics using cURL in StorageGRID	6
View metrics using the Grafana dashboard in StorageGRID	8
Use traffic classification policies in StorageGRID	9
Use audit logs to monitor StorageGRID	12
Use the StorageGRID app for Splunk	12

TR-4765: Monitor StorageGRID

Introduction to StorageGRID monitoring

Learn how to monitor your StorageGRID system by using external applications, such as Splunk.

Effective monitoring of NetApp StorageGRID object-based storage enables administrators to quickly respond to urgent issues and to proactively add resources to handle growing workloads. This report provides general guidance about how to monitor key metrics and how to leverage external monitoring applications. It is meant to supplement the existing Monitoring and Troubleshooting guide.

A NetApp StorageGRID deployment typically consists of multiple sites and many nodes that operate to create a distributed and fault-tolerant object storage system. In a distributed and resilient storage system such as StorageGRID, it is normal for error conditions to exist while the grid continues to operate normally. The challenge for you as an administrator is to understand the threshold at which error conditions (such as nodes down) present a problem that should be immediately addressed versus information that should be analyzed. By analyzing the data that StorageGRID presents, you can understand your workload and make informed decisions, such as when to add more resources.

StorageGRID provides excellent documentation that dives deep into the subject of monitoring. This report assumes that you are familiar with StorageGRID and that you have reviewed the documentation about it. Rather than repeating that information, we refer to the product documentation throughout this guide. StorageGRID product documentation is available online and in PDF format.

The goal of this document is to complement the product documentation and discuss how to monitor your StorageGRID system by using external applications, such as Splunk.

Data sources

To successfully monitor NetApp StorageGRID, it is important to know where to gather data about the health and operations of your StorageGRID system.

- **Web UI and Dashboard.** The StorageGRID Grid Manager presents a top-level view of the information that you as an administrator need to see in a logical presentation. As an administrator, you can also dig deeper into service-level information for troubleshooting and log collections.
- **Audit Logs.** StorageGRID keeps granular audit logs of tenant actions such as PUT, GET, and DELETE. You can also trace the lifecycle of an object from ingest to the application of data management rules.
- **Metrics API.** Underlying the StorageGRID GMI are open APIs, as the UI is API-driven. This approach enables you to extract data by using external monitoring and analysis tools.

Where to find additional information

To learn more about the information that is described in this document, review the following documents and/or websites:

