



Upgrading SANtricity OS on the storage controllers

StorageGRID 11.5

NetApp
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Upgrading SANtricity OS on the storage controllers

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.

Use one of the following procedures based on the version of SANtricity OS currently installed:

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

[Upgrading SANtricity OS on the storage controllers using the 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.

[Upgrading SANtricity OS on the storage controllers using maintenance mode](#)



When upgrading the SANtricity OS for your storage appliance, you must follow the instructions in the StorageGRID documentation. If you use any other instructions, your appliance could become inoperable.

Related information

[NetApp Interoperability Matrix Tool](#)

[NetApp Downloads: SANtricity OS](#)

[Monitor & troubleshoot](#)

Upgrading SANtricity OS on the storage controllers using the 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 must have the Maintenance permission.
- You must be signed in to the Grid Manager using a supported browser.
- You must have the provisioning passphrase.
- You must 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. It might take more than 30 minutes to load the SANtricity OS on each node and up to 90 minutes to reboot each StorageGRID storage appliance.

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The following steps are only applicable when you are using the Grid Manager to perform the upgrade. The storage controllers in the SG6000 series appliances cannot be upgraded using the Grid Manager when the controllers are using SANtricity OS older than 08.42.20.00 (11.42).
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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. From a service laptop, download the new SANtricity OS Software file from the NetApp support site.

Be sure to choose the correct SANtricity OS version for the storage controllers in your appliance. The SG6060 uses the E2800 controller, and the SGF6024 uses the EF570 controller.

[NetApp Downloads: SANtricity OS](#)

2. Sign in to the Grid Manager using a supported browser.
3. Select **Maintenance**. Then, in the System section of the menu, select **Software Update**.

The Software Update page appears.

Software Update

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

- To perform a major version upgrade of StorageGRID, see the [instructions for upgrading StorageGRID](#), and then select **StorageGRID Upgrade**.
- To apply a hotfix to all nodes in your system, see "Hotfix procedure" in the [recovery and maintenance instructions](#), and then select **StorageGRID Hotfix**.
- To upgrade SANtricity OS software on a storage controller, see "Upgrading SANtricity OS Software on the storage controllers" in the installation and maintenance instructions for your storage appliance, and then select **SANtricity OS**:

[SG6000 appliance installation and maintenance](#)
[SG5700 appliance installation and maintenance](#)
[SG5600 appliance installation and maintenance](#)



4. Click **SANtricity OS**.

The SANtricity OS page appears.

SANtricity OS

You can use this page to upgrade the SANtricity OS software on storage controllers in a storage appliance. Before installing the new software, confirm the storage controllers are Nominal (**Nodes > appliance node > Hardware**) and ready for an upgrade. A health check is automatically performed as part of the upgrade process and valid NVSRAM is automatically installed based on the appliance type and new software version. The software upgrade can take up to 30 minutes per appliance. When the upgrade is complete, the node will be automatically rebooted to activate the SANtricity OS on the storage controllers. If you have multiple types of appliances, repeat this procedure to install the appropriate OS software for each type.

SANtricity OS Upgrade File

SANtricity OS Upgrade File



Browse

Passphrase

Provisioning Passphrase



Start

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

The file is uploaded and validated. When the validation process is done, the file name is shown in the Details field.



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

SANtricity OS

You can use this page to upgrade the SANtricity OS software on storage controllers in a storage appliance. Before installing the new software, confirm the storage controllers are Nominal (**Nodes > appliance node > Hardware**) and ready for an upgrade. A health check is automatically performed as part of the upgrade process and valid NVSRAM is automatically installed based on the appliance type and new software version. The software upgrade can take up to 30 minutes per appliance. When the upgrade is complete, the node will be automatically rebooted to activate the SANtricity OS on the storage controllers. If you have multiple types of appliances, repeat this procedure to install the appropriate OS software for each type.

SANtricity OS Upgrade File

SANtricity OS Upgrade File



Browse



RC_20180501_10.2_10.2_10.2.dlp

Details



RC_20180501_10.2_10.2_10.2.dlp

Passphrase

Provisioning Passphrase



Start

6. Enter the provisioning passphrase.

The **Start** button is enabled.

SANtricity OS

You can use this page to upgrade the SANtricity OS software on storage controllers in a storage appliance. Before installing the new software, confirm the storage controllers are Nominal (**Nodes > appliance node > Hardware**) and ready for an upgrade. A health check is automatically performed as part of the upgrade process and valid NVSRAM is automatically installed based on the appliance type and new software version. The software upgrade can take up to 30 minutes per appliance. When the upgrade is complete, the node will be automatically rebooted to activate the SANtricity OS on the storage controllers. If you have multiple types of appliances, repeat this procedure to install the appropriate OS software for each type.

