Maintenance configuration procedures

StorageGRID appliances

NetApp
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Maintenance configuration procedures

Upgrade SANtricity (SG6160)

Upgrade SANtricity OS on SG6100 storage controllers using Grid Manager

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

Before you begin

- If you did not obtain the SANtricity OS version you want to upgrade to from NetApp Downloads: StorageGRID Appliance, you have consulted NetApp Downloads: StorageGRID Appliance or 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.

About this task

You can't perform other software updates (StorageGRID software upgrade or a hotfix) while a SANtricity OS upgrade is in 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. Nodes in your grid that don't use SANtricity OS will not be affected by this procedure.

> The following steps are only applicable when you are using the Grid Manager to perform the upgrade. The storage controllers in the appliance can't 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 don't need to apply a separate NVSRAM upgrade file.

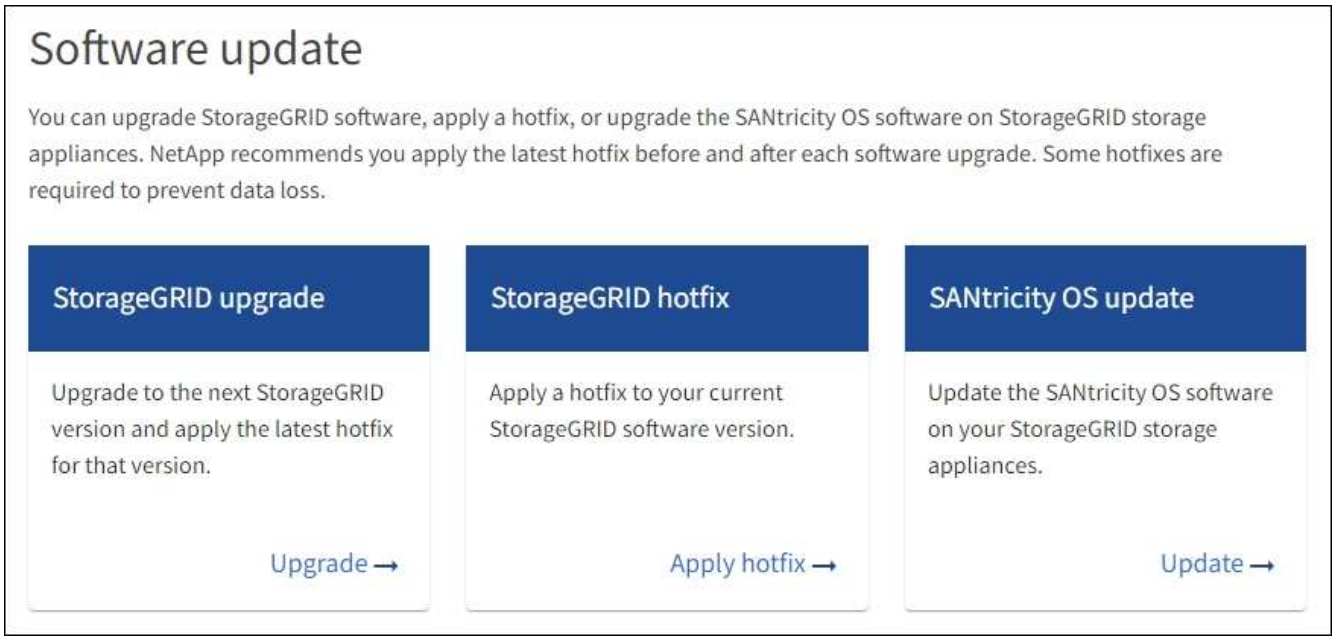
> Apply the latest StorageGRID hotfix before you begin this procedure. See StorageGRID hotfix procedure for details.

Steps

1. Download the new SANtricity OS Software file from NetApp Downloads: StorageGRID Appliance.

   Choose the SANtricity OS version for your storage controllers.

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



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

   The SANtricity OS upgrade page appears and lists the details for each appliance node including:

   - Node name
   - Site
   - Appliance model
   - SANtricity OS version
   - Status
   - Last upgrade status

4. Review the information in the table for all of your upgradable appliances. Confirm that all storage controllers have **Nominal** status. If the status for any controller is **Unknown**, go to **Nodes** > ***appliance node*** > **Hardware** to investigate and resolve the issue.
5. 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 with a green check mark next to the **Browse** button. Don’t change the file name because it is part of the verification process.

6. Enter the provisioning passphrase and select **Continue**.

   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 **Yes** to stage the SANtricity OS upgrade file to the primary Admin Node.

