



Detailed guide - AFF C190

ONTAP Systems

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Detailed guide - AFF C190

This guide gives detailed step-by-step instructions for installing a AFF C190 system.

Step 1: Prepare for installation

To install your AFF C190 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.

You need to have access to the Hardware Universe for information about site requirements as well as additional information on your configured system. You might also want to have access to the Release Notes for your version of ONTAP for more information about this system.

[NetApp Hardware Universe](#)

[Find the Release Notes for your version of ONTAP 9](#)

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
- A laptop or console with an RJ-45 connection and access to 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.

[NetApp Support Registration](#)

- b. Register your system.

[NetApp Product Registration](#)


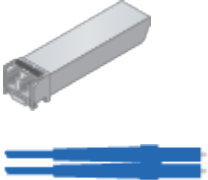



4. Download and install Config Advisor on your laptop.

[NetApp Downloads: Config Advisor](#)

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 Hardware Universe to locate the cable and identify its use.

[NetApp Hardware Universe](#)

Type of cable...	Part number and length	Connector type	For...
10 GbE cable (order dependent)	X6566B-05-R6 (112-00297), 0.5m		Cluster interconnect network
	X6566B-2-R6 (112-00299), 2m		
	X6566B-2-R6 (112-00299), 2m		Data
	X6566B-3-R6 (112-00300), 3m		
	X6566B-5-R6 (112-00301), 5m		
Optical network cables (order dependent)	X6553-R6 (112-00188), 2m		SFP + FC host network
	X6536-R6 (112-00090), 5m		
	X6554-R6(112-00189), 15m		
Cat 6, RJ-45 (order dependent)	X6585-R6 (112-00291), 3m		Ethernet host and management network
	X6562-R6 (112-00196), 5m		
Micro-USB console cable	Not applicable		Console connection during software setup on non-Windows or Mac laptop/console
Power cables	Not applicable		Powering up the system

6. Download and complete the *Cluster configuration worksheet*.

[Cluster Configuration Worksheet](#)

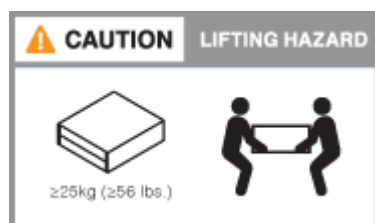
Step 2: Install the hardware

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

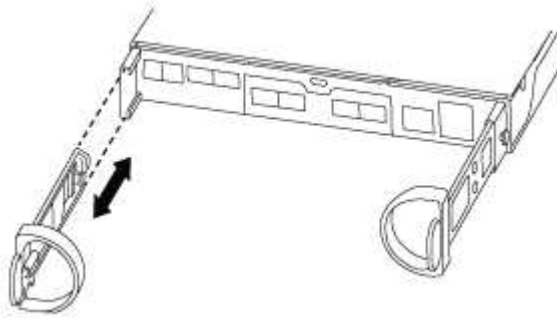
1. Install the rail kits, as needed.
2. Install and secure your system using the instructions included with the rail kit.



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



3. Attach cable management devices (as shown).



4. Place the bezel on the front of the system.

Step 3: Cable controllers to your network

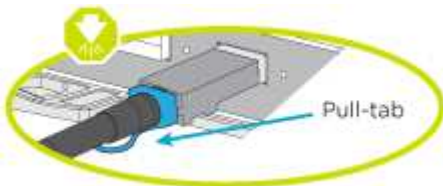
You can cable the controllers to your network by using the two-node switchless cluster method or by using the cluster interconnect network.

Option 1: Cable a two node switchless cluster, unified configuration

UTA2 ports and management ports on the controller modules are connected to switches. The cluster interconnect ports are cabled on both controller modules.

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.

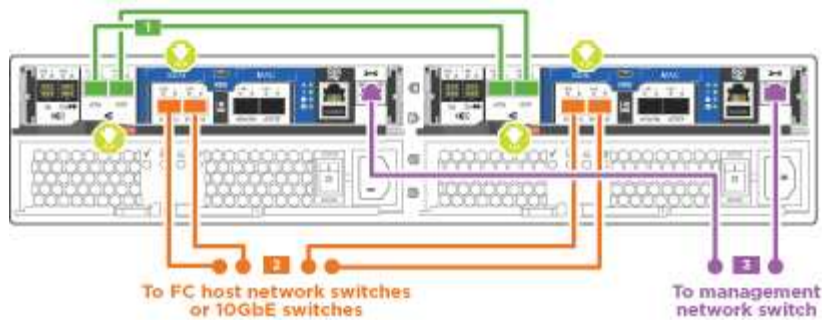


As you insert the connector, you should feel it click into place; if you do not feel it click, remove it, turn it around and try again.