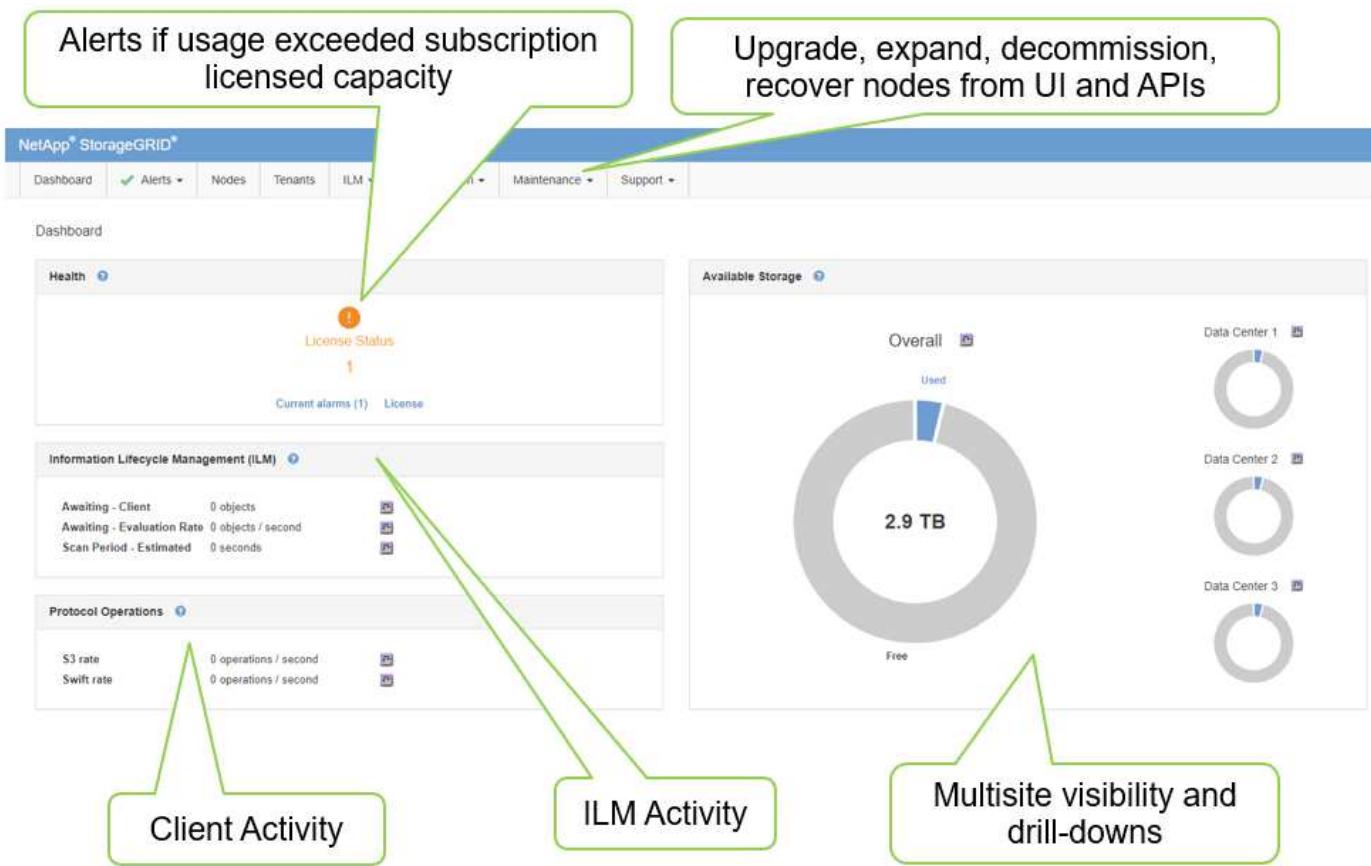
- NetApp StorageGRID Documentation Center
<https://docs.netapp.com/us-en/storagegrid-118/>
- NetApp StorageGRID Enablement
<https://docs.netapp.com/us-en/storagegrid-enable/>

- NetApp Product Documentation
<https://www.netapp.com/support-and-training/documentation/>
- NetApp StorageGRID App for Splunk
<https://splunkbase.splunk.com/app/3898/#/details>

Use the GMI dashboard to monitor StorageGRID

The StorageGrid Grid Management Interface (GMI) dashboard provides a centralized view of the StorageGRID infrastructure, allowing you to oversee the health, performance, and capacity of the entire grid.

Use the GMI dashboard to examine each core component of the grid.



Information that you should monitor regularly

A previous version of this technical report listed the metrics to check periodically versus trends. That information is now included in the [Monitoring and Troubleshooting guide](#).

Monitor storage

A previous version of this technical report listed where to monitor important metrics, such as Object Storage Space, Metadata Space, Network Resources and so on. That information is now included in the [Monitoring and Troubleshooting guide](#).

Use alerts to monitor StorageGRID

Learn how to use the alerts system in StorageGRID to monitor issues, manage custom alerts, and extend alert notifications using SNMP or email.

Alerts provide critical information that allow you to monitor the various events and conditions within your StorageGRID system.

The alerts system is designed to be the primary tool for monitoring any issues that might occur in your StorageGRID system. The alerts system focuses on actionable problems in the system and provides an easy-to-use interface.

We provide a variety of default alerting rules that aim to help monitor and troubleshoot your system. You can further manage alerts by creating custom alerts, editing or disabling default alerts, and silencing alert notifications.

Alerts are also extensible through SNMP or email notification.

For more information on alerts, see the [product documentation](#) available online and in PDF format.

Advanced monitoring in StorageGRID

Learn how to access and export metrics to help troubleshoot issues.

View metrics API through a Prometheus query

Prometheus is an open-source software for collecting metrics. To access StorageGRID's embedded Prometheus through the GMI, go to [Support > Metrics](#).

