NetApp

Maintain SG100 and SG1000 hardware

StorageGRID 11.7

NetApp
January 09, 2024

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Maintain SG100 and SG1000 appliances

You might need to perform maintenance procedures on the appliance. The procedures in this section assume that the appliance has already been deployed as a Gateway Node or an Admin Node in a StorageGRID system.

Procedures specific to maintaining your SG100 or SG1000 appliance are in this section.

See Common procedures for maintenance procedures that are used by all appliances.

See Set up hardware for maintenance procedures that are also performed during initial appliance installation and configuration.

Maintenance configuration procedures

Turn controller identify LED on and off

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

Before you begin
You have the BMC IP address of the controller 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 (shown) and rear of the appliance.

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

4. Turn the LED on and off as needed.

Related information

Locate controller in data center

Access BMC interface

Locate controller in data center

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

Before you begin

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

Steps

1. Find the controller requiring maintenance in the data center.

   ◦ Look for a lit blue identify LED on the front or rear of the controller.

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

   ◦ Check the tags attached to the front of each controller for a matching part number.
2. Remove the controller front bezel, if one is installed, to access the front panel controls and indicators.
3. Optional: Turn off the blue identify LED if you used it to locate the controller.

   ◦ Press the identify LED switch on the controller front panel.
   ◦ Use the controller BMC interface.

Shut down the services appliance

Shut down the services appliance to perform hardware maintenance.

Before you begin

- You have physically located the services appliance requiring maintenance in the data center.

   Locating the controller in a data center.

About this task

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

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 services 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.

Change link configuration of services appliance

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

Before you begin

- You have placed the appliance into maintenance mode.

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

About this task

Options for changing the Ethernet link configuration of the services appliance include:

- Changing **Port bond mode** from Fixed to Aggregate, or from Aggregate to Fixed
- Changing **Network bond mode** from Active-Backup to LACP, or from LACP to Active-Backup
- Enabling or disabling VLAN tagging, or changing the value of a VLAN tag
- Changing the link speed

Steps

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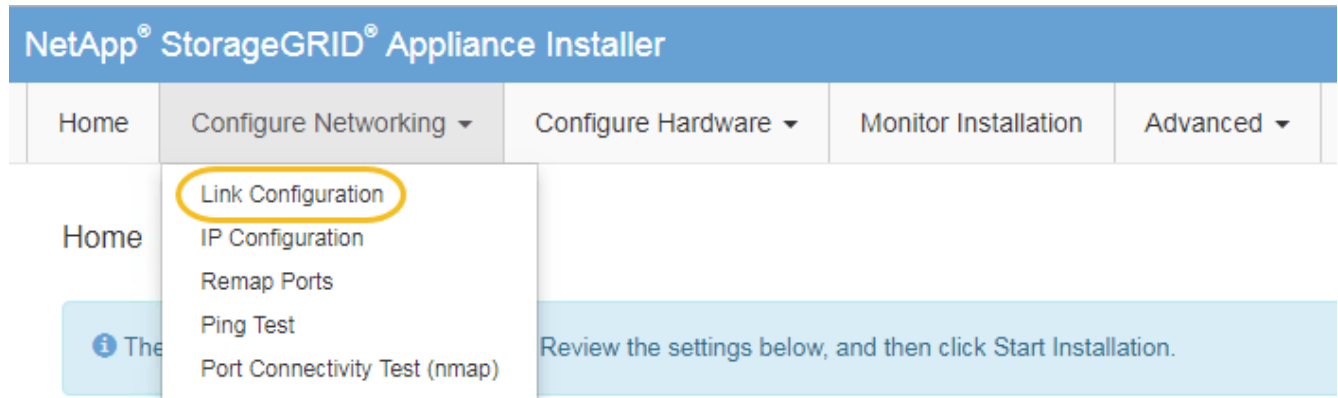
2. Make the desired changes to the link configuration.

