

# NetApp HCI compute and storage nodes

## Installation and Setup Instructions

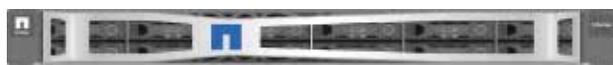
### Prepare for installation | Stage 1



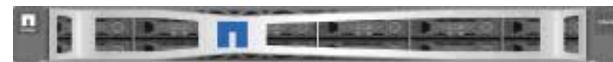
In the box



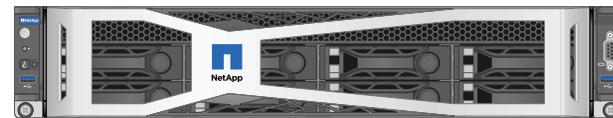
NetApp HCI chassis (only for H410S and H410C)



H615C compute node (order dependent)



H610S storage node (order dependent)



H610C compute node (order dependent)



H410S storage node (order dependent)



H410C compute node (order dependent)



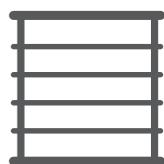
Slide rail kit



Power cables (Two per chassis)



You provide



**Rack space** (order dependent)

H410C and H410S: 2U per chassis  
H610C: 2U per chassis  
H610S: 1U per chassis  
H615C: 1U per chassis



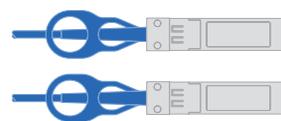
**USB stick** (optional)



**CAT5e or higher cable with RJ45 connector**



**Monitor with a VGA connection and keyboard with a standard USB connection**



**SFP28/SFP+ direct-attach cables or transceivers**

H410C and H410S: Optional, for out-of-band management  
H610C: Optional, recommended  
H615C and H610S: Required for out-of-band management and cluster management



**Any operating system (OS) client with a browser**



Access online



- [End User License Agreement](#)
- [Hardware Universe \(HWU\)](#)
- [NetApp HCI Documentation Center](#)
- [NetApp HCI Resources page](#)
- [NetApp SolidFire Resources page](#)
- [NetApp Interoperability Matrix Tool](#)

## 1 Install the rails.

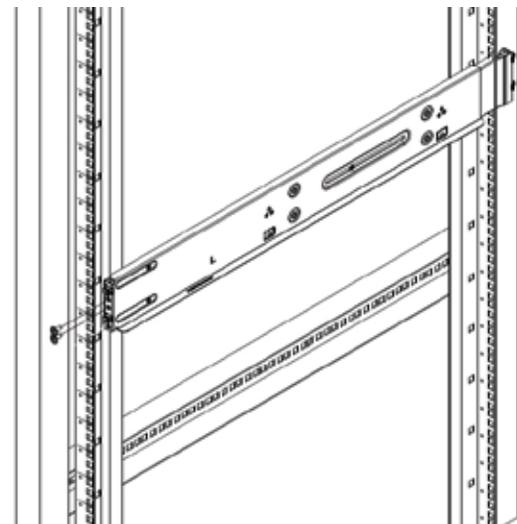
### Two rack unit (2U), four-node NetApp HCI chassis

If you are installing rails for a 2U, four-node NetApp HCI chassis, perform the following steps:

- Align the front of the rail with the holes on the front post of the rack.
- Push the hooks on the front of the rail into the holes on the front post of the rack and then down, until the spring-loaded pegs snap into the rack holes.
- Secure the rail to the rack with screws.
- Extend the rear section of the rail to the rear post of the rack.
- Align the hooks on the rear of the rail with the appropriate holes on the rear post.

**Tip:** Ensure that the rail is level.

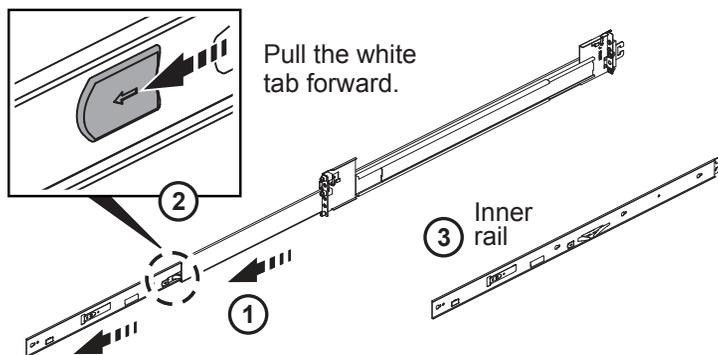
- Mount the rear of the rail onto the rack, and secure the rail with screws.
- Perform all the above steps for the other side of the rack.