Metrics

Access charts and metrics to help troubleshoot issues.

ⓘ The tools available on this page are intended for use by technical support. Some features and menu items within these tools are intentionally non-functional.

Prometheus

Prometheus is an open-source toolkit for collecting metrics. The Prometheus interface allows you to query the current values of metrics and to view charts of the values over time.

Access the Prometheus UI using the link below. You must be signed in to the Grid Manager.

- <https://webscalegmi.netapp.com/metrics/graph>

Grafana

Grafana is open-source software for metrics visualization. The Grafana interface provides pre-constructed dashboards that contain graphs of important metric values over time.

Access the Grafana dashboards using the links below. You must be signed in to the Grid Manager.

ADE	Grid	Replicated Read Path Overview
Account Service Overview	ILM	S3 - Node
Alertmanager	Identity Service Overview	S3 Overview
Audit Overview	Ingests	Site
Cassandra Cluster Overview	Node	Streaming EC - ADE
Cassandra Network Overview	Node (Internal Use)	Streaming EC - Chunk Service
Cassandra Node Overview	Platform Services Commits	Support
Cloud Storage Pool Overview	Platform Services Overview	Traces
EC Read (11.3) - Node	Platform Services Processing	Traffic Classification Policy
EC Read (11.3) - Overview	Renamed Metrics	Virtual Memory (vmstat)

Alternatively, you can navigate to the link directly.

The screenshot shows the Prometheus interface with the following elements:

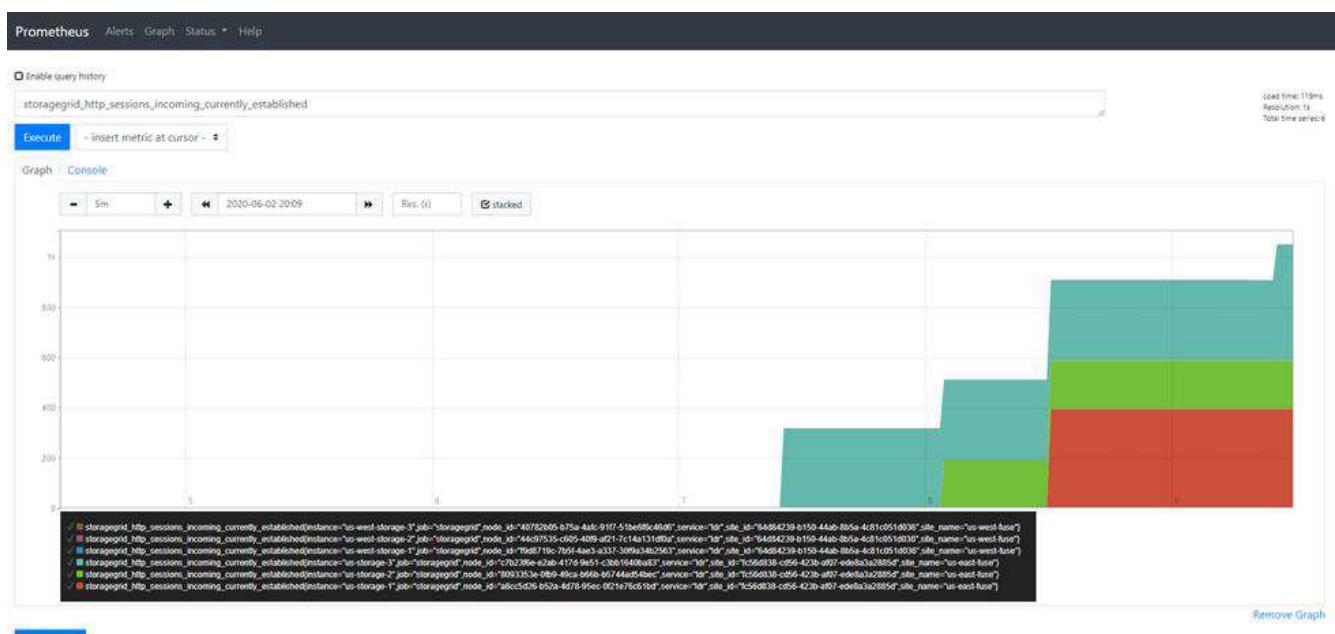
- Header:** Prometheus, Alerts, Graph, Status, Help.
- Query History:** A text input field with placeholder "Expression (press Shift+Enter for newlines)" and a "Execute" button.
- Graph/Console:** A tab selection between Graph and Console. The Graph tab is selected, showing a time range from "Moment" to "Now".
- Data Table:** A table with columns "Element" and "Value". It shows a single row with "no data".
- Buttons:** "Add Graph" and "Remove Graph".

