# Install and setup

## Install and maintain

NetApp
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# Install and setup

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For most configurations, you can choose from different content formats.

- Quick steps

  A printable PDF of step-by-step instructions with live links to additional content.

- Video steps

  Video step-by-step instructions.

- Detailed steps

  Online step-by-step instructions with live links to additional content.

If your system is in a MetroCluster IP configuration, see the Install MetroCluster IP Configuration instructions.

## Quick steps - AFF C250

This section gives graphic instructions for a typical installation of your system from racking and cabling, through initial system bring-up. Use this guide if you are familiar with installing NetApp systems.

Access the *Installation and Setup Instructions* PDF poster:

AFF C250 Installation and Setup Instructions

## Video steps - AFF C250

The following video shows how to install and cable your new system.

Animation - Installation and Setup of an AFF C250

If you have a MetroCluster configuration, use the MetroCluster installation content.

MetroCluster Documentation

## Detailed steps - AFF C250

This procedure gives detailed step-by-step instructions for installing an AFF C250 storage system.

If you have a MetroCluster configuration, use the MetroCluster Documentation.

## Step 1: Prepare for installation

To install your AFF C250 system, you need to create an account and register the system. You also need to inventory the appropriate number and type of cables for your system and collect specific network information.

**Before you begin**

- Make sure you have access to the NetApp Hardware Universe (HWU) for information about site requirements.
- Customers with specific power requirements must check HWU for configuration options.
- Make sure you have access to the Release Notes for your version of ONTAP for more information about this system.
- You need to provide the following at your site:
  - Rack space for the storage system
  - Phillips #2 screwdriver
  - Additional networking cables to connect your system to your network switch and laptop or console with a Web browser.

**Steps**

1. Unpack the contents of all boxes.
2. Record the system serial number from the controllers.


3. Set up your account:
   a. Log in to your existing account or create an account.
   b. Register (NetApp Product Registration) your system.
4. Download and install NetApp Downloads: Config Advisor on your laptop.
5. Inventory and make a note of the number and types of cables you received.

   The following table identifies the types of cables you might receive. If you receive a cable not listed in the table, see the NetApp Hardware Universe to locate the cable and identify its use.

| Type of cable… | Part number and length | Connector type | For… |
|---|---|---|---|
| 25 GbE cable | X66240A-05 (112-00595), 0.5m;<br>X66240-2 (112-00573), 2m |  | Cluster interconnect network |
| | X66240A-2 (112-00598), 2m;<br>X66240A-5 (112-00600), 5m | | Data |
| 100 GbE cable | X66211-2 (112-00574), 2m;<br>X66211-5 (112-00576), 5m | | Storage |

| Type of cable… | Part number and length | Connector type | For… |
|---|---|---|---|
| RJ-45 (order dependent) | Not applicable |  | Management network (BMC and wrench port) and Ethernet data (e0a and e0b) |
| Fibre Channel | X66250-2 (112-00342) 2m;<br>X66250-5 (112-00344) 5m;<br>X66250-15 (112-00346) 15m;<br>X66250-30 (112-00347) 30m |  | |
| Micro-USB console cable | Not applicable |  | Console connection during software setup |
| Power cables | Not applicable |  | Powering up the system |

6. Review the ONTAP Configuration Guide and collect the required information listed in that guide.

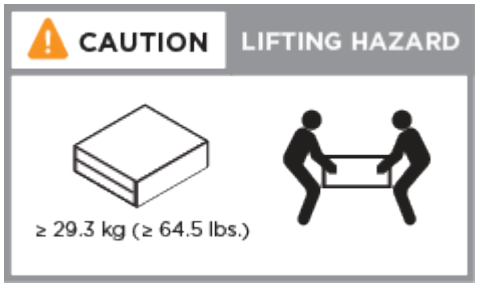
## Step 2: Install the hardware

You need to install your system in a 4-post rack or NetApp system cabinet, as applicable.