SANtricity OS Upgrade File

SANtricity OS Upgrade File



Browse



RC_20180501_10.2_10.2_10.2.dlp

Details



RC_20180501_10.2_10.2_10.2.dlp

Passphrase


Provisioning Passphrase



Start

7. Click **Start**.

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

 **Warning**

Nodes can disconnect and services might be affected

The node will be automatically rebooted at the end of upgrade and services will be affected. Are you sure you want to start the SANtricity OS upgrade?

Cancel OK

8. Click **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 click **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 Storage Nodes, including software-based Storage Nodes. You must approve the upgrade for all Storage Nodes, even though a SANtricity OS upgrade has no effect on software-based Storage Nodes. The upgrade message returned for software-based Storage Nodes is "SANtricity OS upgrade is not applicable to this node."

SANtricity OS Upgrade Progress

Approve All Remove All

 **Storage Nodes - 0 out of 4 completed**

Approve All Remove All

| Site | Name | Progress | Stage | Details | Action |
|-----------|-------------------------|----------|----------------------------|---------|----------------------|
| RTP Lab 1 | DT-10-224-1-181-S1 | | Waiting for you to approve | | Approve |
| RTP Lab 1 | DT-10-224-1-182-S2 | | Waiting for you to approve | | Approve |
| RTP Lab 1 | DT-10-224-1-183-S3 | | Waiting for you to approve | | Approve |
| RTP Lab 1 | NetApp-SGA-Lab2-002-024 | | Waiting for you to approve | | Approve |

◀ ▶

9. Optionally, sort the list of nodes in ascending or descending order by **Site**, **Name**, **Progress**, **Stage**, or **Details**. 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.

10. 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. Later, when the node is upgraded, the appliance node is rebooted. These operations might cause service interruptions for clients that are communicating with the node.

- Click 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).

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



You can delay applying a SANtricity OS upgrade to a node, but the SANtricity OS upgrade process will not be complete until you approve the SANtricity OS upgrade on all the listed Storage Nodes.

After you click **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. For nodes intentionally not upgraded, the process will show stage of Complete with one of the following messages in the Details column:

- Storage Node was already upgraded.
- SANtricity OS upgrade is not applicable to this node.
- SANtricity OS file is not compatible with this node.

The message “SANtricity OS upgrade is not applicable to this node” indicates that the node does not have a storage controller that can be managed by the StorageGRID system. This message will appear for non-appliance Storage Nodes. You can complete the SANtricity OS upgrade process without upgrading the node displaying this message.

The message “SANtricity OS file is not compatible with this node” indicates that the node requires a SANtricity OS file different than the one the process is attempting to install. After you complete the current SANtricity OS upgrade, download the SANtricity OS appropriate for the node and repeat the upgrade process.

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

As shown in the example, 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.

Storage Nodes - 1 out of 9 completed
Approve All
Remove All

| Site | Name | Progress | Stage | Details | Action |
|-----------|----------------|----------|----------------------------|---------|----------------------|
| Raleigh | RAL-S1-101-196 | | Queued | | Remove |
| Raleigh | RAL-S2-101-197 | | Complete | | |
| Raleigh | RAL-S3-101-198 | | Queued | | Remove |
| Sunnyvale | SVL-S1-101-199 | | Queued | | Remove |
| Sunnyvale | SVL-S2-101-93 | | Waiting for you to approve | | Approve |
| Sunnyvale | SVL-S3-101-94 | | Waiting for you to approve | | Approve |
| Vancouver | VTC-S1-101-193 | | Waiting for you to approve | | Approve |
| Vancouver | VTC-S2-101-194 | | Waiting for you to approve | | Approve |
| Vancouver | VTC-S3-101-195 | | Waiting for you to approve | | Approve |

12. 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 that node. The appliance might need to be placed in maintenance mode to recover from the failure. Contact technical support before continuing.

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:

- Use maintenance mode to upgrade SANtricity OS on the node that shows a stage of Error.
- Use the Grid Manager to re-start 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 at 2020-04-07 13:26:02 EDT

SANtricity OS Upgrade File

SANtricity OS Upgrade File Browse

Passphrase

Provisioning Passphrase

Start

13. 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.

Related information

[NetApp Interoperability Matrix Tool](#)

[Upgrading SANtricity OS on the storage controllers using maintenance mode](#)

Upgrading SANtricity OS on the storage controllers 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.
- If the StorageGRID appliance is running in a StorageGRID system, the SG6000-CN controller has been placed in maintenance mode.