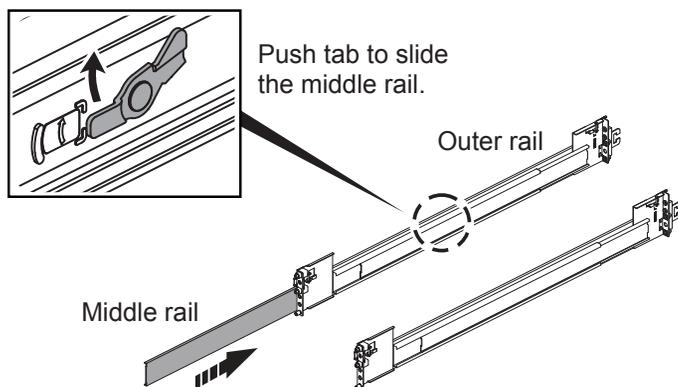
**Note:** The above illustration shows the left rail being attached to the front of the rack.

### 2U H610C chassis

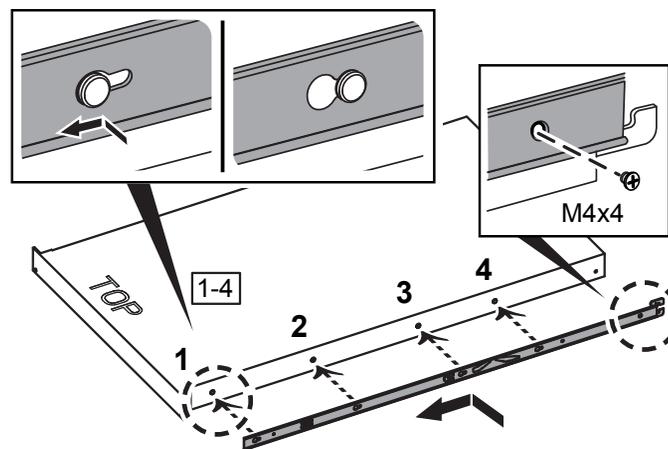
- Slide the inner rail out. The middle rail extends with it. Repeat for other side of the rail.



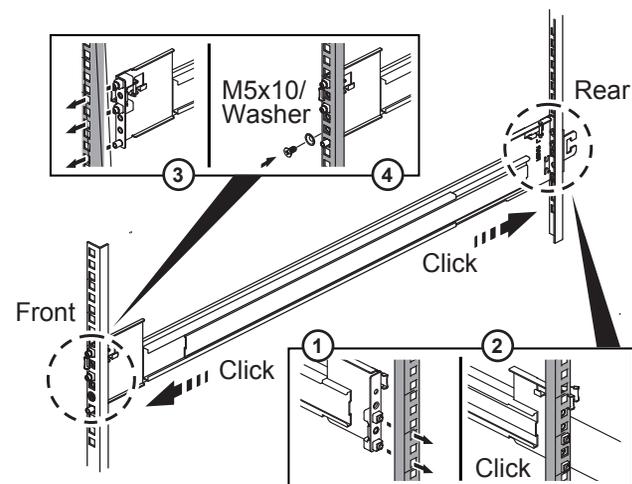
- Push the extended middle rail back in. Repeat for other side of the rail.



- Attach both inner rails (L and R) to either side of the node, and secure the rails with the screws provided in the box. Repeat for other side of the rail.



- Attach outer rail to the rack. Repeat for other side of the rail.