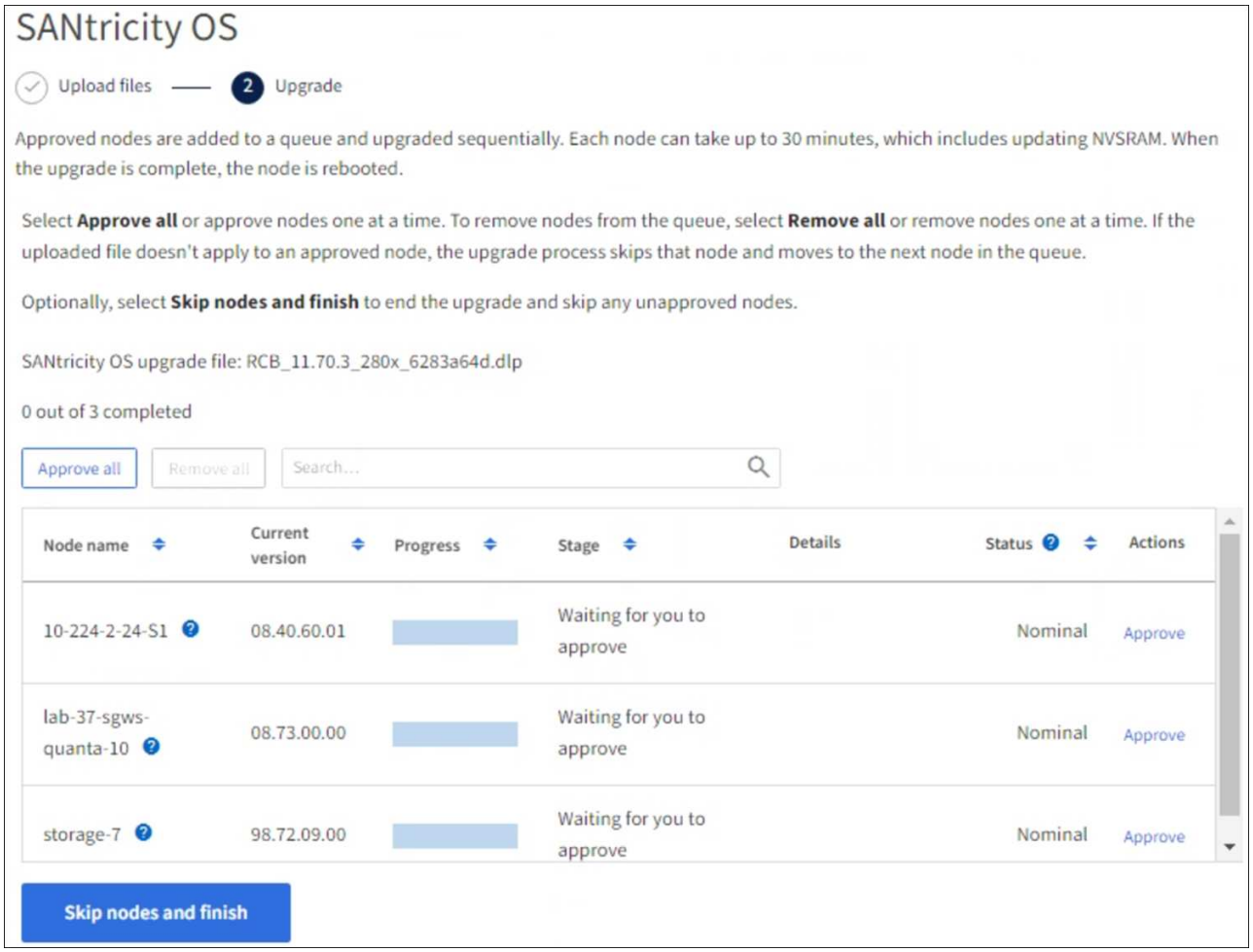
   When the SANtricity OS upgrade starts:

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 aren't displayed. Select **Approve** for all nodes that require the upgrade.



8. Optionally, sort the list of nodes in ascending or descending order by:
   - Node name
   - Current version
   - Progress
   - Stage
   - Status

   You can also enter a term in the Search box to search for specific nodes.

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

Don’t 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 the **Approve All** button 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.

- Select one or more **Approve** buttons to add one or more nodes to the SANtricity OS upgrade queue. The **Approve** button is disabled if the Status is not Nominal.

  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 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 that you must use maintenance mode to upgrade SANtricity OS on the node. 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 number of nodes upgraded, and the date and time the upgrade completed.

12. If a node can’t be upgraded, note the reason shown in the Details column and take the appropriate action.

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

Reason	Recommended 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.

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 applicable nodes.

    b. Select **OK** to return to the **SANtricity OS** page.
    c. When you are ready to continue approving nodes, download the SANtricity OS to restart the upgrade process.

       Nodes already approved and upgraded without errors remain upgraded.

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

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

Related information

- NetApp Interoperability Matrix Tool
- Upgrade SANtricity OS on SG6100 controllers using maintenance mode

Upgrade SANtricity OS on SG6160 storage controller using maintenance mode

You can use maintenance mode to upgrade SANtricity OS on the SG6160 controller.

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.

For storage controllers currently using SANtricity OS newer than 08.42.20.00 (11.42), it is recommended to use Grid Manager to apply an upgrade. However, you may use the maintenance mode procedure if you prefer it or have been instructed to do so by technical support.

Before you begin

- 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 SG6160 controller into maintenance mode, which stops all I/O to the E4000 storage controllers.

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

About this task

Don't upgrade the SANtricity OS or NVSRAM in the storage 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. Confirm the appliance is in maintenance mode.
2. From a service laptop, access SANtricity System Manager and sign in.
3. Download the new SANtricity OS Software file and NVSRAM file to the management client.

> The NVSRAM is specific to the StorageGRID appliance. Don't use the standard NVSRAM download.

4. 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. Don't defer activation.

5. 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.

     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:

     a. In the Grid Manager, select **NODES**.

     b. Verify that the appliance node has a normal status (green check mark icon to the left of the node name), which indicates that no alerts are active and the node is connected to the grid.

