



# **Upgrade SANtricity OS on storage controller**

StorageGRID

NetApp  
March 18, 2022

This PDF was generated from <https://docs.netapp.com/us-en/storagegrid-116/sg5700/upgrading-santricity-os-on-storage-controllers-using-grid-manager-sg5700.html> on March 18, 2022. Always check docs.netapp.com for the latest.

# Table of Contents

- Upgrade SANtricity OS on storage controller ..... 1
  - Upgrade SANtricity OS on storage controllers using Grid Manager ..... 1
  - Upgrade SANtricity OS on E2800 controller using maintenance mode ..... 7

# Upgrade SANtricity OS on storage controller

To ensure optimal functioning of the storage controller, you must upgrade to the latest maintenance release of the SANtricity OS that is qualified for your StorageGRID appliance. Consult the NetApp Interoperability Matrix Tool (IMT) to determine which version you should be using. If you need assistance, contact technical support.

- If the storage controller is using SANtricity OS 08.42.20.00 (11.42) or newer, use the Grid Manager to perform the upgrade.

[Upgrade SANtricity OS on storage controllers using Grid Manager](#)

- If the storage controller is using a SANtricity OS version older than 08.42.20.00 (11.42), use maintenance mode to perform the upgrade.

[Upgrade SANtricity OS on E2800 controller using maintenance mode](#)

## Related information

[NetApp Interoperability Matrix Tool](#)

[NetApp Downloads: SANtricity OS](#)

[Monitor and troubleshoot](#)

## Upgrade SANtricity OS on storage controllers using Grid Manager

For storage controllers currently using SANtricity OS 08.42.20.00 (11.42) or newer, you must use the Grid Manager to apply an upgrade.

### What you'll need

- You have consulted the NetApp Interoperability Matrix Tool (IMT) to confirm that the SANtricity OS version you are using for the upgrade is compatible with your appliance.
- You have the Maintenance or Root access permission.
- You are signed in to the Grid Manager using a [supported web browser](#).
- You have the provisioning passphrase.
- You have access to the NetApp downloads page for SANtricity OS.

### About this task

You cannot perform other software updates (StorageGRID software upgrade or a hotfix) until you have completed the SANtricity OS upgrade process. If you attempt to start a hotfix or a StorageGRID software upgrade before the SANtricity OS upgrade process has finished, you are redirected to the SANtricity OS upgrade page.

The procedure will not be complete until the SANtricity OS upgrade has been successfully applied to all applicable nodes that have been selected for the upgrade. It might take more than 30 minutes to load the SANtricity OS on each node (sequentially) and up to 90 minutes to reboot each StorageGRID storage appliance.



The following steps are only applicable when you are using the Grid Manager to perform the upgrade. The storage controllers in the appliance cannot be upgraded using the Grid Manager when the controllers are using SANtricity OS older than 08.42.20.00 (11.42).



This procedure will automatically upgrade the NVSRAM to the most recent version associated with the SANtricity OS upgrade. You do not need to apply a separate NVSRAM upgrade file.

## Steps

1. Download the new SANtricity OS Software file from the NetApp support site.

Be sure to choose the SANtricity OS version for your storage controllers.

[NetApp Downloads: SANtricity OS](#)

2. Select **MAINTENANCE** > **System** > **Software update**.

**Software update**

You can upgrade StorageGRID software, apply a hotfix, or upgrade the SANtricity OS software on StorageGRID storage appliances.

StorageGRID upgrade	StorageGRID hotfix	SANtricity OS update
Upgrade to the next StorageGRID version and apply the latest hotfix for that version.	Apply a hotfix to your current StorageGRID software version.	Update the SANtricity OS software on your StorageGRID storage appliances.
<a href="#">Upgrade →</a>	<a href="#">Apply hotfix →</a>	<a href="#">Update →</a>

3. In the SANtricity OS update section, select **Update**.

The SANtricity OS upgrade page appears.

# SANtricity OS

Use this procedure to upgrade the SANtricity OS software (controller firmware) on the storage controllers in your storage appliances.