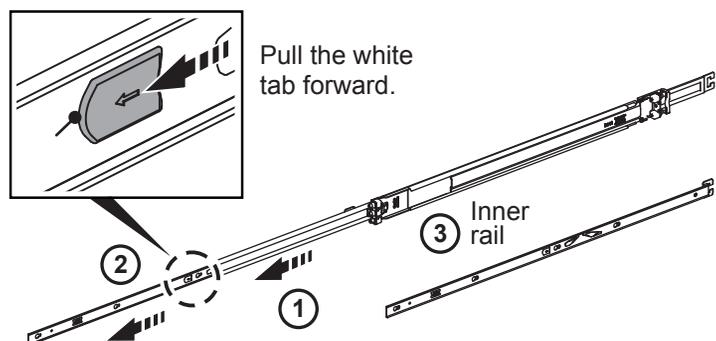


# Install hardware | Stage 2 cont.

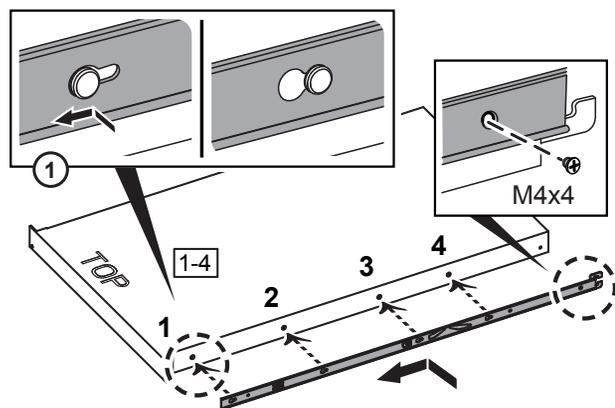
## One rack unit (1U) H610S or H615C chassis

**Note:** There are separate left and right rails for H615C and H610S nodes. You should position the screw hole towards the bottom, so that the thumb-screw can secure the chassis to the rail.

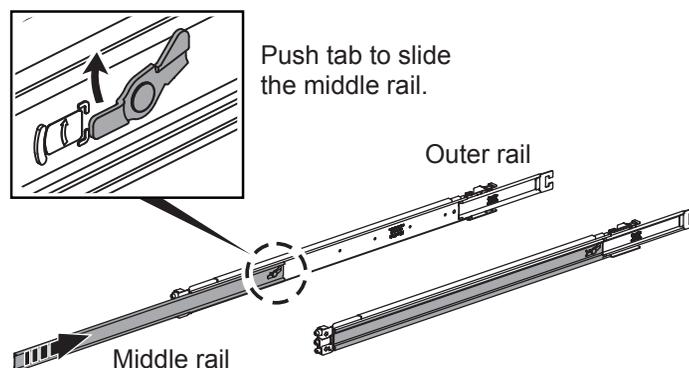
1. Slide the inner rail out. The middle rail extends with it. Repeat for other side of the rail.



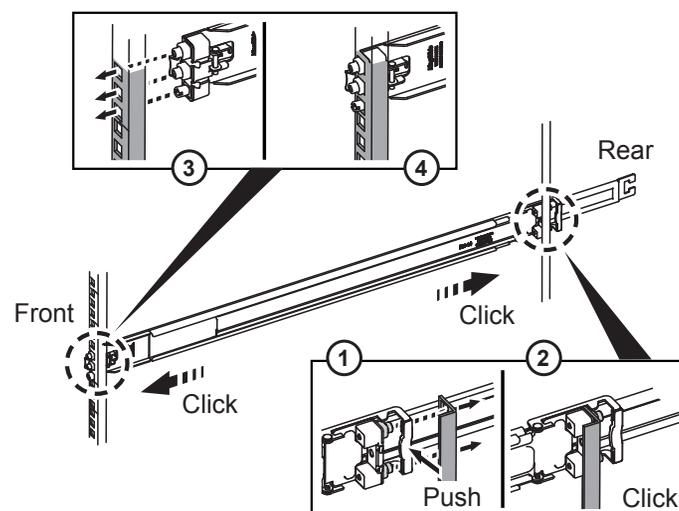
2. Push the extended middle rail back in. Repeat for other side of the rail.



3. Attach both inner rails (L and R) to either side of the node, and secure the rails with the screws provided in the box. Repeat for other side of the rail.