Related information

Upgrade SANtricity OS on storage controllers using Grid Manager

Upgrade drive firmware (SG6160)

Upgrade SG6160 drive firmware automatically during appliance reboot

The StorageGRID Appliance Installer automatically installs the latest E-Series drive firmware files during appliance reboot.

E-Series drive firmware files are included in the StorageGRID software. These updates are installed automatically whenever a StorageGRID appliance reboots:

- Into maintenance mode
- As part of a rolling reboot
- During a StorageGRID version upgrade or hotfix installation
- During a SANtricity OS upgrade using maintenance mode

> The drive firmware upgrade isn't attempted for nodes with a status of Needs Attention.

> While an appliance reboots, I/O (input/output) activity to the storage controller is stopped.

You can also install drive firmware upgrades manually using the SANtricity System Manager online or offline method:

- To apply a new drive firmware upgrade before it's packaged in the StorageGRID software
- If an automatic drive firmware upgrade fails
- To use the SANtricity System Manager online drive firmware upgrade from Grid Manager instead of rebooting the node

Upgrade SG6100 drive firmware using SANtricity System Manager online method (SG6160)

Use the SANtricity System Manager online method to upgrade the firmware on the drives in your appliance to make sure you have all the latest features and bug fixes.

> This procedure does **not** apply to the NVMe SSDs in the SG6100-CN, which are updated during StorageGRID software upgrades. Only drives in the E4000 can be updated using this procedure.

Before you begin

- The storage appliance has an Optimal status.
- All drives have an Optimal status.

> Don't upgrade the drive firmware on more than one StorageGRID appliance at a time. Doing so might cause data unavailability, depending on your deployment model and ILM policy.

About this task

The drives are upgraded one at a time while the appliance is performing I/O. This method does not require you to place the appliance in maintenance mode. However, system performance might be impacted and the

upgrade might take several hours longer than the offline method.

> Drives belonging to volumes that don't have redundancy must be updated using the offline method. The offline method should be used for any pool or volume group that is currently degraded.

Steps

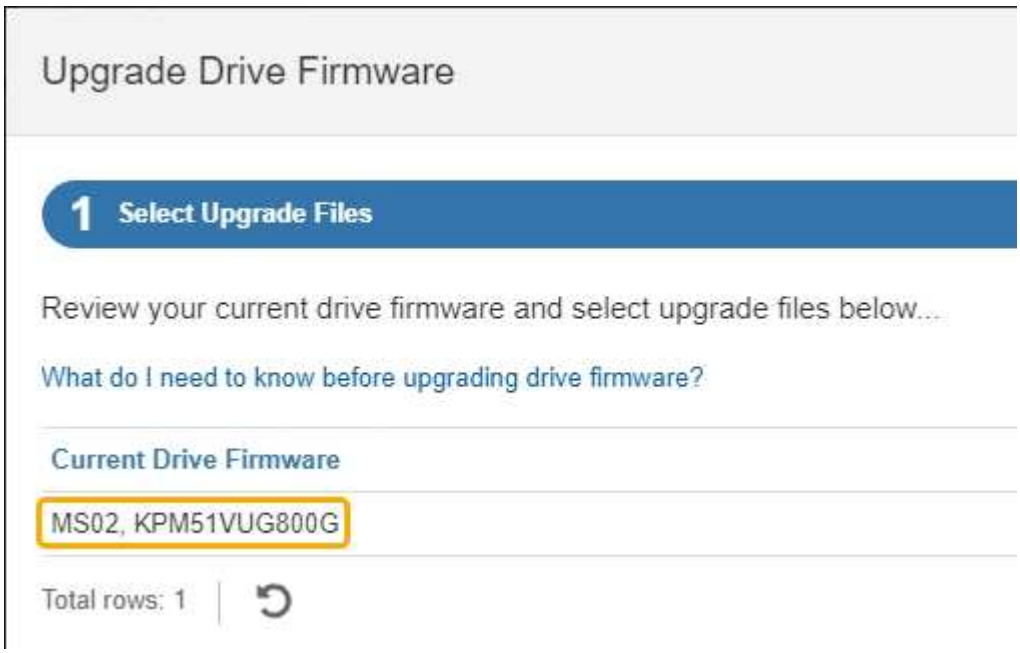
1. Access SANtricity System Manager using one of these methods:
   - Use the StorageGRID Appliance Installer and select **Advanced** > **SANtricity System Manager**
   - Use the Grid Manager and select **NODES** > ***Storage Node*** > **SANtricity System Manager**
   - Use SANtricity System Manager by browsing to the storage controller IP:

     `https://Storage_Controller_IP`

2. Enter the SANtricity System Manager administrator username and password, if required.
3. Verify the drive firmware version currently installed in the storage appliance:
   a. From SANtricity System Manager, select **SUPPORT** > **Upgrade Center**.
   b. Under Drive Firmware upgrade, select **Begin Upgrade**.

      The Upgrade Drive Firmware page displays the drive firmware files currently installed.

   c. Note the current drive firmware revisions and drive identifiers in the Current Drive Firmware column.