**Steps**

1. Install the rail kits, as needed.
2. Install and secure your system using the instructions included with the rail kit.

   You need to be aware of the safety concerns associated with the weight of the system.




3. Identify and manage cables because this system does not have a cable management device.
4. Place the bezel on the front of the system.

## Step 3: Cable controllers to cluster

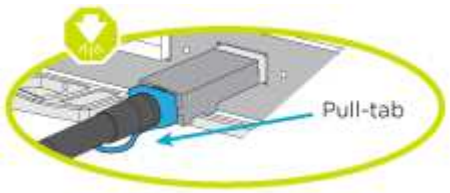
Cable the controllers to a cluster by using the two-node switchless cluster method or by using the cluster interconnect network.

### Option 1: Two-node switchless cluster

The management, Fibre Channel, and data or host network ports on the controller modules are connected to switches. The cluster interconnect ports are cabled on both controller modules.

#### Before you begin

- Contact your network administrator for information about connecting the system to the switches.
- Be sure to check the illustration arrow for the proper cable connector pull-tab orientation.




As you insert the connector, you should feel it click into place; if you do not feel it click, remove it, turn it around and try again.

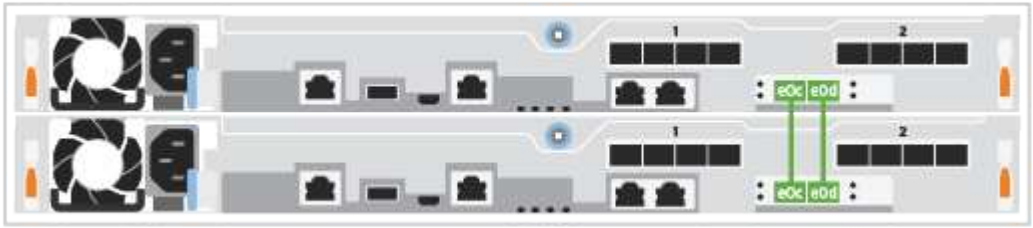
#### About this task

Use the animation or the tabulated steps to complete the cabling between the controllers and the switches. Perform the steps on each controller.

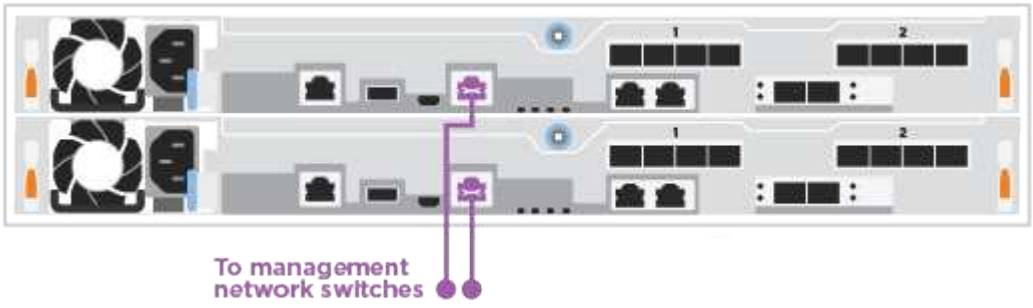
Animation - Cable a two-node switchless cluster

#### Steps

1. Cable the cluster interconnect ports e0c to e0c and e0d to e0d with the 25GbE cluster interconnect cables.




2. Cable the wrench ports to the management network switches with the RJ45 cables.



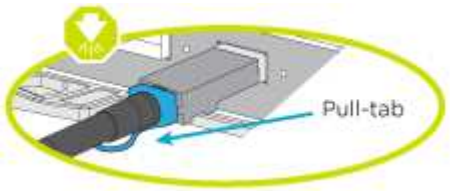
DO NOT plug in the power cords at this point.

**Option 2: Switched cluster**

All ports on the controllers are connected to switches; cluster interconnect, management, Fibre Channel, and data or host network switches.