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

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

   > ℹ️ 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://services_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. Once 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 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. (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 rejoining the grid.
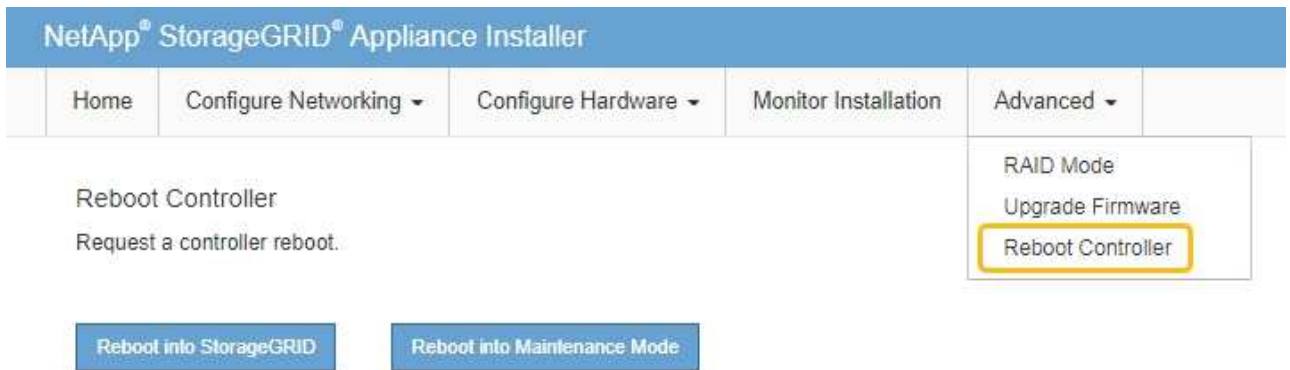
It can take up to 20 minutes for the appliance to reboot and rejoin the grid. To confirm that the reboot is complete and that the node has rejoined the grid, go back to the Grid Manager. The **NODES** page should display a normal status (green check mark icon to the left of the node name) for the appliance node, indicating that no alerts are active and the node is connected to the grid.

Hardware procedures

Replace one or both power supplies in the services appliance

The services appliance has two power supplies for redundancy. If one of the power supplies fails, you must replace it as soon as possible to ensure that the compute controller has redundant power. Both power supplies operating in the controller must be the same model and wattage.

Before you begin

- You have physically located the controller with the power supply to be replaced.

- If you are replacing only one power supply:
  - You have unpacked the replacement power supply unit and ensured that it is the same model and wattage as the power supply unit you are replacing.
  - You have confirmed that the other power supply is installed and running.
- If you are replacing both power supplies at the same time:
  - You have unpacked the replacement power supply units and ensured they are the same model and wattage.

About this task

The figure shows the two power supply units for the SG100, which are accessible from the back of the appliance.

ⓘ   The power supplies for the SG1000 are identical.

Steps

1. If you are replacing only one power supply, you don't need to shut down the appliance. Go to the Unplug the power cord step. If you are replacing both power supplies at the same time, do the following before unplugging the power cords:

   a. Shut down the appliance.