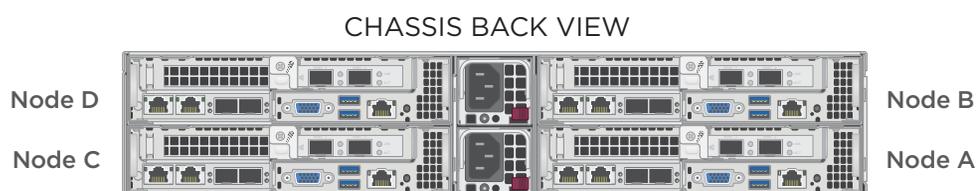
4. Attach outer rail to the rack. Repeat for other side of the rail.



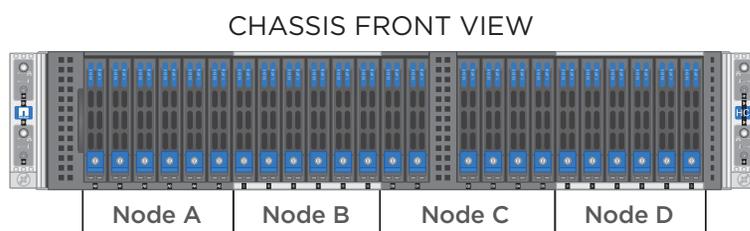
## 2 Install the node/chassis.

### H410C and H410S nodes

1. Install the H410C and H410S nodes in the chassis.  
Here is a rear-view example of a chassis with four nodes installed:



2. Install drives for H410S storage nodes.



### H410S and H410C



Remove all packing material and wrapping from the unit. This will prevent the nodes from overheating and shutting down.



Starting with NetApp HCI 1.8, you can set up a storage cluster with two or three storage nodes.

# Install hardware | Stage 2 cont.

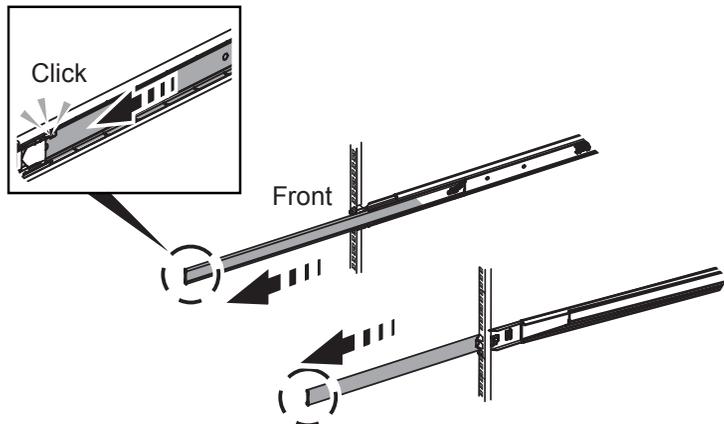
## H610C node/chassis

In the case of H610C, the terms "node" and "chassis" are used interchangeably because node and chassis are not separate components, unlike in the case of the 2U, four-node chassis.

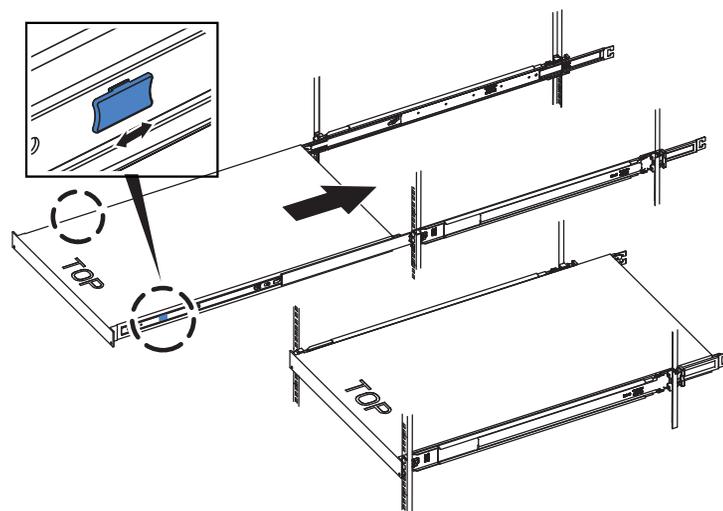
Here is an illustration for installing the node/chassis in the rack:



1. Extend the middle rail fully toward you.



2. Insert the node.



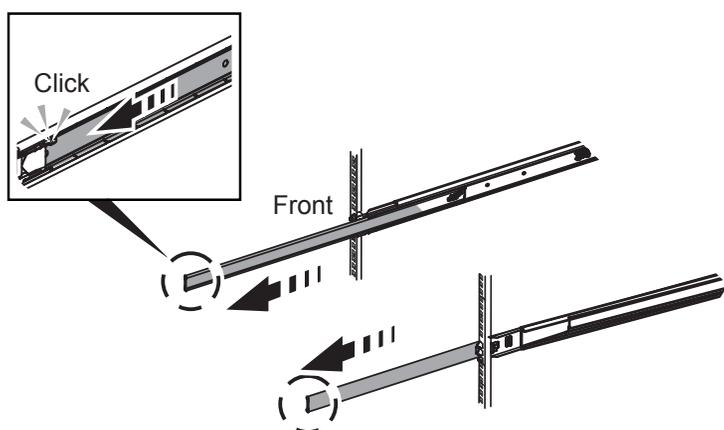
## H610S or H615C node/chassis

In the case of H615C and H610S, the terms "node" and "chassis" are used interchangeably because node and chassis are not separate components, unlike in the case of the 2U, four-node chassis.

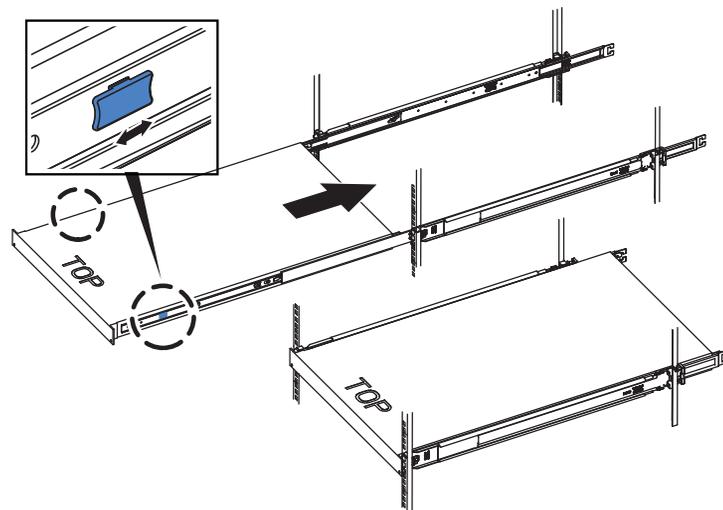
Here is an illustration for installing the node/chassis in the rack:



1. Extend the middle rail fully toward you.



2. Insert the node.



## 3 Install the switches.

If you want to use Mellanox SN2010, SN2100, and SN2700 switches in your NetApp HCI installation, follow the instructions provided here:

- [Mellanox hardware installation instructions](#)
- [TR-4836: NetApp HCI with Mellanox SN2100 and SN2700 Switch Quick Cabling Guide](#) (login required)

## 1 Cable the compute node.



If the airflow vents at the rear of the chassis are blocked by cables or labels, it can lead to premature component failures due to overheating.



If you are adding nodes to an existing NetApp HCI installation, ensure that the cabling and network configuration of the nodes that you add are identical to the existing installation.

### H410C compute nodes (choose option A or B)

#### OPTION A

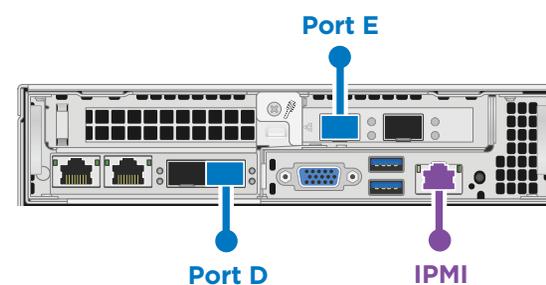
#### Two-cable configuration



10/25GbE cables

- Connect two SFP28/SFP+ cables or transceivers for shared management, virtual machines, and storage connectivity.

- (Optional, recommended)  
Connect a CAT5e cable in the IPMI port for out-of-band management connectivity.



#### OPTION B

#### Six-cable configuration



1/10GbE cables

- Connect two CAT5e or higher cables in ports A and B for management connectivity.