1. Download the SANtricity OS version that is compatible with the storage controllers. If you use different appliance models, repeat these steps for each model.
2. Confirm the storage controllers are Nominal (**NODES > appliance node > Hardware**) and ready to upgrade.
3. Start the upgrade and approve the nodes you want to upgrade. Nodes are upgraded one at a time.  
During the upgrade, a health check is performed and valid NVSRAM is installed. When the upgrade is complete, the appliance is rebooted. The upgrade can take up to 30 minutes for each appliance.
4. Select **Skip Nodes and Finish** if you only want to apply this upgrade to some nodes or if you want to upgrade some nodes later.

**SANtricity OS Upgrade File**

SANtricity OS Upgrade File ⓘ

**Passphrase**

Provisioning Passphrase ⓘ

4. Select the SANtricity OS upgrade file you downloaded from the NetApp support site.
  - a. Select **Browse**.
  - b. Locate and select the file.
  - c. Select **Open**.

The file is uploaded and validated. When the validation process is done, the file name is shown next to the **Browse** button.



Do not change the file name since it is part of the verification process.

5. Enter the provisioning passphrase.

The **Start** button is enabled.

# SANtricity OS

Use this procedure to upgrade the SANtricity OS software (controller firmware) on the storage controllers in your storage appliances.

1. Download the SANtricity OS version that is compatible with the storage controllers. If you use different appliance models, repeat these steps for each model.
2. Confirm the storage controllers are Nominal (**NODES > appliance node > Hardware**) and ready to upgrade.
3. Start the upgrade and approve the nodes you want to upgrade. Nodes are upgraded one at a time.  
During the upgrade, a health check is performed and valid NVSRAM is installed. When the upgrade is complete, the appliance is rebooted. The upgrade can take up to 30 minutes for each appliance.
4. Select **Skip Nodes and Finish** if you only want to apply this upgrade to some nodes or if you want to upgrade some nodes later.

**SANtricity OS Upgrade File**

SANtricity OS Upgrade File ⓘ

✓ RCB\_00-73-00-00-0000\_0000.dlp

Details ⓘ RCB\_00-73-00-00-0000\_0000.dlp

**Passphrase**

Provisioning Passphrase ⓘ

6. Select **Start**.

A warning box appears stating that your browser's connection might be lost temporarily as services on nodes that are upgraded are restarted.



7. Select **OK** to stage the SANtricity OS upgrade file to the primary Admin Node.

When the SANtricity OS upgrade starts:

- a. The health check is run. This process checks that no nodes have the status of Needs Attention.



If any errors are reported, resolve them and select **Start** again.

- b. The SANtricity OS Upgrade Progress table appears. This table shows all Storage Nodes in your grid and the current stage of the upgrade for each node.



The table shows all appliance Storage Nodes. Software-based Storage Nodes are not displayed. Select **Approve** for all nodes that require the upgrade.

# SANtricity OS

Use this procedure to upgrade the SANtricity OS software (controller firmware) on the storage controllers in your storage appliances.

1. Download the SANtricity OS version that is compatible with the storage controllers. If you use different appliance models, repeat these steps for each model.
2. Confirm the storage controllers are Nominal (**NODES > appliance node > Hardware**) and ready to upgrade.
3. Start the upgrade and approve the nodes you want to upgrade. Nodes are upgraded one at a time.  
During the upgrade, a health check is performed and valid NVSRAM is installed. When the upgrade is complete, the appliance is rebooted. The upgrade can take up to 30 minutes for each appliance.
4. Select **Skip Nodes and Finish** if you only want to apply this upgrade to some nodes or if you want to upgrade some nodes later.