2. Unplug the power cord from each power supply to be replaced.

3. Lift the cam handle on the first supply to be replaced.
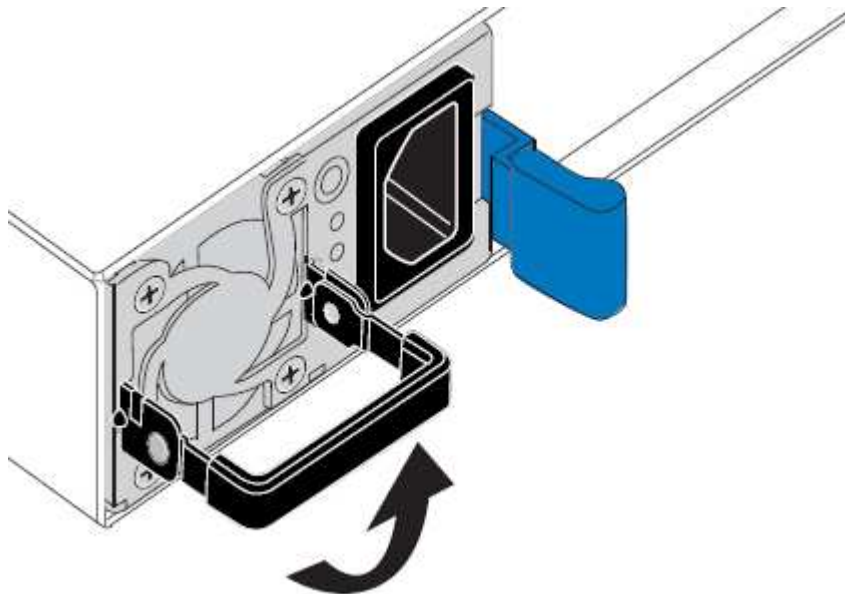
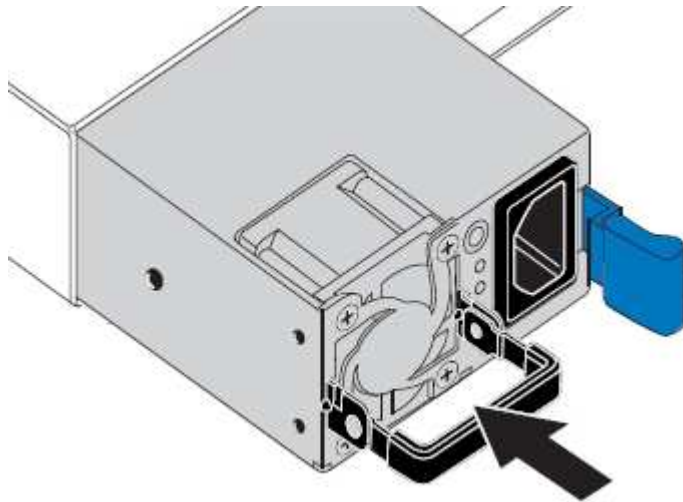
4. Press the blue latch and pull the power supply out.
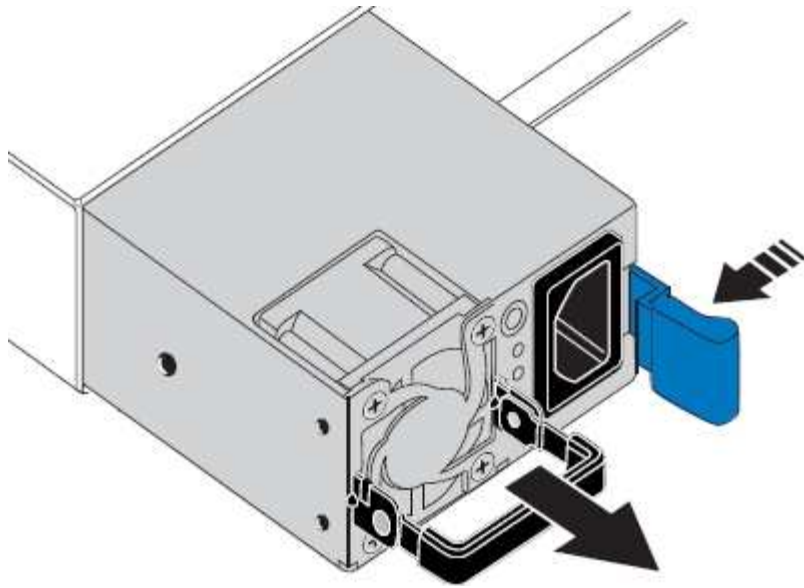
5. With the blue latch on the right, slide the replacement power supply into the chassis.

> ℹ️ Both power supplies must be the same model and wattage.

Ensure that the blue latch is on the right side when you slide the replacement unit in.

6. Push the cam handle down to secure the replacement power supply.

7. If you are replacing both power supplies, repeat steps 2 though 6 to replace the second power supply.

8. Connect the power cords to the replaced units and apply power.

After replacing the part, return the failed part to NetApp, as described in the RMA instructions shipped with the kit. See the Part Return & Replacements page for further information.

Replace fan in services appliance

The services appliance has eight cooling fans. If one of the fans fails, you must replace it as soon as possible to ensure that the appliance has proper cooling.

Before you begin

- You have unpacked the replacement fan.
- You have physically located the appliance.
- You have confirmed that the other fans are installed and running.

About this task

The appliance node will not be accessible while you replace the fan.

The photograph shows a fan for the services appliance. The cooling fans are accessible after you take the top cover off the appliance.

> (i) Each of the two power supply units also contain a fan. Those fans aren't included in this procedure.

Steps

1. Shut down the appliance.

    a. Log in to the grid node:

        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 services appliance:
    `shutdown -h now`

2. Use one of two methods to verify that the power for the services appliance is off:

    ◦ The power indicator LED on the front of the appliance is off.

    ◦ The Power Control page of the BMC interface indicates that the appliance is off.