**Before you begin**

- Contact your network administrator for information about connecting the system to the switches.
- Be sure to check the illustration arrow for the proper cable connector pull-tab orientation.




As you insert the connector, you should feel it click into place; if you do not feel it click, remove it, turn it around and try again.

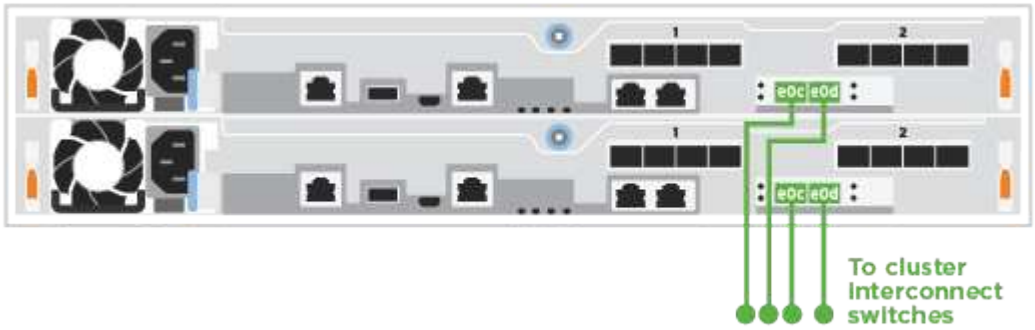
**About this task**

Use the animation or the tabulated steps to complete the cabling between the controllers and the switches. Perform the steps on each controller.

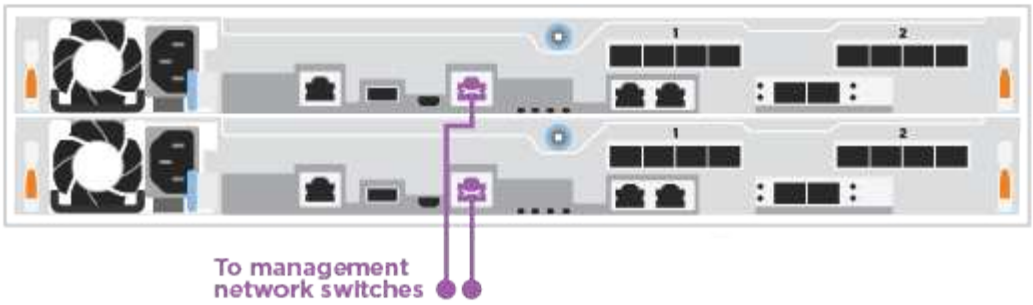
Animation - Cable a switched cluster

**Steps**

1. Cable the cluster interconnect ports e0c and e0d to the 25 GbE cluster interconnect switches.




2. Cable the wrench ports to the management network switches with the RJ45 cables.




DO NOT plug in the power cords at this point.

## Step 4: Cable to host network or storage (Optional)

You have configuration-dependent optional cabling to the Fibre Channel or iSCSI host networks or direct-attached storage. This cabling is not exclusive; you can have cabling to a host network and storage.

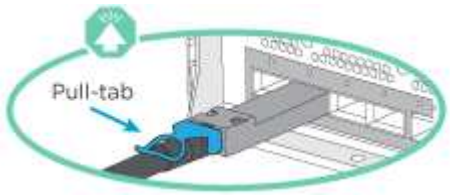
NetApp Hardware Universe slot priority for host network cards (Fibre Channel or 25GbE) is slot 2. However, if you have both cards, the Fibre Channel card goes in slot 2 and the 25GbE card goes in slot 1 (as shown in the options below). If you have an external shelf, the storage card goes in slot 1, the only supported slot for shelves.

**Option 1: Cable to Fibre Channel host network**

Fibre Channel ports on the controllers are connected to Fibre Channel host network switches.

**Before you begin**

- Contact your network administrator for information about connecting the system to the switches.
- Be sure to check the illustration arrow for the proper cable connector pull-tab orientation.