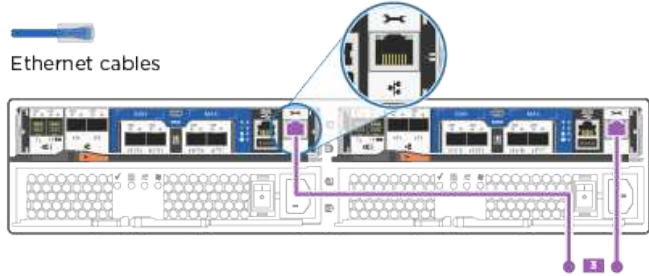



If connecting to an optical switch, insert the SFP into the controller port before cabling to the port.

1. Use the animation or the step-by step instructions to complete the cabling between the controllers and to the switches:



Step	Perform on each controller
<div data-bbox="183 510 245 548" data-label="Text">1</div>	<p data-bbox="621 510 1489 573">Cable the cluster interconnect ports to each other with the cluster interconnect cable:</p> <ul data-bbox="646 611 803 688" style="list-style-type: none"> • e0a to e0a • e0b to e0b <div data-bbox="776 716 1382 997" data-label="Diagram"> <p data-bbox="776 751 1024 772">Cluster interconnect cables</p> </div>
<div data-bbox="183 1071 245 1108" data-label="Text">2</div>	<p data-bbox="621 1071 1489 1134">Use one of the following cable types to cable the e0c/0c and e0d/0d or e0e/0e and e0f/0f data ports to your host network:</p> <div data-bbox="630 1199 1425 1304"> <div data-bbox="630 1199 820 1304"> <p data-bbox="630 1251 820 1304">Optical network cables</p> </div> <div data-bbox="889 1251 1166 1304"> <p data-bbox="889 1251 1057 1304">SFP for optical cables</p> </div> <div data-bbox="1224 1199 1425 1304"> <p data-bbox="1224 1251 1425 1304">10GbE network cables</p> </div> </div> <div data-bbox="630 1346 1425 1671" data-label="Diagram"> </div>

Step	Perform on each controller
3	<p>Cable the e0M ports to the management network switches with the RJ45 cables:</p> 
	DO NOT plug in the power cords at this point.

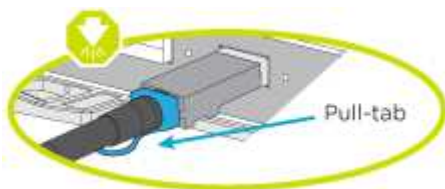
2. To complete setting up your system, see [Step4: Completing system setup and configuration](#).

Option 2: Cable switched cluster, unified configuration

UTA2 ports and management ports on the controller modules are connected to switches. The cluster interconnect ports are cabled to the cluster interconnect switches.

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.

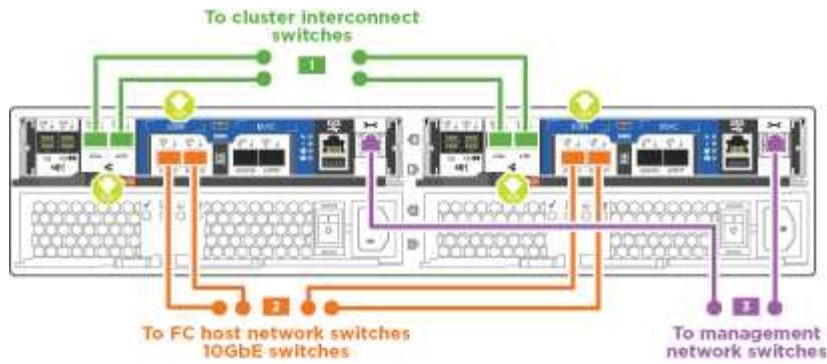


As you insert the connector, you should feel it click into place; if you do not feel it click, remove it, turn it around and try again.

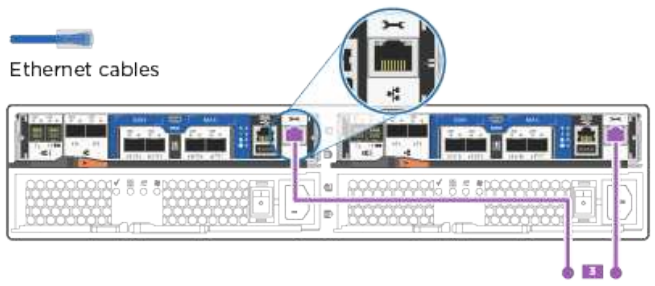



If connecting to an optical switch, insert the SFP into the controller port before cabling to the port.