      In this example:

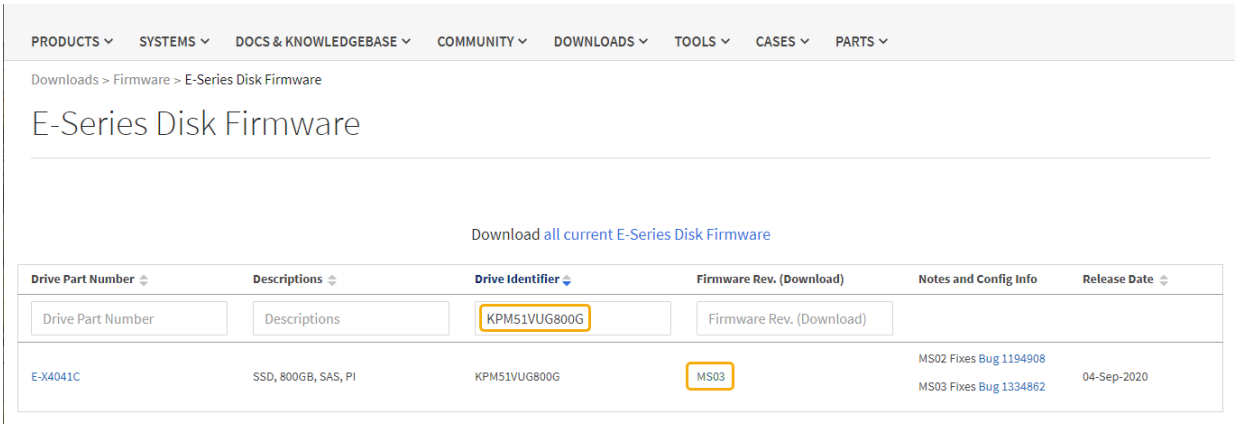
      - The drive firmware revision is **MS02**.
      - The drive identifier is **KPM51VUG800G**.

   d. Select **View drives** in the Associated Drives column to display where these drives are installed in your storage appliance.
   e. Close the Upgrade Drive Firmware window.

4. Download and prepare the available drive firmware upgrade:
   a. Under Drive Firmware upgrade, select **NetApp Support**.
   b. On the NetApp Support Site, select the **Downloads** tab, and then select **E-Series Disk Drive Firmware**.

      The E-Series Disk Firmware page displays.

   c. Search for each **Drive Identifier** installed in your storage appliance and verify that each drive identifier has the latest firmware revision.
      - If the firmware revision is not a link, this drive identifier has the latest firmware revision.
      - If one or more drive part numbers are listed for a drive identifier, a firmware upgrade is available for these drives. You can select any link to download the firmware file.



   d. If a later firmware revision is listed, select the link in the Firmware Rev. (Download) column to download a `.zip` archive containing the firmware file.
   e. Extract (unzip) the drive firmware archive files you downloaded from the Support site.
5. Install the drive firmware upgrade:
   a. From SANtricity System Manager, under Drive Firmware upgrade, select **Begin Upgrade**.
   b. Select **Browse**, and select the new drive firmware files that you downloaded from the Support site.

      Drive firmware files have a filename similar to `D_HUC101212CSS600_30602291_MS01_2800_0002.dlp`.

      You can select up to four drive firmware files, one at a time. If more than one drive firmware file is compatible with the same drive, you get a file conflict error. Decide which drive firmware file you want to use for the upgrade and remove the other one.

   c. Select **Next**.

      Select Drives lists the drives that you can upgrade with the selected firmware files.

      Only drives that are compatible appear.

      The selected firmware for the drive appears in the **Proposed Firmware** column. If you must change this firmware, select **Back**.

   d. Select **Upgrade all drives online** — Upgrades the drives that can support a firmware download while the storage array is processing I/O. You don't have to stop I/O to the associated volumes using these

drives when you select this upgrade method.

> An online upgrade can take several hours longer than an offline upgrade.

e. In the first column of the table, select the drive or drives you want to upgrade.

   The best practice is to upgrade all drives of the same model to the same firmware revision.

f. Select **Start** and confirm that you want to perform the upgrade.

   If you need to stop the upgrade, select **Stop**. Any firmware downloads currently in progress complete. Any firmware downloads that have not started are canceled.

> Stopping the drive firmware upgrade might result in data loss or unavailable drives.

g. (Optional) To see a list of what was upgraded, select **Save Log**.

   The log file is saved in the downloads folder for your browser with the name `latest-upgrade-log-timestamp.txt`.

   If required, troubleshoot driver firmware upgrade errors.

Upgrade SG6100 drive firmware using SANtricity System Manager using offline method (SG6160)

Use the SANtricity System Manager offline method to upgrade the firmware on the drives in your appliance to make sure you have all the latest features and bug fixes.

> This procedure does **not** apply to the NVMe SSDs in the SG6100-CN, which are updated during StorageGRID software upgrades. Only drives in the E4000 can be updated using this procedure.

Before you begin

- The storage appliance has an Optimal status.
- All drives have an Optimal status.
- You have placed the StorageGRID appliance into maintenance mode.

> While the appliance is in maintenance mode, I/O (input/output) activity to the storage controllers is stopped to make disruptive storage operations safe.

> Don’t upgrade the drive firmware on more than one StorageGRID appliance at a time. Doing so might cause data unavailability, depending on your deployment model and ILM policy.

About this task

The drives are upgraded in parallel while the appliance is in maintenance mode. If the pool or volume group does not support redundancy or is degraded, you must use the offline method to upgrade the drive firmware. You should also use the offline method for any drive associated with flash read cache, or any pool or volume group that is currently degraded. The offline method upgrades firmware only while all I/O activity is stopped on the drives to be upgraded. To stop I/O activity, place the node into maintenance mode.