## SANtricity OS Upgrade Progress

▲ Storage Nodes - 0 out of 4 completed

Search Q

Site	Name	Progress	Stage	Details	Current Controller Firmware Version	Action
DC1-SGAs	SG6060	<div style="width: 0%; height: 10px; background-color: #ccc;"></div>	Waiting for you to approve		98.72.02.00	<input type="button" value="Approve"/>
DC1-SGAs	SG6060	<div style="width: 0%; height: 10px; background-color: #ccc;"></div>	Waiting for you to approve		98.72.02.00	<input type="button" value="Approve"/>
DC1-SGAs	SG5712	<div style="width: 0%; height: 10px; background-color: #ccc;"></div>	Waiting for you to approve		98.72.02.00	<input type="button" value="Approve"/>
DC1-SGAs	SG5660	<div style="width: 0%; height: 10px; background-color: #ccc;"></div>	Waiting for you to approve		08.40.50.00	<input type="button" value="Approve"/>

8. Optionally, sort the list of nodes in ascending or descending order by **Site**, **Name**, **Progress**, **Stage**, **Details**, or **Current Controller Firmware Version**. Or, enter a term in the **Search** box to search for specific nodes.

You can scroll through the list of nodes by using the left and right arrows at the bottom right corner of the section.

9. Approve the grid nodes you are ready to add to the upgrade queue. Approved nodes of the same type are upgraded one at a time.



Do not approve the SANtricity OS upgrade for an appliance storage node unless you are sure the node is ready to be stopped and rebooted. When the SANtricity OS upgrade is approved on a node, the services on that node are stopped and the upgrade process begins. Later, when the node is finished upgrading, the appliance node is rebooted. These operations might cause service interruptions for clients that are communicating with the node.

- Select either of the **Approve All** buttons to add all Storage Nodes to the SANtricity OS upgrade queue.



If the order in which nodes are upgraded is important, approve nodes or groups of nodes one at a time and wait until the upgrade is complete on each node before approving the next node(s).

- Select one or more **Approve** buttons to add one or more nodes to the SANtricity OS upgrade queue.

After you select **Approve**, the upgrade process determines if the node can be upgraded. If a node can be upgraded, it is added to the upgrade queue.

For some nodes, the selected upgrade file is intentionally not applied and you can complete the upgrade process without upgrading these specific nodes. Nodes intentionally not upgraded show a stage of Complete (upgrade attempted) and list the reason the node was not upgraded in the Details column.

10. If you need to remove a node or all nodes from the SANtricity OS upgrade queue, select **Remove** or **Remove All**.

When the stage progresses beyond Queued, the **Remove** button is hidden and you can no longer remove the node from the SANtricity OS upgrade process.

11. Wait while the SANtricity OS upgrade is applied to each approved grid node.

- If any node shows a stage of Error while the SANtricity OS upgrade is being applied, the upgrade has failed for the node. With the assistance of technical support, you might need to place the appliance in maintenance mode to recover it.
- If the firmware on the node is too old to be upgraded with the Grid Manager, the node shows a stage of Error with the details: "You must use maintenance mode to upgrade SANtricity OS on this node. See the installation and maintenance instructions for your appliance. After the upgrade, you can use this utility for future upgrades." To resolve the error, do the following:
  - a. Use maintenance mode to upgrade SANtricity OS on the node that shows a stage of Error.
  - b. Use the Grid Manager to restart and complete the SANtricity OS upgrade.

When the SANtricity OS upgrade is complete on all approved nodes, the SANtricity OS Upgrade Progress table closes and a green banner shows the date and time the SANtricity OS upgrade was completed.

SANtricity OS upgrade completed on 2 nodes at 2021-10-04 15:43:23 EDT.

---

**SANtricity OS Upgrade File**

SANtricity OS Upgrade File

Browse

---

**Passphrase**

Provisioning Passphrase

Start



12. If a node cannot be upgraded, note the reason shown in the Details column and take the appropriate action:
- “Storage Node was already upgraded.” No further action required.
  - “SANtricity OS upgrade is not applicable to this node.” The node does not have a storage controller that can be managed by the StorageGRID system. Complete the upgrade process without upgrading the node displaying this message.
  - “SANtricity OS file is not compatible with this node.” The node requires a SANtricity OS file different than the one you selected. After completing the current upgrade, download the correct SANtricity OS file for the node and repeat the upgrade process.



The SANtricity OS upgrade process will not be complete until you approve the SANtricity OS upgrade on all the listed Storage Nodes.

13. If you want to end approving nodes and return to the SANtricity OS page to allow for an upload of a new SANtricity OS file, do the following:

- a. Select **Skip Nodes and Finish**.