3. Pull the appliance out of the rack.

4. Lift the latch on the top cover and remove the cover from the appliance.

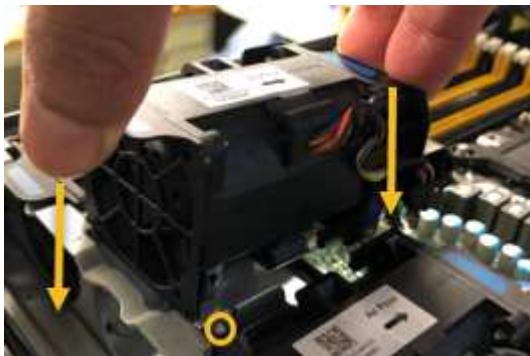5. Locate the fan that failed.
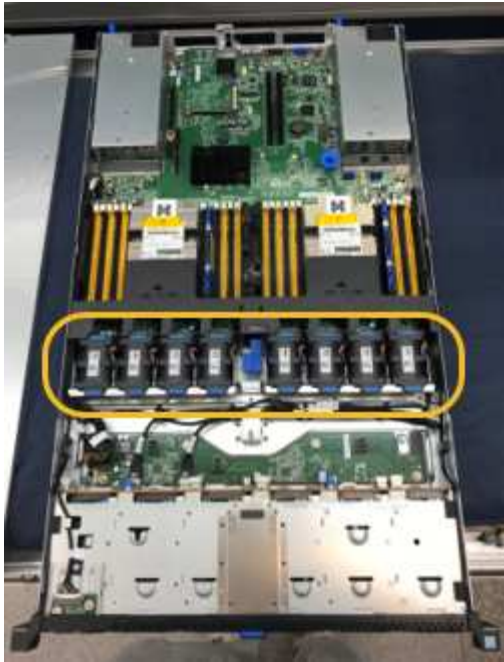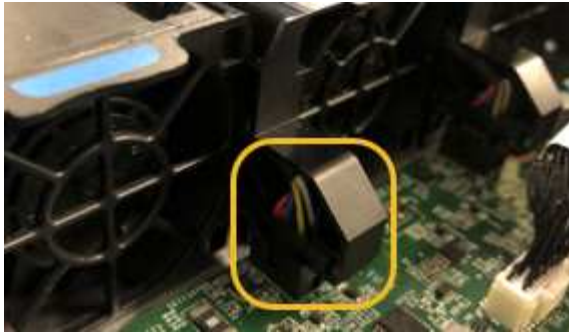
6. Lift the failed fan out of the chassis.
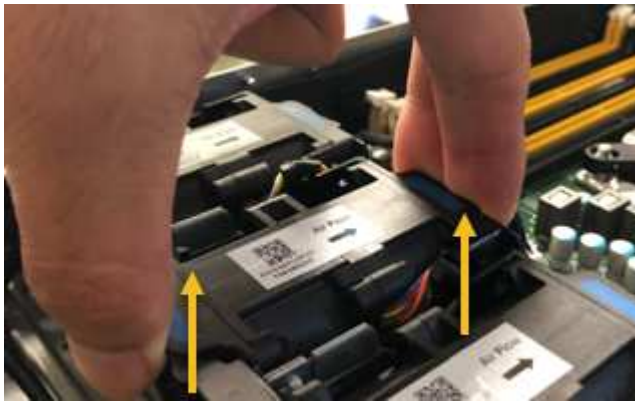
7. Slide the replacement fan into the open slot in the chassis.

   Line up the edge of the fan with the guide pin. The pin is circled in the photograph.

8. Press the fan's connector firmly into the circuit board.

9. Put the top cover back on the appliance, and press the latch down to secure the cover in place.

10. Power on the appliance and monitor the controller LEDs and boot-up codes.

   Use the BMC interface to monitor boot-up status.

11. Confirm that the appliance node appears in the Grid Manager and that no alerts appear.

After replacing the part, return the failed part to NetApp, as described in the RMA instructions shipped with the kit. See the Part Return & Replacements page for further information.

Replace drive in services appliance

The SSDs in the services appliance contain the StorageGRID operating system. Additionally, when the appliance is configured as an Admin Node, the SSDs also contain audit logs, metrics, and database tables. The drives are mirrored using RAID1 for redundancy. If one of the drives fails, you must replace it as soon as possible to ensure redundancy.

Before you begin

- You have physically located the appliance.
- You have verified which drive has failed by noting that its left LED is blinking amber.