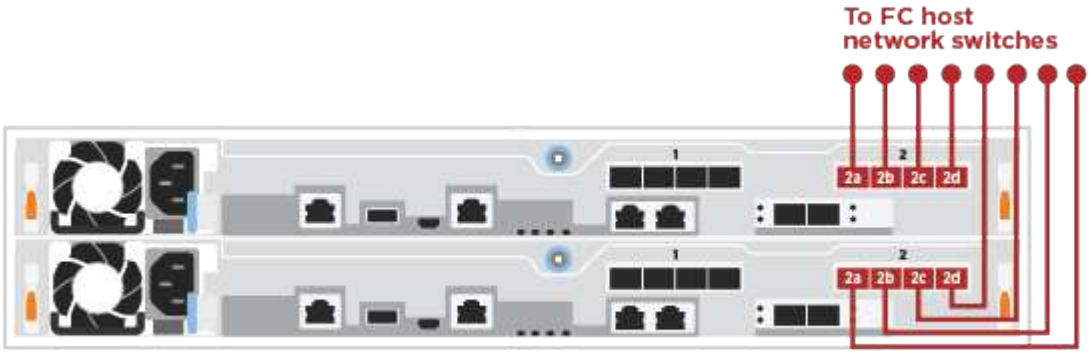

As you insert the connector, you should feel it click into place; if you do not feel it click, remove it, turn it around and try again.

**About this task**

Perform the step on each controller module.

**Steps**

1. Cable ports 2a through 2d to the FC host switches.

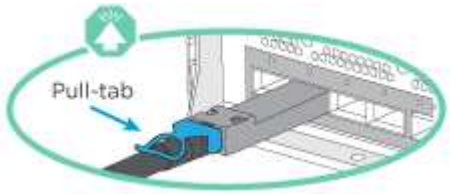



**Option 2: Cable to a 25GbE data or host network**

25GbE ports on the controllers are connected to 25GbE data or host network switches.

**Before you begin**

- Contact your network administrator for information about connecting the system to the switches.
- Be sure to check the illustration arrow for the proper cable connector pull-tab orientation.



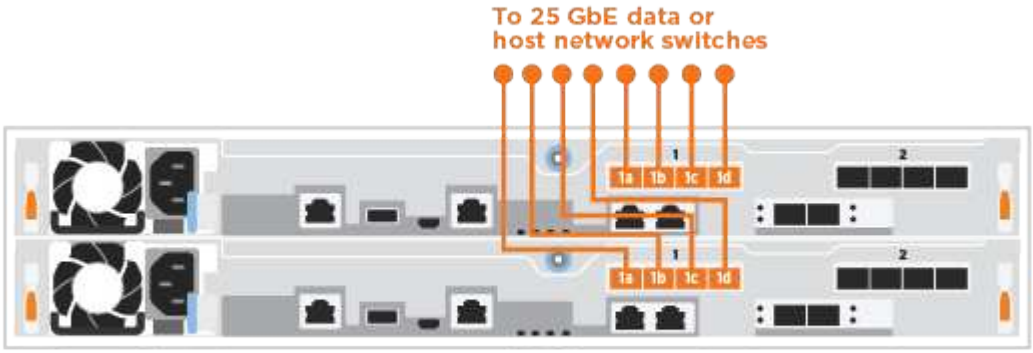
As you insert the connector, you should feel it click into place; if you do not feel it click, remove it, turn it around and try again.

**About this task**

Perform the step on each controller module.

**Steps**

1. Cable ports e4a through e4d to the 10GbE host network switches.

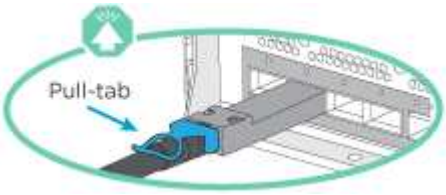



**Option 3: Cable controllers to single drive shelf**

Cable each controller to the NSM modules on the NS224 drive shelf.