A warning appears asking if you are sure you want to finish the upgrade process without upgrading all nodes.

- b. Select **OK** to return to the **SANtricity OS** page.

- c. When you are ready to continue approving nodes, go to [Download the SANtricity OS](#) to restart the upgrade process.



Nodes already approved and upgraded without errors remain upgraded.

14. Repeat this upgrade procedure for any nodes with a stage of Complete that require a different SANtricity OS upgrade file.



For any nodes with a status of Needs Attention, use maintenance mode to perform the upgrade.



When you repeat the upgrade procedure, you have to approve previously upgraded nodes.

#### Related information

[NetApp Interoperability Matrix Tool](#)

[Upgrade SANtricity OS on E2800 controller using maintenance mode](#)

## Upgrade SANtricity OS on E2800 controller using maintenance mode

For storage controllers currently using SANtricity OS older than 08.42.20.00 (11.42), you must use the maintenance mode procedure to apply an upgrade.

#### What you'll need

- You have consulted the NetApp Interoperability Matrix Tool (IMT) to confirm that the SANtricity OS version

you are using for the upgrade is compatible with your appliance.

- You must place the E5700SG controller into maintenance mode, which interrupts the connection to the E2800 controller.

#### Place appliance into maintenance mode



In rare instances, placing a StorageGRID appliance into maintenance mode might make the appliance unavailable for remote access.

#### About this task

Do not upgrade the SANtricity OS or NVSRAM in the E-Series controller on more than one StorageGRID appliance at a time.



Upgrading more than one StorageGRID appliance at a time might cause data unavailability, depending on your deployment model and ILM policies.

#### Steps

1. From a service laptop, access SANtricity System Manager and sign in.
2. Download the new SANtricity OS Software file and NVSRAM file to the management client.



The NVSRAM is specific to the StorageGRID appliance. Do not use the standard NVSRAM download.

3. Follow the instructions in the *E2800 and E5700 SANtricity Software and Firmware Upgrade Guide* or the SANtricity System Manager online help to upgrade the E2800 controller's firmware and NVSRAM.



Activate the upgrade files immediately. Do not defer activation.

4. If this procedure completed successfully and you have additional procedures to perform while the node is in maintenance mode, perform them now. When you are done, or if you experienced any failures and want to start over, select **Advanced > Reboot Controller**, and then select one of these options:
  - Select **Reboot into StorageGRID**
  - Select **Reboot into Maintenance Mode** to reboot the controller with the node remaining in maintenance mode. Select this option if you experienced any failures during the procedure and want to start over. After the node finishes rebooting into maintenance mode, restart from the appropriate step in the procedure that failed.

NetApp® StorageGRID® Appliance Installer

Home
Configure Networking ▾
Configure Hardware ▾
Monitor Installation
Advanced ▾

Reboot Controller  
Request a controller reboot.

RAID Mode  
Upgrade Firmware  
Reboot Controller

Reboot into StorageGRID
Reboot into Maintenance Mode

It can take up to 20 minutes for the appliance to reboot and rejoin the grid. To confirm that the reboot is complete and that the node has rejoined the grid, go back to the Grid Manager. The Nodes page should display a normal status (no icons to the left of the node name) for the appliance node, indicating that no alerts are active and the node is connected to the grid.

Nodes

View the list and status of sites and grid nodes.

Search...

Total node count: 14

Name	Type	Object data used	Object metadata used	CPU usage
StorageGRID Deployment	Grid	0%	0%	—
▲ Data Center 1	Site	0%	0%	—
DC1-ADM1	Primary Admin Node	—	—	5%
DC1-ARC1	Archive Node	—	—	2%
DC1-G1	Gateway Node	—	—	2%
DC1-S1	Storage Node	0%	0%	12%
DC1-S2	Storage Node	0%	0%	11%
DC1-S3	Storage Node	0%	0%	11%

Related information

[Upgrade SANtricity OS on storage controllers using Grid Manager](#)

## Copyright Information

Copyright © 2022 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.

RESTRICTED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.277-7103 (October 1988) and FAR 52-227-19 (June 1987).

## 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.