   The two SSDs are placed in the slots as shown in the following diagram:

SSD drives
(other slots empty)
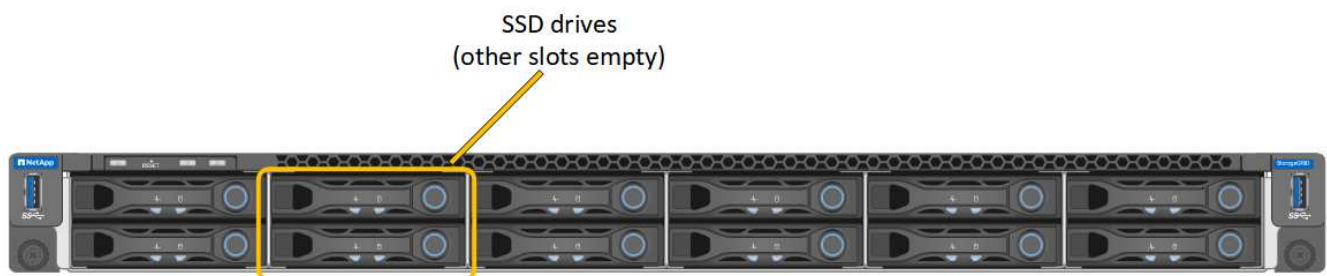
> ℹ️ If you remove the working drive, you will bring down the appliance node. See the information about viewing status indicators to verify the failure.

- You have obtained the replacement drive.
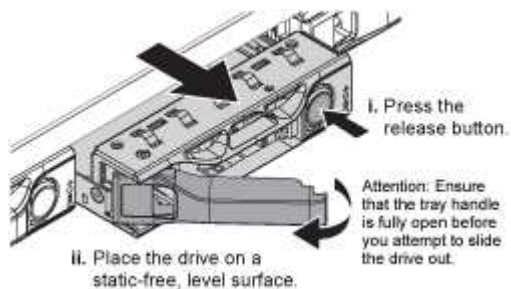- You have obtained proper ESD protection.

Steps

1. Verify that the drive to be replaced has the left LED blinking amber. If a drive issue was reported in the Grid Manager or BMC UIs, HDD02 or HDD2 refer to the drive in the upper slot, and HDD03 or HDD3 refer to the drive in the lower slot.

   You can also use the Grid Manager to monitor the status of the SSDs. Select **NODES**. Then select `Appliance Node` > **Hardware**. If a drive has failed, the Storage RAID Mode field contains a message about which drive has failed.

2. Wrap the strap end of the ESD wristband around your wrist, and secure the clip end to a metal ground to prevent static discharge.

3. Unpack the replacement drive, and set it on a static-free, level surface near the appliance.

   Save all packing materials.

4. Press the release button on the failed drive.

   i. Press the release button.

   Attention: Ensure that the tray handle is fully open before you attempt to slide the drive out.

   ii. Place the drive on a static-free, level surface.

   The handle on the drive springs open partially, and the drive releases from the slot.

5. Open the handle, slide the drive out, and place it on a static-free, level surface.

6. Press the release button on the replacement drive before you insert it into the drive slot.

   The latch springs open.

   i. Insert the drive.

   ii. Close the drive tray handle. Note: Do not use excessive force while closing the handle.
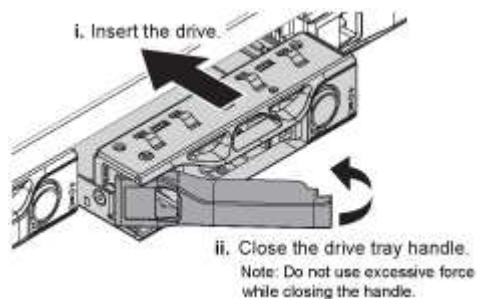
7. Insert the replacement drive in the slot, and then close the drive handle.

   (i) | Don't use excessive force while closing the handle.

   When the drive is fully inserted, you hear a click.

   The drive is automatically rebuilt with mirrored data from the working drive. You can check the status of the rebuild by using the Grid Manager. Select **NODES**. Then select `Appliance Node` > **Hardware**. The Storage RAID Mode field contains a "rebuilding" message until the drive is completely rebuilt.

After replacing the part, return the failed part to NetApp, as described in the RMA instructions shipped with the

kit. See the Part Return & Replacements page for further information.

Replace services appliance

You might need to replace the appliance if it is not functioning optimally or if it has failed.

Before you begin

- You have a replacement appliance with the same part number as the appliance you are replacing.
- You have labels to identify each cable that is connected to the appliance.
- You have physically located the appliance.