**Before you begin**

Be sure to check the illustration arrow for the proper cable connector pull-tab orientation.




As you insert the connector, you should feel it click into place; if you do not feel it click, remove it, turn it around and try again.

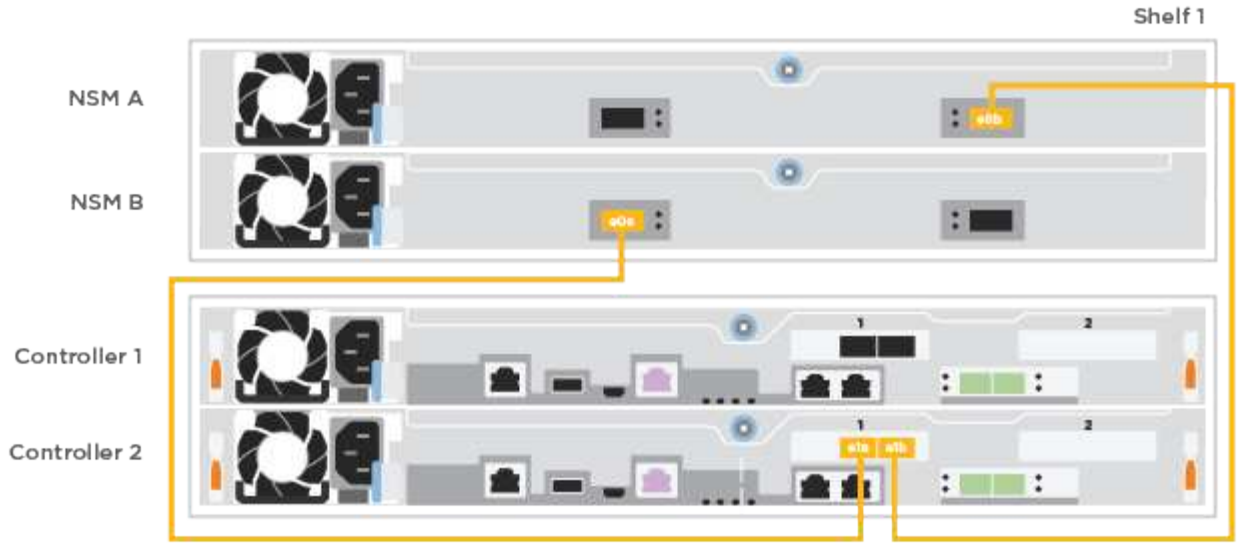
**About this task**

Use the animation or the tabulated steps to complete the cabling between the controllers and the single shelf. Perform the steps on each controller module.

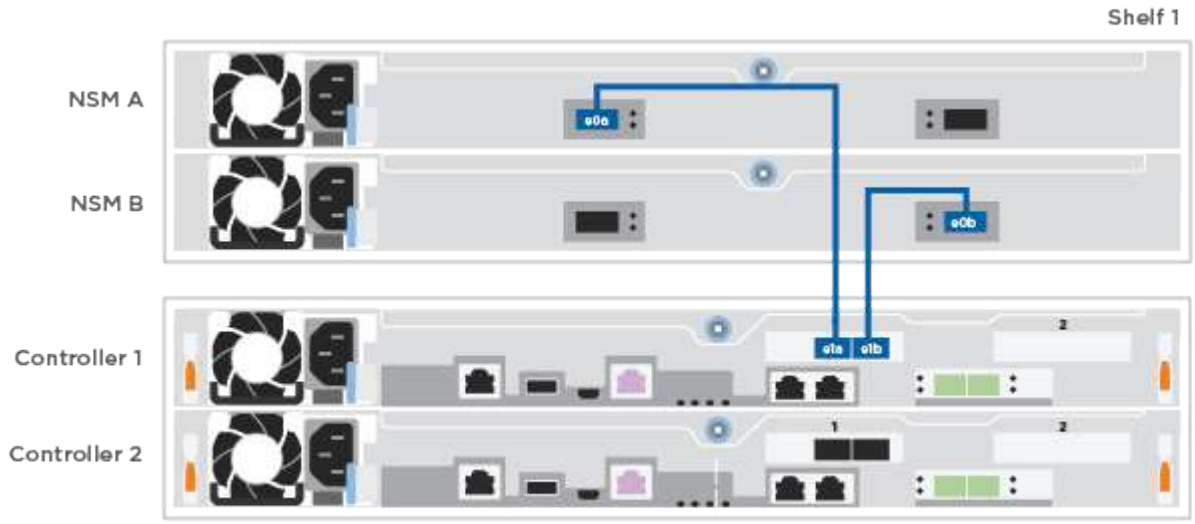
Animation - Cable the controllers to a single NS224