With this view, you can access the Prometheus interface. From there, you can search through available metrics and even experiment with queries.

To make a Prometheus URL query, follow these steps:

Steps

1. Start typing in the query text box. As you type, metrics are listed. For our purposes, only metrics that start with StorageGRID and Node are important.
2. To see the number of HTTP sessions for each node, type `storagegrid_http` and select `storagegrid_http_sessions_incoming_currently_established`. Click Execute and display the information in a graph or console format.



Queries and charts that you build through this URL do not persist. Complex queries consume resources on the admin node. NetApp recommends that you use this view to explore available metrics.



It is not recommended to directly interface to our Prometheus instance because this requires opening additional ports. Accessing metrics through our API is the recommended and secure method.

Export metrics through the API

You can also access the same data through the StorageGRID management API.

To export metrics through the API, follow these steps:

1. From the GMI, select **Help > API Documentation**.
2. Scroll down to Metrics and select **GET /grid/metric-query**.

The screenshot shows the GMI API Documentation interface. The 'Metrics' section is selected, displaying three available endpoints:

- GET /grid/metric-labels/{label}/values** Lists the values for a metric label
- GET /grid/metric-names** Lists all available metric names
- GET /grid/metric-query** Performs an instant metric query at a single point in time

Below the endpoints, a note states: "The format of metric queries is controlled by Prometheus. See <https://prometheus.io/docs/querying/basics>".

The 'Parameters' section shows the configuration for the selected endpoint:

Name	Description
query <small>* required</small>	Prometheus query string
string	
(query)	storagegrid_http_sessions_incoming_current
time	query start, default current time (date-time)
string(\$date-time)	
(query)	time - query start, default current time (date-time)
timeout	timeout (duration)
string	
(query)	120s

At the bottom of the parameters section are 'Execute' and 'Clear' buttons.

The response includes the same information that you can obtain through a Prometheus URL query. You can again see the number of HTTP sessions that are currently established on each storage node. You can also download the response in JSON format for readability. The following figure shows sample Prometheus query responses.

Responses Response content type ▾

Curl

```
curl -X GET "https://10.193.92.230/api/v3/grid/metric-query?query=storagegrid_http_sessions_incoming_currently_established&timeout=120s" -H "accept: application/json" -H "X-Csrftoken: 0b94910621b19c120b4488d2e537e374"
```

Request URL

```
https://10.193.92.230/api/v3/grid/metric-query?query=storagegrid_http_sessions_incoming_currently_established&timeout=120s
```

Server response

Code	Details
200	Response body

```
{ "responseTime": "2020-06-02T21:26:36.008Z", "status": "success", "apiVersion": "3.2", "data": { "resultType": "vector", "result": [ { "metric": { "name": "storagegrid_http_sessions_incoming_currently_established", "instance": "us-storage-1", "job": "storagegrid", "node_id": "adcc5d26-b52a-4d78-95ec-0f21e76c61bd", "service": "l3r", "site_id": "fc56d838-c056-423b-af07-e8a3a2885d", "site_name": "us-east-fuse" }, "value": [ 1591133196.007, "0" ] }, { "metric": { "name": "storagegrid_http_sessions_incoming_currently_established", "instance": "us-storage-2", "job": "storagegrid", "node_id": "8093353e-0fb9-49ca-b660-b5744ad54bec", "service": "l3r", "site_id": "fc56d838-c056-423b-af07-e8a3a2885d", "site_name": "us-east-fuse" }, "value": [ 1591133196.007, "0" ] } ] }
```

Download



The advantage of using the API is that it enables you to perform authenticated queries

Access metrics using cURL in StorageGRID

Learn how to access metrics through the CLI using cURL.