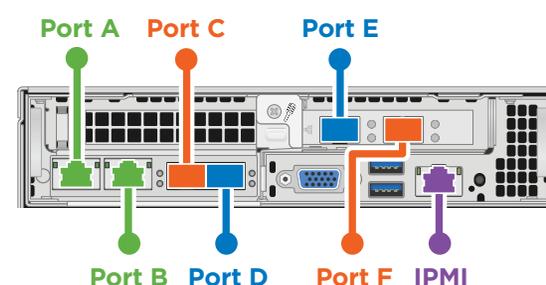


10/25GbE cables

- Connect two SFP28/SFP+ cables or transceivers in ports C and F for virtual machine connectivity.

- Connect two SFP28/SFP+ cables or transceivers in ports D and E for storage connectivity.

- (Optional, recommended)  
Connect a CAT5e cable in the IPMI port for out-of-band management connectivity.



# Cable the node | Stage 3 cont.

## H610C compute node

**Note:** H610C nodes are deployed only in the two-cable configuration. Ensure that all the VLANs are present on ports C and D.

 10/25GbE cables

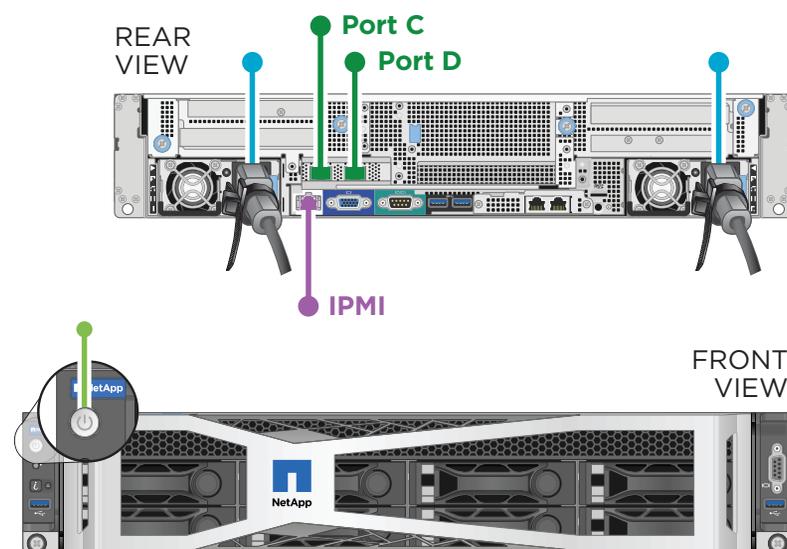
- Connect the node to a 10/25GbE network using two SFP28/SFP+ cables in ports C and D.

 1/10GbE cables

- (Optional, recommended) Connect the node to a 1GbE network using an RJ45 connector in the IPMI port.

 Power cables

- Connect both power cables to the node. Plug the power cables to a 200-240V power outlet.
- Press the power button at the front of the chassis.  
**Note:** It takes approximately five minutes and 30 seconds for the node to boot.



## H615C compute node

**Note:** H615C nodes are deployed only in the two-cable configuration. Ensure that all the VLANs are present on ports A and B.

 10/25GbE cables

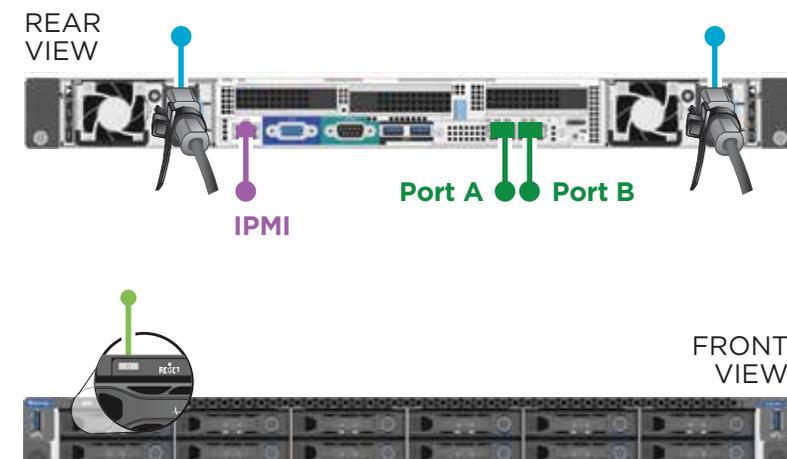
- Connect the node to a 10/25GbE network using two SFP28/SFP+ cables in ports A and B.