1. Use the animation or the step-by step instructions to complete the cabling between the controllers and the switches:



Step	Perform on each controller module
<div data-bbox="183 541 248 583">1</div>	<p data-bbox="621 552 1492 615">Cable e0a and e0b to the cluster interconnect switches with the cluster interconnect cable:</p> <div data-bbox="735 678 1377 961"> <p data-bbox="735 720 995 741">Cluster interconnect cables</p> </div>
<div data-bbox="183 1045 248 1087">2</div>	<p data-bbox="621 1056 1492 1119">Use one of the following cable types to cable the e0c/0c and e0d/0d or e0e/0e and e0f/0f data ports to your host network:</p> <div data-bbox="630 1171 1425 1644"> <div data-bbox="630 1171 824 1276"> <p data-bbox="630 1224 824 1276">Optical network cables</p> </div> <div data-bbox="889 1213 1166 1276"> <p data-bbox="889 1224 1068 1276">SFP for optical cables</p> </div> <div data-bbox="1230 1171 1425 1276"> <p data-bbox="1230 1224 1425 1276">10GbE network cables</p> </div> </div> <div data-bbox="630 1318 1425 1644"> </div>

Step	Perform on each controller module
3	<p>Cable the e0M ports to the management network switches with the RJ45 cables:</p> 
	DO NOT plug in the power cords at this point.

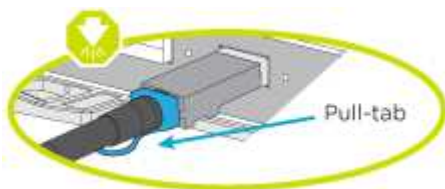
2. To complete setting up your system, see [Step4: Completing system setup and configuration](#).

Option 3: Cable a two node switchless cluster, Ethernet configuration

RJ45 ports and management ports on the controller modules are connected to switches. The cluster interconnect ports are cabled on both controller modules.

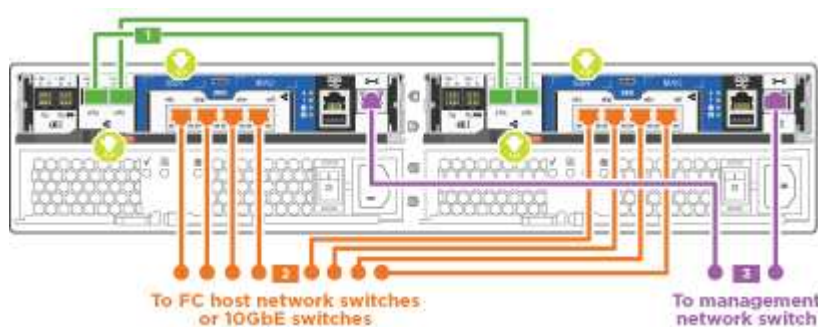
Contact your network administrator for information about connecting the system to the switches.


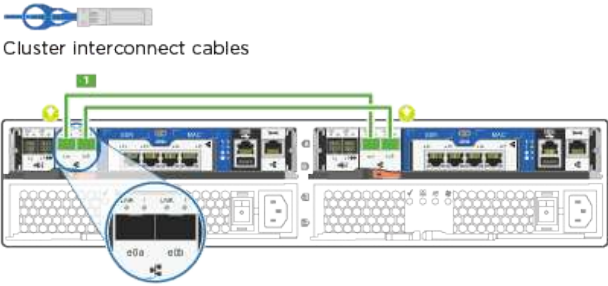
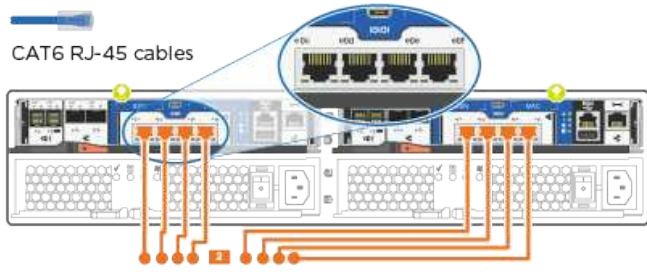