The offline method is faster than the online method and will be significantly faster when many drives in a single appliance need upgrades. However, it requires that nodes be taken out of service, which might require scheduling a maintenance window and monitoring progress. Choose the method that is the best fit for your operational procedures and the number of drives that need to be upgraded.

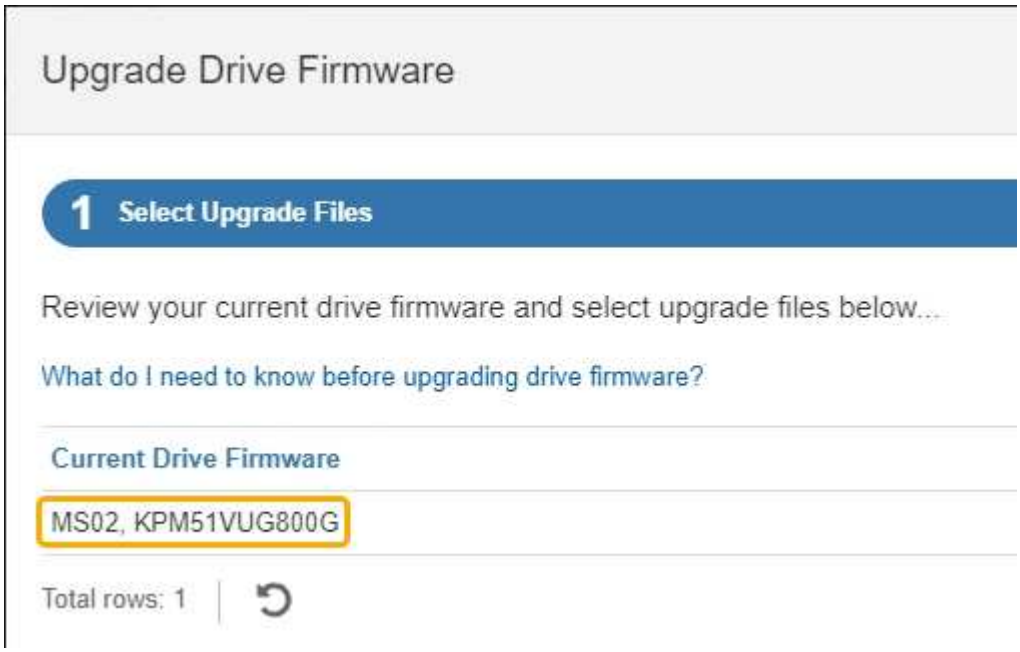
Steps

1. Confirm that the appliance is in maintenance mode.
2. Access SANtricity System Manager using one of these methods:
   - Use the StorageGRID Appliance Installer and select **Advanced** > **SANtricity System Manager**
   - Use the Grid Manager and select **NODES** > ***Storage Node*** > **SANtricity System Manager**
   - Use SANtricity System Manager by browsing to the storage controller IP:

     `https://Storage_Controller_IP`
3. Enter the SANtricity System Manager administrator username and password, if required.
4. Verify the drive firmware version currently installed in the storage appliance:
   a. From SANtricity System Manager, select **SUPPORT** > **Upgrade Center**.
   b. Under Drive Firmware upgrade, select **Begin Upgrade**.

      The Upgrade Drive Firmware page displays the drive firmware files currently installed.

   c. Note the current drive firmware revisions and drive identifiers in the Current Drive Firmware column.



      In this example:

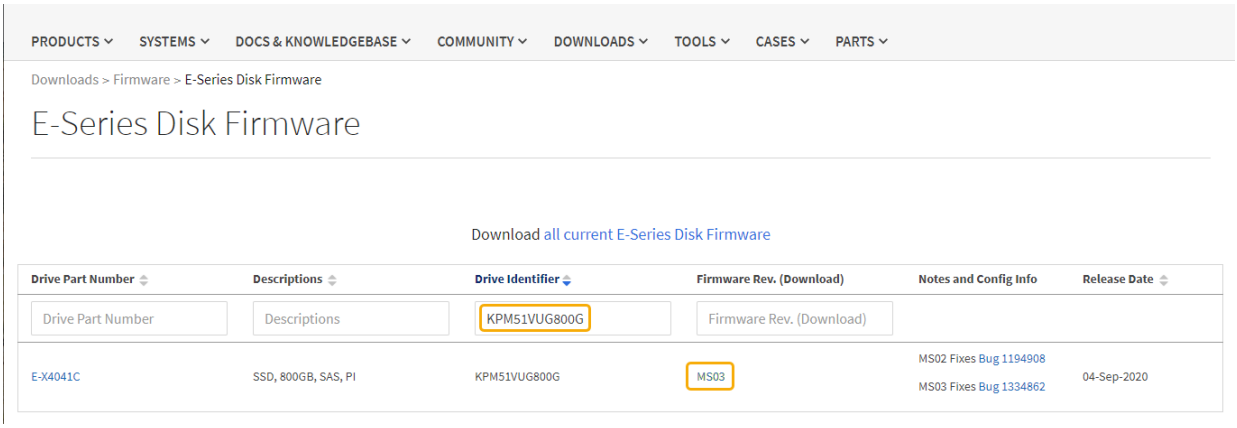
      - The drive firmware revision is **MS02**.
      - The drive identifier is **KPM51VUG800G**.

   d. Select **View drives** in the Associated Drives column to display where these drives are installed in your storage appliance.
   e. Close the Upgrade Drive Firmware window.