 1/10GbE cables

- (Optional, recommended) Connect the node to a 1GbE network using an RJ45 connector in the IPMI port.

 Power cables

- Connect both power cables to the node. Plug the power cables to a 110-140V power outlet.
- Press the power button at the front of the chassis.



## 2 Cable the storage node.



If the airflow vents at the rear of the chassis are blocked by cables or labels, it can lead to premature component failures due to overheating.

### H410S storage node



1/10GbE cables

- Connect two CAT5e or higher cables in ports A and B for management connectivity.

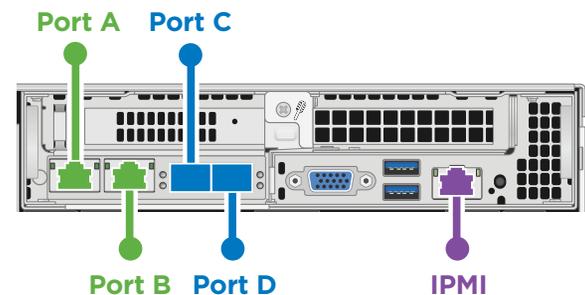


10/25GbE cables

- Connect two SFP28/SFP+ cables or transceivers in ports C and D for storage connectivity.

- (Optional, recommended)

Connect a CAT5e cable in the IPMI port for out-of-band management connectivity.



### H610S storage node



1GbE cables

- Connect the node to a 1GbE network using two RJ45 connectors.



10/25GbE cables

- Connect the node to a 10/25GbE network using two SFP28 or SFP+ cables.



1GbE cable

- Connect the node to a 1GbE network using an RJ45 connector in the IPMI port.

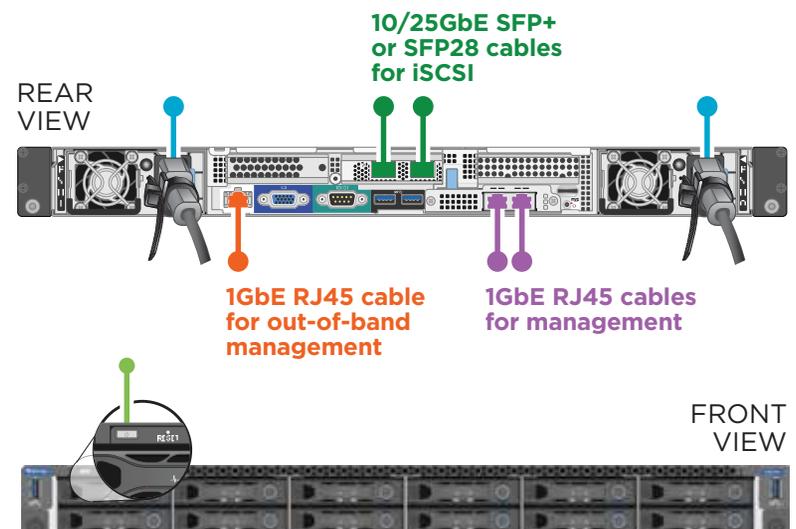


Power cables

- Connect both power cables to the node.

- Plug the power cables to a suitable power outlet. Press the power button at the front of the chassis.

**Note:** It takes approximately five minutes and 30 seconds for the node to boot.



Steps 3 and 4 apply only if you are installing H410C and H410S nodes in a chassis.

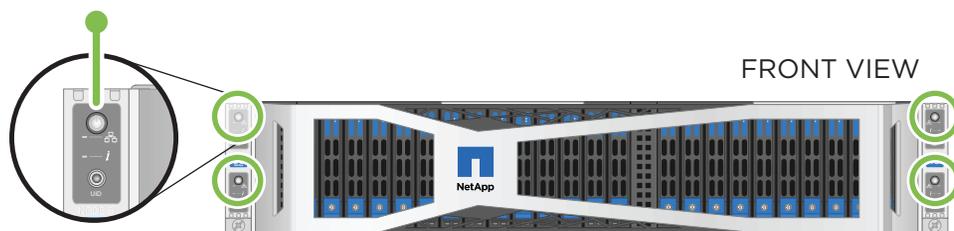
## 3

Connect the power cords to the two power supply units per chassis and plug them into 240V PDU or power outlet.