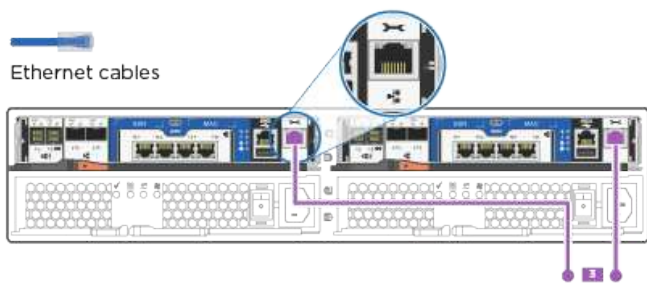

Be sure to check the illustration arrow for the proper cable connector pull-tab orientation.



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.

1. Use the animation or the step-by step instructions to complete the cabling between the controllers and to the switches:



Step	Perform on each controller
1	<p>Cable the cluster interconnect ports to each other with the cluster interconnect cable :</p> <ul style="list-style-type: none"> • e0a to e0a • e0b to e0b  <p>Cluster interconnect cables</p>
2	<p>Use the Cat 6 RJ45 cable to cable the e0c through e0f ports to your host network:</p>  <p>CAT6 RJ-45 cables</p>
3	<p>Cable the e0M ports to the management network switches with the RJ45 cables .</p>  <p>Ethernet cables</p>
	DO NOT plug in the power cords at this point.

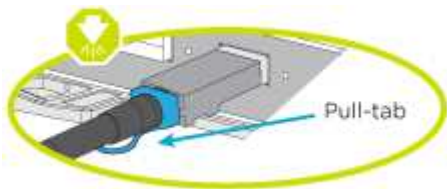
2. To complete setting up your system, see [Step4: Completing system setup and configuration](#).

Option 4: Cable a switched cluster, Ethernet configuration

RJ45 ports and management ports on the controller modules are connected to switches. The cluster interconnect ports are cabled to the cluster interconnect switches.

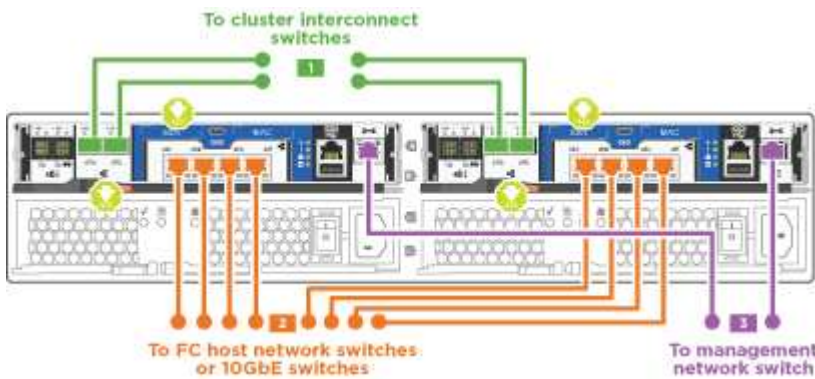
Contact your network administrator for information about connecting the system to the switches.

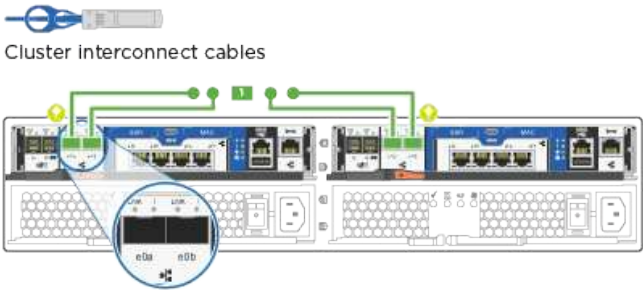
Be sure to check the illustration arrow for the proper cable connector pull-tab orientation.



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.

- 1. Use the animation or the step-by step instructions to complete the cabling between the controllers and the switches:



Step	Perform on each controller module
1	<p>Cable e0a and e0b to the cluster interconnect switches with the cluster interconnect cable:</p> <div></div>