Maintenance mode interrupts the connection to the storage controller.

[Placing an appliance into maintenance mode](#)

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 *Upgrading SANtricity OS* guide or the SANtricity System Manager online help to upgrade the firmware and NVSRAM.

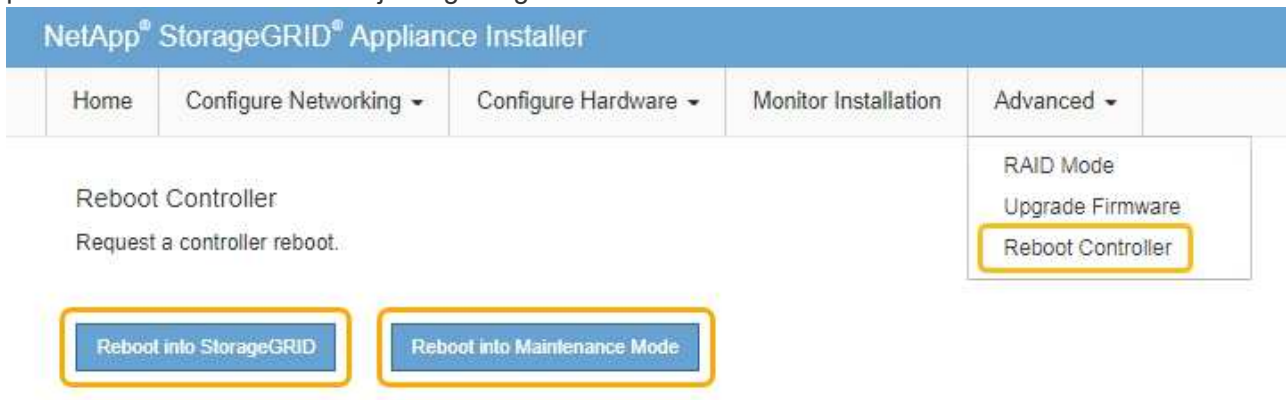


Activate the upgrade files immediately. Do not defer activation.

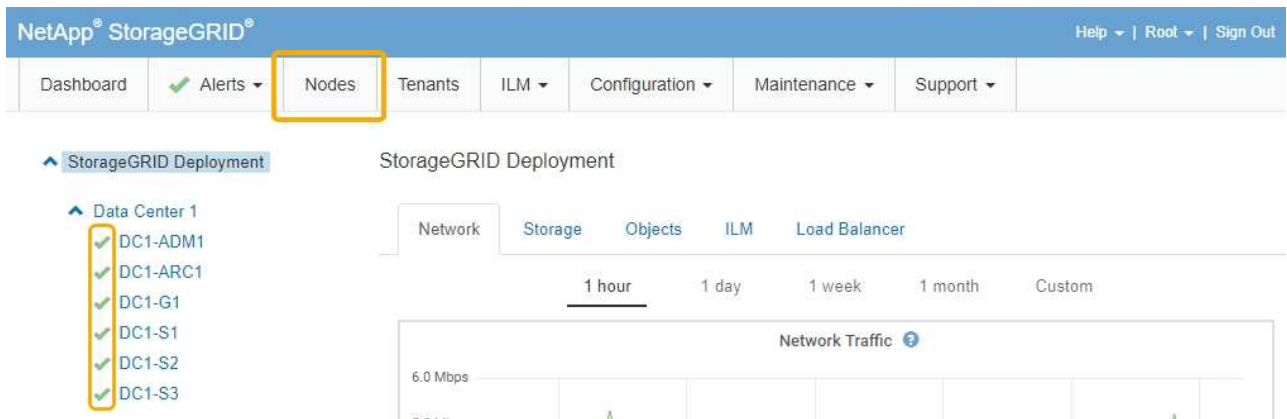
4. Once the upgrade operation has completed, reboot the node. From the StorageGRID Appliance Installer, select **Advanced > Reboot Controller**, and then select one of these options:
 - Select **Reboot into StorageGRID** to reboot the controller with the node rejoining the grid. Select this option if you are done working in maintenance mode and are ready to return the node to normal

operation.

- Select **Reboot into Maintenance Mode** to reboot the controller with the node remaining in maintenance mode. Select this option if there are additional maintenance operations you need to perform on the node before rejoining the grid.



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** tab should display a normal status ✓ for the appliance node, indicating that no alerts are active and the node is connected to the grid.



Related information

[NetApp Interoperability Matrix Tool](#)

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

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