This step does not apply if you are adding a new node to an existing chassis.

## Cable the node | Stage 3 cont.

- 4 Power on the NetApp HCI nodes.



It takes approximately six minutes for the node to boot.

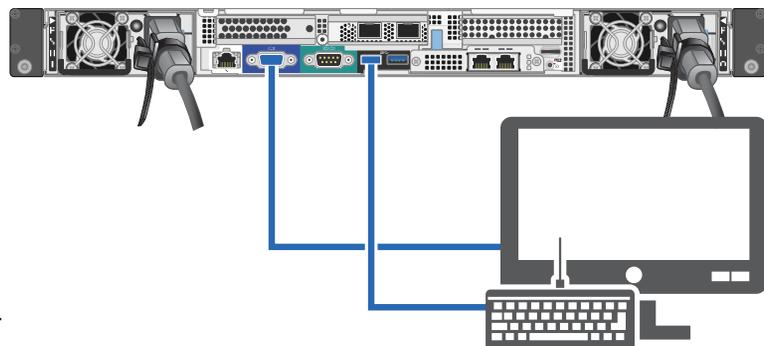
## Configure NetApp HCI | Stage 4

(Choose option A or B below)

### OPTION A

#### Setting up a new NetApp HCI installation

1. Configure an IPv4 address on the management network (Bond1G) on one storage node.  
**Note:** If you are using DHCP on the management network, you can connect to the DHCP-acquired IPv4 address of the storage system. For more information about DHCP-acquired IPv4 addresses, see the [NetApp HCI Deployment Guide](#).
  - a. Plug in a KVM to the back of one storage node.
  - b. Configure the IP address, subnet mask, and gateway address for Bond1G in the user interface. You can also configure a VLAN ID for the Bond1G network.
2. Using a supported web browser (Mozilla Firefox, Google Chrome, or Microsoft Edge), navigate to the NetApp Deployment Engine by connecting to the IPv4 address that you configured in Step 1.
3. Use the NetApp Deployment Engine user interface (UI) to configure NetApp HCI.



All the other NetApp HCI nodes that you installed will be discovered automatically. For more information, see the [NetApp HCI Deployment Guide](#).

### OPTION B

#### Expanding an existing NetApp HCI installation

- Note:** If you are expanding your installation using H615C compute nodes, you must ensure that the cluster runs on NetApp HCI 1.7 or later.
1. Using a supported web browser, browse to the IP address of the management node.
  2. Log in to the NetApp Hybrid Cloud Control by providing the NetApp HCI storage cluster administrator credentials.
  3. Follow the steps in the wizard to add storage and/or compute nodes to your NetApp HCI installation. The newly installed NetApp HCI nodes on the same network will be discovered automatically. For more information, see the [NetApp HCI Expansion documentation](#).



The cabling and network configuration of the nodes that you add must be identical to the existing NetApp HCI installation.

## H610C compute node

Install the GPU drivers in ESXi for each H610C node that you installed, and validate their functionality. See the [NetApp Deployment Guide](#).

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## H615C compute node

- If your H615C node has GPUs in it, install the GPU driver. See the [NetApp Deployment Guide](#).
  - Configure out-of-band management using the Baseboard Management Controller (BMC).
    1. Use a web browser and navigate to the default BMC IP address: 192.168.0.120
    2. Log in using the following default credentials: **User name:** root **Password:** calvin
    3. From the node management screen, navigate to **Settings > Network Settings**, and configure the network parameters for the out-of-band management port.
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## H610S storage node

Configure out-of-band management using the Baseboard Management Controller (BMC).

1. Use a web browser and navigate to the default BMC IP address: 192.168.0.120
2. Log in using the following default credentials: **User name:** root **Password:** calvin
3. From the node management screen, navigate to **Settings > Network Settings**, and configure the network parameters for the out-of-band management port.  
See [How to access BMC and change IP address on H610S](#).