Step	Perform on each controller module
<div data-bbox="183 155 245 197" data-label="Text">2</div>	<p data-bbox="621 159 1481 222">Use the Cat 6 RJ45 cable to cable the e0c through e0f ports to your host network:</p> <div data-bbox="732 289 1373 552" data-label="Image"> <p>The diagram shows two controller modules side-by-side. Orange lines represent CAT6 RJ-45 cables connecting the e0c, e0d, e0e, and e0f ports on each module to a common host network. A callout provides a close-up of the port labels.</p> </div>
<div data-bbox="183 627 245 669" data-label="Text">3</div>	<p data-bbox="621 632 1481 695">Cable the e0M ports to the management network switches with the RJ45 cables:</p> <div data-bbox="732 758 1373 1031" data-label="Image"> <p>The diagram shows two controller modules side-by-side. Purple lines represent Ethernet cables connecting the e0M ports on each module to management network switches. A callout provides a close-up of the e0M port.</p> </div>
<div data-bbox="183 1108 245 1178" data-label="Image"> </div>	<p data-bbox="621 1104 1182 1136">DO NOT plug in the power cords at this point.</p>

2. To complete setting up your system, see [Step4: Completing system setup and configuration](#).

Step 4: Complete system setup and configuration

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: Complete system setup and configuration 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.

1. Plug the power cords into the controller power supplies, and then connect them to power sources on different circuits.
2. Turn on the power switches to both nodes.



Initial booting may take up to eight minutes.

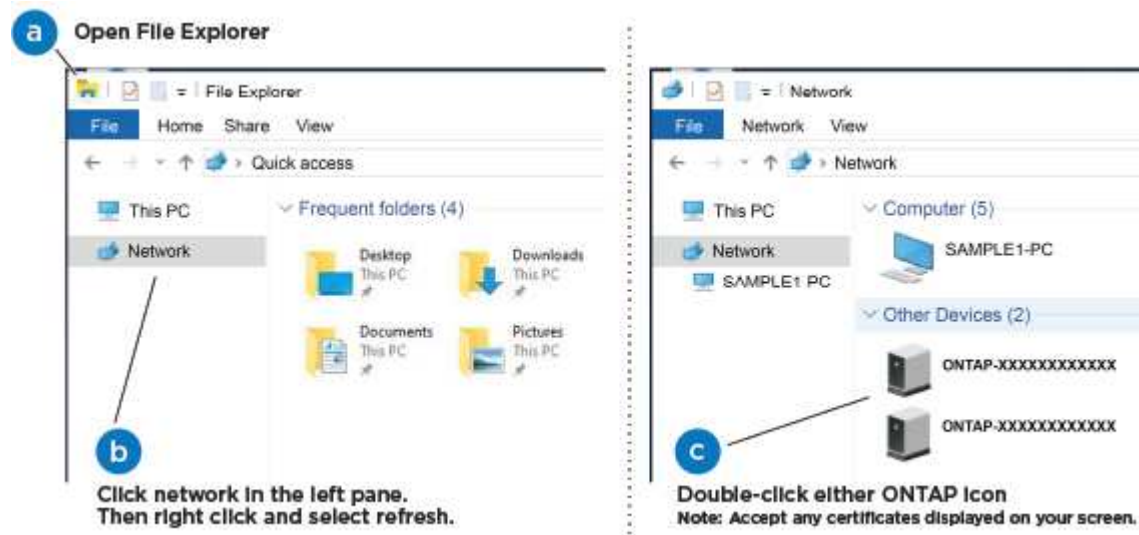
3. Make sure that your laptop has network discovery enabled.

See your laptop's online help for more information.

4. Use the following animation to connect your laptop to the Management switch.

[Connecting your laptop to the Management switch](#)

5. 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.

6. Use System Manager guided setup to configure your system using the data you collected in the *NetApp ONTAP Configuration Guide*.

[ONTAP Configuration Guide](#)

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.



The default port configuration for Unified configuration systems is CNA mode; if connecting to an FC host network, you have to modify the ports for FC mode.

Option 2: Complete system setup and configuration 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.

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 console cable to the laptop or console, and connect the console port on the controller using the console cable that came with your system.



- c. Connect the laptop or console to the switch on the management subnet.



- d. Assign a TCP/IP address to the laptop or console, using one that is on the management subnet.
2. Plug the power cords into the controller power supplies, and then connect them to power sources on different circuits.
3. Turn on the power switches to both nodes.



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	<ol style="list-style-type: none"> a. Open a console session using PuTTY, a terminal server, or the equivalent for your environment. <div style="display: flex; align-items: center; margin: 10px 0;"> <p>Check your laptop or console's online help if you do not know how to configure PuTTY.</p> </div> <ol style="list-style-type: none"> 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 [NetApp ONTAP Configuration Guide](#).

6. Verify the health of your system by running Config Advisor.

7. 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.



The default port configuration for Unified configuration systems is CNA mode; if connecting to an FC host network, you have to modify the ports for FC mode.

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