To perform this operation, you must first obtain an authorization token. To request a token, follow these steps:

Steps

1. From the GMI, select **Help > API Documentation**.
2. Scroll down to Auth to find operations on authorization. The following screenshot shows the parameters for the POST method.

POST /authorize Get authorization token

Parameters

Name Description

body * required

object
(body)

```
{
  "username": "MyUserName",
  "password": "MyPassword",
  "cookie": true,
  "csrfToken": false
}
```

Parameter content type

application/json

Responses

Response content type application/json

3. Click Try It Out and edit the body with your GMI username and password.
4. Click Execute.
5. Copy the cURL command that is provided in the cURL section and paste it in a terminal window. The command looks like the following:

```
curl -X POST "https://<Primary_Admin_IP>/api/v3/authorize" -H "accept: application/json" -H "Content-Type: application/json" -H "X-Csrf-Token: dc30b080e1ca9bc05ddb81104381d8c8" -d "{ \"username\": \"MyUsername\", \"password\": \"MyPassword\", \"cookie\": true, \"csrfToken\": false}" -k
```



If your GMI password contains special characters, remember to use \ to escape special characters. For example, replace ! with \!

6. After you run the preceding cURL command, the output gives you an authorization token like the following example:

```
{"responseTime": "2020-06-03T00:12:17.031Z", "status": "success", "apiVersion": "3.2", "data": "8a1e528d-18a7-4283-9a5e-b2e6d731e0b2"}
```

Now you can use the authorization token string to access metrics through cURL. The process to access metrics is similar to the steps in section [Advanced monitoring in StorageGRID](#). However, for demonstration purposes, we show an example with GET /grid/metric-labels/{label}/values selected in the Metrics category.

7. As an example, the following cURL command with the preceding authorization token will list the site names in StorageGRID.

```
curl -X GET "https://10.193.92.230/api/v3/grid/metric-labels/site_name/values" -H "accept: application/json" -H "Authorization: Bearer 8a1e528d-18a7-4283-9a5e-b2e6d731e0b2"
```

The cURL command will generate the following output:

```
{"responseTime": "2020-06-03T00:17:00.844Z", "status": "success", "apiVersion": "3.2", "data": ["us-east-fuse", "us-west-fuse"]}
```

View metrics using the Grafana dashboard in StorageGRID

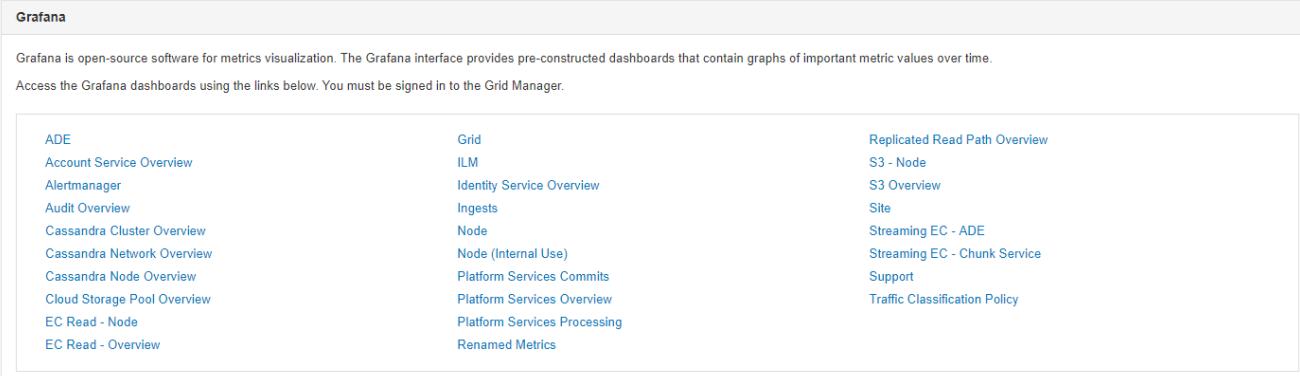
Learn how to use the Grafana interface to visualize and monitor your StorageGRID data.