**Steps**

1. Cable controller A to the shelf.




2. Cable controller B to the shelf.




## Step 5: Complete system setup

Complete the system setup and configuration using cluster discovery with only a connection to the switch and laptop, or by connecting directly to a controller in the system and then connecting to the management switch.

**Option 1: If network discovery is enabled**

If you have network discovery enabled on your laptop, you can complete system setup and configuration using automatic cluster discovery.

**Steps**

1. Use the following animation to power on and set shelf IDs for one or more drive shelves:

   For NS224 drive shelves, shelf IDs are pre-set to 00 and 01. If you want to change the shelf IDs, use the straightened end of a paperclip, or narrow tipped ball point pen to access the shelf ID button behind the faceplate.

   Animation - Set drive shelf IDs

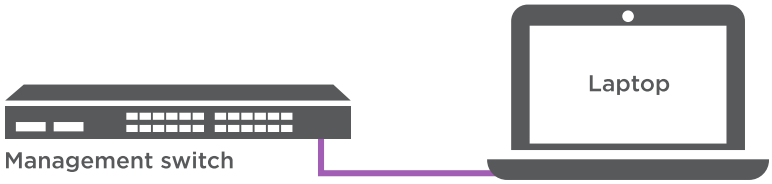
2. Plug the power cords into the controller power supplies, and then connect them to power sources on different circuits.

   The system begins to boot. Initial booting may take up to eight minutes.

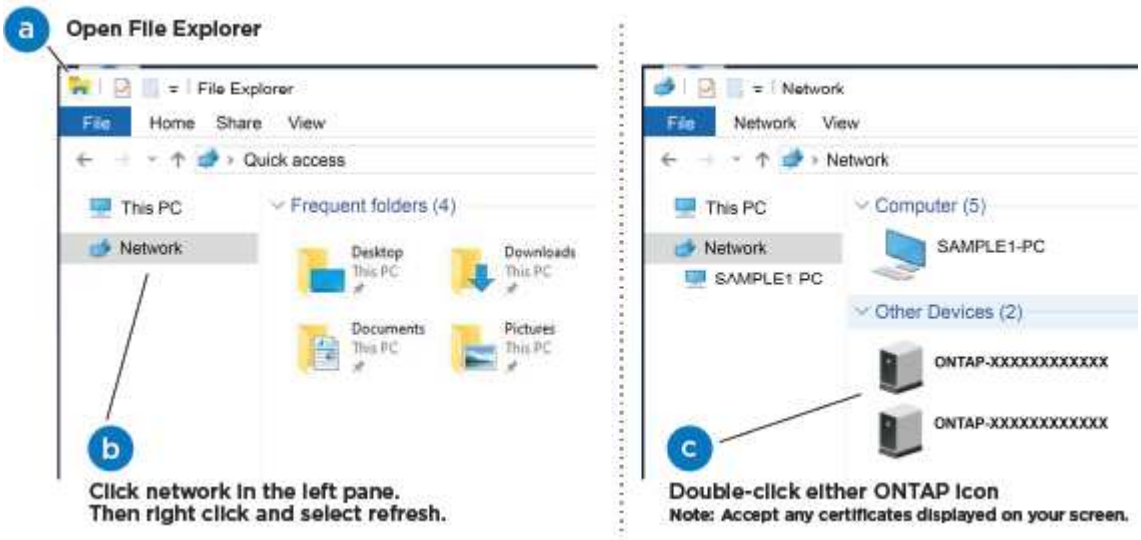
3. Make sure that your laptop has network discovery enabled.