5. Download and prepare the available drive firmware upgrade:
   a. Under Drive Firmware upgrade, select **NetApp Support**.
   b. On the NetApp Support Site, select the **Downloads** tab, and then select **E-Series Disk Drive Firmware**.

      The E-Series Disk Firmware page displays.

   c. Search for each **Drive Identifier** installed in your storage appliance and verify that each drive identifier has the latest firmware revision.
      - If the firmware revision is not a link, this drive identifier has the latest firmware revision.
      - If one or more drive part numbers are listed for a drive identifier, a firmware upgrade is available for these drives. You can select any link to download the firmware file.



   d. If a later firmware revision is listed, select the link in the Firmware Rev. (Download) column to download a `.zip` archive containing the firmware file.
   e. Extract (unzip) the drive firmware archive files you downloaded from the Support site.
6. Install the drive firmware upgrade:
   a. From SANtricity System Manager, under Drive Firmware upgrade, select **Begin Upgrade**.
   b. Select **Browse**, and select the new drive firmware files that you downloaded from the Support site.

      Drive firmware files have a filename similar to `D_HUC101212CSS600_30602291_MS01_2800_0002.dlp`.

      You can select up to four drive firmware files, one at a time. If more than one drive firmware file is compatible with the same drive, you get a file conflict error. Decide which drive firmware file you want to use for the upgrade and remove the other one.

   c. Select **Next**.

      Select Drives lists the drives that you can upgrade with the selected firmware files.

      Only drives that are compatible appear.

      The selected firmware for the drive appears in the **Proposed Firmware** column. If you must change this firmware, select **Back**.

   d. Select **Upgrade all drives offline (parallel)** — Upgrades the drives that can support a firmware download only while all I/O activity is stopped on any volumes that use the drives.

> You must place the appliance into maintenance mode before using this method. You should use the **Offline** method to upgrade the drive firmware.

> If you want to use the Offline (parallel) upgrade, don't proceed unless you are certain that the appliance is in maintenance mode. Failure to place the appliance into maintenance mode before initiating an offline drive firmware update might cause data loss.

e. In the first column of the table, select the drive or drives you want to upgrade.

   The best practice is to upgrade all drives of the same model to the same firmware revision.

f. Select **Start** and confirm that you want to perform the upgrade.

   If you need to stop the upgrade, select **Stop**. Any firmware downloads currently in progress complete. Any firmware downloads that have not started are canceled.

   > Stopping the drive firmware upgrade might result in data loss or unavailable drives.

g. (Optional) To see a list of what was upgraded, select **Save Log**.

   The log file is saved in the downloads folder for your browser with the name `latest-upgrade-log-timestamp.txt`.

   If required, troubleshoot driver firmware upgrade errors.

7. After the procedure completes successfully, perform any additional maintenance procedures while the node is in maintenance mode. When you are done, or if you experienced any failures and want to start over, go to the StorageGRID Appliance Installer and select **Advanced** > **Reboot Controller**. Then select one of these options:
   - **Reboot into StorageGRID**.
   - **Reboot into Maintenance Mode**. Reboot the controller and keep the node in maintenance mode. Select this option if there were any failures during the procedure and you want to start over. After the node finishes rebooting into maintenance mode, restart from the appropriate step in the procedure that failed.

     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:

     a. In the Grid Manager, select **NODES**.

     b. Verify that the appliance node has a normal status (green check mark icon to the left of the node name), which indicates that no alerts are active and the node is connected to the grid.

Troubleshoot drive firmware upgrade errors (SG6160)

Troubleshoot errors that can occur when using SANtricity System Manager to upgrade the firmware on the drives in your appliance.

- **Failed assigned drives**
  - One reason for the failure might be that the drive does not have the appropriate signature. Make sure

that the affected drive is an authorized drive. Contact technical support for more information.

  - When replacing a drive, make sure that the replacement drive has a capacity equal to or greater than the failed drive you are replacing.
  - You can replace the failed drive while the storage array is receiving I/O.

- **Check storage array**
  - Make sure that an IP address has been assigned to each controller.
  - Make sure that all cables connected to the controller aren’t damaged.
  - Make sure that all cables are tightly connected.
- **Integrated hot spare drives**

  This error condition must be corrected before you can upgrade the firmware.

- **Incomplete volume groups**

  If one or more volume groups or disk pools are incomplete, you must correct this error condition before you can upgrade the firmware.

- **Exclusive operations (other than background media/parity scan) currently running on any volume groups**

  If one or more exclusive operations are in progress, the operations must complete before the firmware can be upgraded. Use System Manager to monitor the progress of the operations.

- **Missing volumes**

  You must correct the missing volume condition before the firmware can be upgraded.

- **Either controller in a state other than Optimal**

  One of the storage array controllers needs attention. This condition must be corrected before the firmware can be upgraded.

- **Mismatched Storage Partition information between Controller Object Graphs**

  An error occurred while validating the data on the controllers. Contact technical support to resolve this issue.

- **SPM Verify Database Controller check fails**

  A storage partitions mapping database error occurred on a controller. Contact technical support to resolve this issue.

- **Configuration Database Validation (If supported by the storage array’s controller version)**

  A configuration database error occurred on a controller. Contact technical support to resolve this issue.