Grafana is an open-source software for metric visualization. By default, we have preconstructed dashboards that provide useful and powerful information regarding your StorageGRID system.

These preconstructed dashboards are not only useful for monitoring but also for troubleshooting an issue. Some are intended for use by technical support. For example, to view the metrics of a storage node, follow these steps.

Steps

1. From the GMI, **Support > Metrics**.
2. Under the Grafana section, select the Node dashboard.



The screenshot shows the Grafana interface with a sidebar on the left. The sidebar has a heading 'Grafana' and a sub-section 'Grafana is open-source software for metrics visualization. The Grafana interface provides pre-constructed dashboards that contain graphs of important metric values over time. Access the Grafana dashboards using the links below. You must be signed in to the Grid Manager.' Below this, there are three columns of links:

ADE	Grid	Replicated Read Path Overview
Account Service Overview	ILM	S3 - Node
Alertmanager	Identity Service Overview	S3 Overview
Audit Overview	Ingests	Site
Cassandra Cluster Overview	Node	Streaming EC - ADE
Cassandra Network Overview	Node (Internal Use)	Streaming EC - Chunk Service
Cassandra Node Overview	Platform Services Commits	Support
Cloud Storage Pool Overview	Platform Services Overview	Traffic Classification Policy
EC Read - Node	Platform Services Processing	
EC Read - Overview	Renamed Metrics	

3. In Grafana, set the hosts to whichever node you want to view metrics on. In this case, a storage node is selected. More information is provided than the following screenshot captures.



Use traffic classification policies in StorageGRID

Learn how to set up and configure traffic classification policies to manage and optimize network traffic in StorageGRID.

Traffic Classification Policies provide a method to monitor and/or limit traffic based on a specific tenant, buckets, IP subnets, or load balancer endpoints. Network connectivity and bandwidth are especially important metrics for StorageGRID.

To configure a Traffic Classification Policy, follow these steps:

Steps

1. On the GMI, navigate to **Configuration > System Settings > Traffic Classification**.
2. Click **Create +**
3. Enter a name and description for your policy.
4. Create a matching rule.

Create Matching Rule

Matching Rules

Type [?](#) Tenant

Tenant Jonathan.Wong (22497137670163214190)

Inverse Match [?](#)

5. Set a limit (optional).

Create Limit

Limits (Optional)

Type [?](#)

Value [?](#)

Traffic that matches any rule

6. Save your policy

Create Traffic Classification Policy

Policy

Name ? Match a Tenant

Description (optional)

Matching Rules

Traffic that matches any rule is included in the policy.

+ Create Edit Remove			
Type	Inverse Match	Match Value	
<input checked="" type="radio"/> Tenant		Jonathan.Wong (22497137670163214190)	
Displaying 1 matching rule.			

Limits (Optional)

+ Create Edit Remove			
Type	Value	Units	
		No limits found.	

Cancel

Save

To view the metrics associated to your Traffic Classification Policy, select your policy and click Metrics. A Grafana dashboard is generated displaying information such as Load Balancer Request Traffic and Average Request Duration.



Use audit logs to monitor StorageGRID

Learn how to use the StorageGRID audit log for detailed insights into tenant and grid activity, and how to leverage tools like Splunk for log analysis.

The StorageGRID audit log enables you to collect detailed information about tenant and grid activity. The audit log can be exposed for analytics through NFS. For detailed instructions on how to export the audit log, see the Administrator's Guide.

After the audit has been exported, you can use log analysis tools such as Splunk or Logstash + Elasticsearch to understand tenant activity or to create detailed billing and chargeback reports.

Details about audit messages are included in StorageGRID documentation. See [Audit messages](#).

Use the StorageGRID app for Splunk

Learn about the NetApp StorageGRID app for Splunk that allows you to monitor and analyze your StorageGRID environment within the Splunk platform.

Splunk is a software platform that imports and indexes machine data to provide powerful search and analysis features. The NetApp StorageGRID app is an add-on for Splunk that imports and enriches data leveraged from StorageGRID.

Instructions on how to install, upgrade and configure the StorageGRID add-on can be found here:
<https://splunkbase.splunk.com/app/3895/#/details>

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.