About this task

The StorageGRID node will not be accessible while you replace the appliance. If the appliance is functioning sufficiently, you can perform a controlled shutdown at the start of this procedure.

> (i) If you are replacing the appliance before installing StorageGRID software, you might not be able to access the StorageGRID Appliance Installer immediately after completing this procedure. While you can access the StorageGRID Appliance Installer from other hosts on the same subnet as the appliance, you can't access it from hosts on other subnets. This condition should resolve itself within 15 minutes (when any ARP cache entries for the original appliance time out), or you can clear the condition immediately by purging any old ARP cache entries manually from the local router or gateway.

Steps

1. Display the current configurations of the appliance and record them.

   a. Log in to the appliance to be replaced:

      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. Enter: **`run-host-command ipmitool lan print`** to display the current BMC configurations for the appliance.

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

3. If any of the network interfaces on this StorageGRID appliance are configured for DHCP, you might need to update the permanent DHCP lease assignments on the DHCP servers to reference the MAC addresses of the replacement appliance. The update ensures the appliance is assigned the expected IP addresses. See Update MAC address references.

4. Remove and replace the appliance:

   a. Label the cables and then disconnect the cables and any network transceivers.
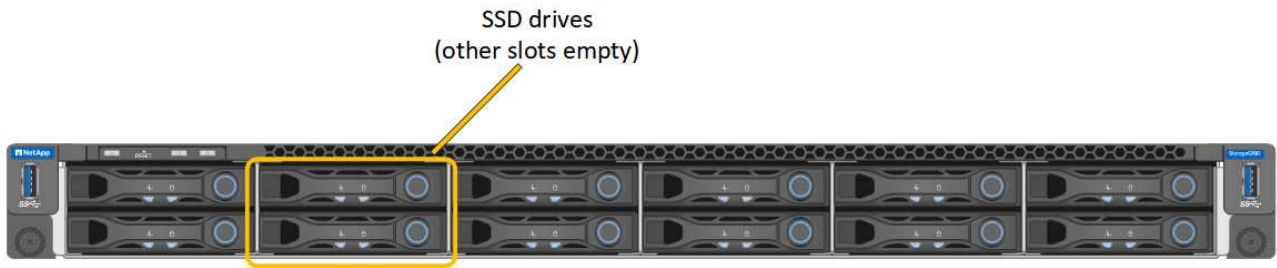
      > (i) To prevent degraded performance, don't twist, fold, pinch, or step on the cables.

   b. Remove the failed appliance from the cabinet or rack.

    c. Transfer the two power supplies, eight cooling fans, and two SSDs from the failed appliance to the replacement appliance.

       The two SSDs are placed in the slots as shown in the following diagram:

       HDD02 or HDD2 refer to the drive in the upper slot, and HDD03 or HDD3 refer to the drive in the lower slot.

       Follow the instructions provided for replacing these components.

    d. Install the replacement appliance into the cabinet or rack.

    e. Replace the cables and any optical transceivers.

    f. Power on the appliance and wait for it to rejoin the grid.

    g. Confirm that the appliance node appears in the Grid Manager and that no alerts appear.

5. Log in to the replaced appliance:

    a. Enter the following command: `ssh admin@`*`grid_node_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.

6. Restore BMC network connectivity for the replaced appliance. There are two options:

    ◦ Use static IP, netmask, and gateway

    ◦ Use DHCP to obtain an IP, netmask, and gateway

       a. To restore the BMC configuration to use a static IP, netmask, and gateway, enter the following commands:

```
run-host-command ipmitool lan set 1 ipsrc static

run-host-command ipmitool lan set 1 ipaddr Appliance_IP

run-host-command ipmitool lan set 1 netmask Netmask_IP

run-host-command ipmitool lan set 1 defgw ipaddr Default_gateway
```

       b. To restore the BMC configuration to use DHCP to obtain an IP, netmask, and gateway, enter the following command:

```
run-host-command ipmitool lan set 1 ipsrc dhcp
```

7. After restoring BMC network connectivity, connect to the BMC interface to audit and restore any additional

custom BMC configuration you might have applied. For example, you should confirm the settings for SNMP trap destinations and email notifications. See Configure BMC interface.

8. Confirm that the appliance node appears in the Grid Manager and that no alerts appear.

After replacing the part, return the failed part to NetApp, as described in the RMA instructions shipped with the kit. See the Part Return & Replacements page for further information.

Related information

View status indicators

View boot-up codes for appliance