- **MEL Related Checks**

  Contact technical support to resolve this issue.

- **More than 10 DDE Informational or Critical MEL events were reported in the last 7 days**

  Contact technical support to resolve this issue.

- **More than 2 Page 2C Critical MEL Events were reported in the last 7 days**

  Contact technical support to resolve this issue.

- **More than 2 Degraded Drive Channel Critical MEL events were reported in the last 7 days**

  Contact technical support to resolve this issue.

- **More than 4 critical MEL entries in the last 7 days**

  Contact technical support to resolve this issue.

Turn SGF6112 appliance or SG6100-CN controller identify LED on and off

The blue identify LED on the front and rear of the appliance can be turned on to help locate the appliance in a data center.

Before you begin

You have the BMC IP address of the appliance you want to identify.

Steps

1. Access the appliance BMC interface.
2. Select **Server Identify**.

   The current status of the identify LED is selected.

3. Select **ON** or **OFF**, and then select **Perform Action**.

   When you select **ON**, the blue identify LEDs light on the front (typical shown) and rear of the appliance.

> If a bezel is installed on the controller, it might be difficult to see the front identify LED.

   The rear identify LED is at the center of the appliance below the Micro-SD slot.

4. Turn the identify LEDs on and off as needed.

Related information

Locate appliance in data center

Locate SGF6112 appliance or SG6100-CN controller in data center

Locate the appliance so that you can perform hardware maintenance or upgrades.

Before you begin

- You have determined which appliance requires maintenance.
- To help locate the appliance in your data center, turn on the blue identify LED.

Steps

1. Find the appliance in the data center.
   - Look for a lit blue identify LED on the front or rear of the appliance.

     The front identify LED is behind the front bezel and might be difficult to see if the bezel is installed.

     The rear identify LED is at the center of the appliance below the Micro-SD slot.

   - Check the tags attached to the front of the appliance for a matching part number to confirm you have found the correct appliance.
2. Remove the front bezel, if one is installed, to access the front panel controls and indicators.

After you finish

Turn off the blue identify LED using one of the following methods if you used it to locate the appliance:

- Press the identify LED switch on the appliance front panel.
- Use the appliance BMC interface.

Power SGF6112 appliance or SG6100-CN controller off and on

You can shut down the SGF6112 appliance or SG6100-CN controller and power them back on to perform maintenance.

Shut down the SGF6112 appliance or SG6100-CN controller

Shut down the appliance to perform hardware maintenance.

Before you begin

You have physically located the appliance.

About this task

To prevent service interruptions, shut down the appliance during a scheduled maintenance window when periods of service disruption are acceptable.

Steps

1. Shut down the appliance:

   > You must perform a controlled shut down of the appliance by entering the commands specified below. It is a best practice to perform a controlled shutdown when possible to avoid unnecessary alerts, ensure full logs are available, and avoid service disruptions.

   a. If you have not already logged into the grid node, log in using PuTTY or another ssh client:
      i. Enter the following command: `ssh admin@grid_node_IP`
      ii. Enter the password listed in the `Passwords.txt` file.
      iii. Enter the following command to switch to root: `su -`
      iv. Enter the password listed in the `Passwords.txt` file.

      When you are logged in as root, the prompt changes from `$` to `#`.

   b. Shut down the appliance:
      `shutdown -h now`

      This command might take up to 10 minutes to complete.

2. Use one of the following methods to verify that the appliance is powered off:
   - Look at the power LED on the front of the appliance and confirm that it is off.
   - Check the Power Control page of the BMC interface to confirm the appliance is off.

Power on SGF6112 or SG6100-CN and verify operation

Power on the controller after completing maintenance.

Before you begin

- You have installed the controller in a cabinet or rack and connected the data and power cables.
- You have physically located the controller in the data center.