   See your laptop's online help for more information.

4. Connect your laptop to the Management switch:




1. Select an ONTAP icon listed to discover:




   a. Open File Explorer.

   b. Click **Network** in the left pane.

c. Right-click and select **refresh**.

d. Double-click either ONTAP icon and accept any certificates displayed on your screen.

XXXXX is the system serial number for the target node.

System Manager opens.

2. Use System Manager guided setup to configure your system using the data you collected in the ONTAP Configuration Guide.
3. Set up your account and download Active IQ Config Advisor:
   a. Log in to your existing account or create an account.

      NetApp Support Registration

   b. Register your system.

      NetApp Product Registration

   c. Download Active IQ Config Advisor.

      NetApp Downloads: Config Advisor
4. Verify the health of your system by running Config Advisor.
5. After you have completed the initial configuration, go to the ONTAP & ONTAP System Manager Documentation Resources page for information about configuring additional features in ONTAP.

**Option 2: If network discovery is not enabled**

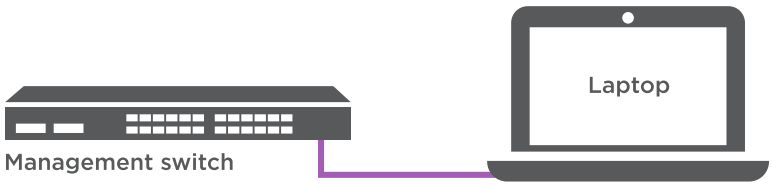
If network discovery is not enabled on your laptop, you must complete the configuration and setup using this task.

**Steps**

1. Cable and configure your laptop or console:
   a. Set the console port on the laptop or console to 115,200 baud with N-8-1.

      See your laptop or console's online help for how to configure the console port.

   b. Connect the laptop or console to the management switch.




   c. Assign a TCP/IP address to the laptop or console, using one that is on the management switch.
2. Use the following animation to power on and set shelf IDs for one or more drive shelves:

   For NS224 drive shelves, shelf IDs are pre-set to 00 and 01. If you want to change the shelf IDs, use the straightened end of a paperclip, or narrow tipped ball point pen to access the shelf ID button behind the faceplate.

Animation - Set drive shelf IDs

3. Plug the power cords into the controller power supplies, and then connect them to power sources on different circuits.

   The system begins to boot. Initial booting may take up to eight minutes.

4. Assign an initial node management IP address to one of the nodes.

| If the management network has DHCP… | Then… |
| --- | --- |
| Configured | Record the IP address assigned to the new controllers. |
| Not configured | a. Open a console session using PuTTY, a terminal server, or the equivalent for your environment.<br>Check your laptop or console's online help if you do not know how to configure PuTTY.<br>b. Enter the management IP address when prompted by the script. |

5. Using System Manager on your laptop or console, configure your cluster:
   a. Point your browser to the node management IP address.
      The format for the address is https://x.x.x.x.
   b. Configure the system using the data you collected in the ONTAP Configuration Guide.
6. Set up your account and download Active IQ Config Advisor:
   a. Log in to your existing account or create an account.
   b. Register your system.
   c. Download Active IQ Config Advisor.
7. Verify the health of your system by running Config Advisor.
8. After you have completed the initial configuration, go to the ONTAP & ONTAP System Manager Documentation Resources page for information about configuring additional features in ONTAP.

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