Steps

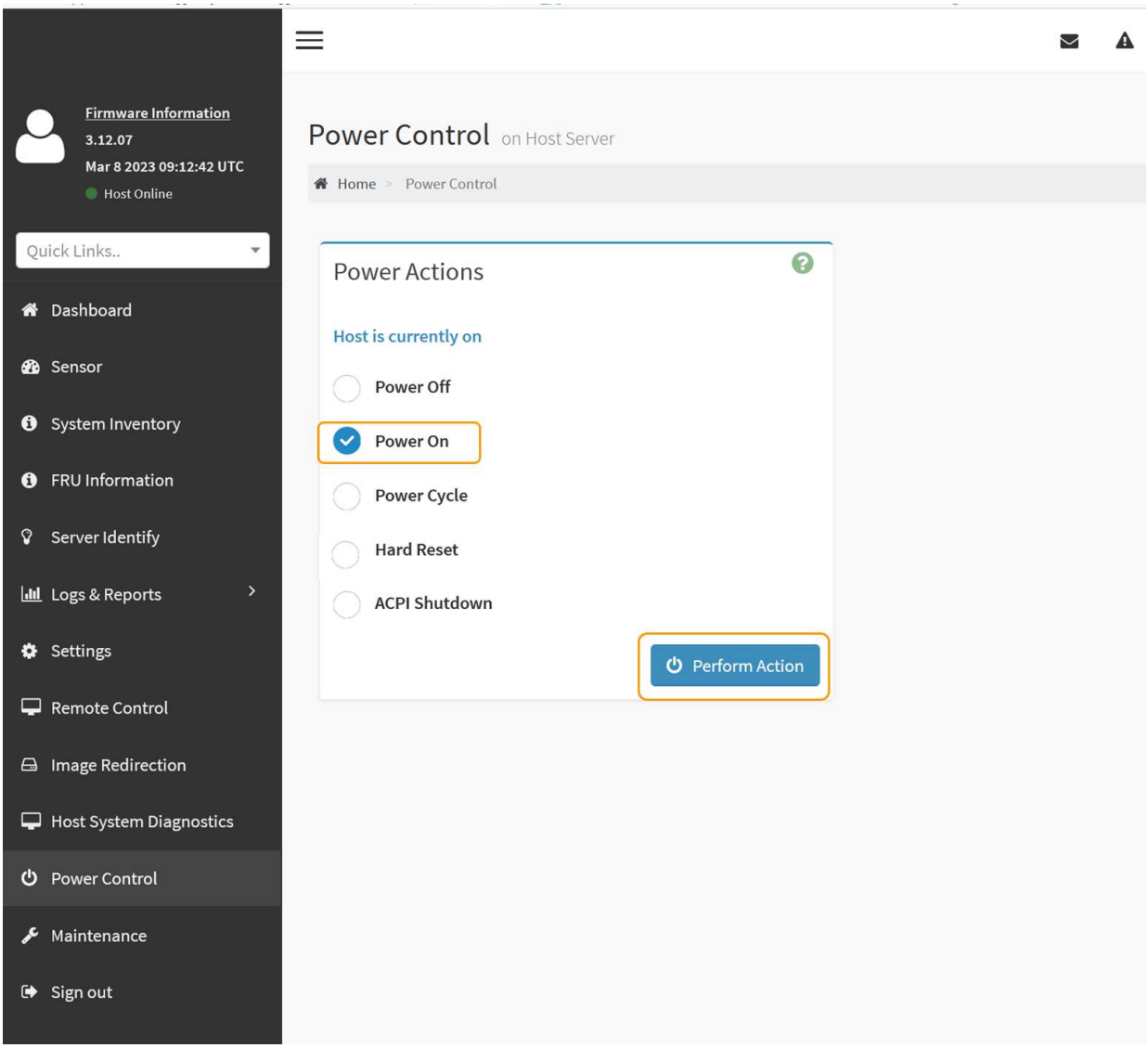
1. Power on the appliance:
   - Option 1: Press the power switch on the front of the controller.

     You might have to remove the bezel to access the power switch; if so, remember to reinstall it afterwards.

   - Option 2: Use the controller BMC interface:
     i. Access the controller BMC interface.

ii. Select **Power Control**.

iii. Select **Power On** and then select **Perform Action**.



Use the BMC interface to monitor start-up status.

2. Confirm that the appliance controller displays in the Grid Manager and with no alerts.

   It might take up to 20 minutes for the controller to display in the Grid Manager.

   Don't take another appliance node offline unless this appliance has a green icon.

3. Confirm that the new appliance is fully operational by logging in to the grid node using PuTTY or another ssh client:

   a. Enter the following command: `ssh *Appliance_IP*`

   b. Enter the password listed in the `Passwords.txt` file.

   c. Enter the following command to switch to root: `su -`

   d. Enter the password listed in the `Passwords.txt` file.

When you are logged in as root, the prompt changes from `$` to `#`.

Related information

View status indicators

Change link configuration of SGF6112 appliance or SG6100-CN controller

You can change the Ethernet link configuration of the appliance including the port bond mode, the network bond mode, and the link speed.

Before you begin

You have placed the appliance into maintenance mode.

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

Steps

1. From the StorageGRID Appliance Installer, select **Configure Networking** > **Link Configuration**.
2. Make the desired changes to the link configuration.

   For more information about the options, see Configure network links.

   > IP configuration changes made while the appliance is in maintenance mode are not applied to the installed StorageGRID environment. Run the `change-ip` command after rebooting the appliance into StorageGRID.

3. When you are satisfied with your selections, click **Save**.

   > You might lose your connection if you made changes to the network or link you are connected through. If you aren't reconnected within 1 minute, re-enter the URL for the StorageGRID Appliance Installer using one of the other IP addresses assigned to the appliance: **`https://appliance_IP:8443`**

4. Make any necessary changes to the IP addresses for the appliance.

   If you made changes to the VLAN settings, the subnet for the appliance might have changed. If you need to change the IP addresses for the appliance, see Configure StorageGRID IP addresses.

5. Select **Configure Networking** > **Ping Test** from the menu.
6. Use the Ping Test tool to check connectivity to IP addresses on any networks that might have been affected by the link configuration changes you made when configuring the appliance.

   In addition to any other tests you choose to perform, confirm that you can ping the Grid Network IP address of the primary Admin Node, and the Grid Network IP address of at least one other node. If necessary, return to the instructions for configuring network links and correct any issues.

7. After you are satisfied that your link configuration changes are working, 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 compute 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 compute controller with the node remaining in maintenance mode. (This option is available only when the controller is in maintenance mode.) Select this option if there are additional maintenance operations you need to perform on the node before it rejoins 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:

  a. In the Grid Manager, select **NODES**.

  b. Verify that the appliance node has a normal status (green check mark icon to the left of the node name), which indicates that no alerts are active and the node is connected to the grid.

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