



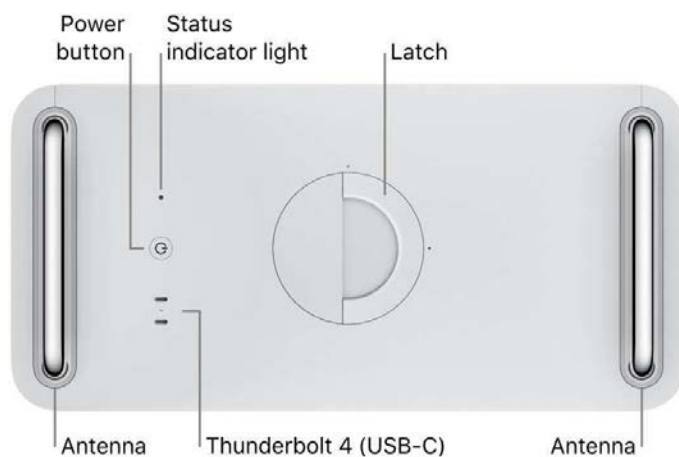
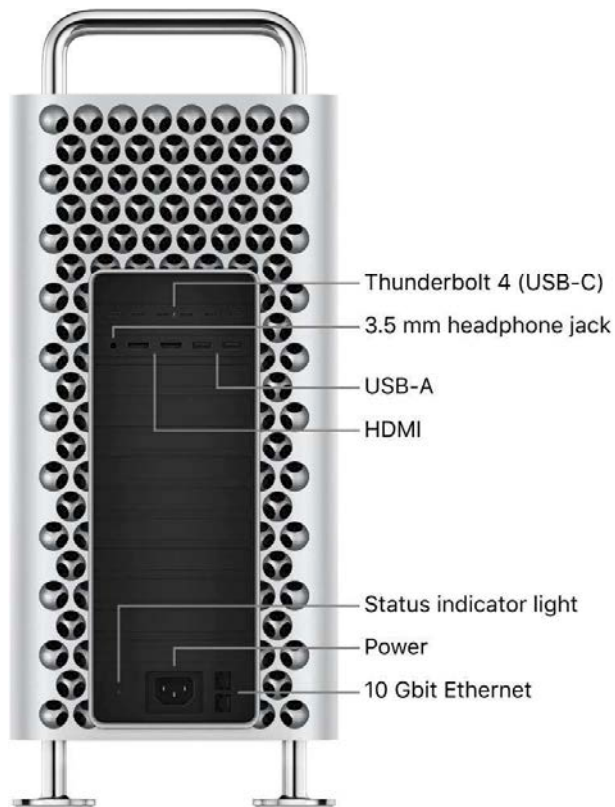
## Mac Pro Essentials

# Mac Pro at a glance

## Take a tour of Mac Pro

Your Mac Pro is equipped with advanced technologies.

*Note:* This tour is for Mac Pro with Apple silicon. If you have a Mac Pro rack workstation, see [Take a tour of Mac Pro \(Rack\)](#). If you have an Intel-based Mac Pro, see [Take a tour of Mac Pro](#).



- **Power button:** Press to turn on your Mac Pro. Press and hold for 10 seconds to force your Mac Pro to Shut Down. (You can also choose Apple menu  > Shut Down to turn off your Mac Pro, or Apple menu  > Sleep to put it to sleep.)
- **Thunderbolt 4 (USB-C) ports:** Mac Pro has two Thunderbolt 4 (USB-C) ports on the top and six ports on the back. Use these ports to transfer data, and connect displays, docking stations, and RAID arrays. The ports also support USB 4 with speeds up to 40 Gbit/s, and can charge devices, such as an iPad or a rechargeable keyboard, mouse, or trackpad. For more information about Thunderbolt 4 capabilities, see the Apple Support article [About the Apple Thunderbolt 4 Pro Cable](#).
- **3.5 mm headphone jack:** Plug in stereo headphones or external speakers to listen to your favorite music or movies. Use high-impedance headphones without a digital-to-analog converter or an amplifier.
- **HDMI ports:** Mac Pro has two HDMI ports. The ports can connect your Mac Pro to a TV or an external display.
- **USB-A (USB 3) ports:** Connect an iPhone, iPad, iPod touch, digital camera, external storage device, or printer. The Mac Pro USB-A ports support USB 3 and USB 2 devices at up to 5 Gbit/s.
- **Status indicator lights:** One light is on top of your Mac Pro and another is on the back, beside the power port. A steady white light indicates that your Mac Pro is awake or in sleep; no light indicates that your Mac Pro is turned off.

*Note:* If the housing is unlocked while your Mac Pro is on, the status light is solid amber for 0.3 seconds and repeats until the housing is locked. For more information, see the Apple Support article [Mac Pro status indicator light behavior](#).

- **Power port:** Plug the power cord into the power port on the back of your Mac Pro, then plug the other end of the cord into a power outlet.
- **10 Gigabit Ethernet (RJ-45) ports:** Your Mac Pro has two 10 Gigabit Ethernet ports that can use Nbase-T Ethernet technology, which supports multiple data rates for speeds up to 10 Gbit/s over standard twisted-pair copper cable up to 328 feet (100 meters) in length. Depending on the device you're connecting to, the cable type and technology used, and the cable length, the highest link speed is automatically negotiated. For example, if the device you're connecting to is 10 Gbit/s-capable and the cable can support that speed, the two devices negotiate the 10 Gbit/s speed.

See the following table for connection speeds and cable types. Speeds are for cables up to 328 feet (100 meters) in length, unless otherwise specified.

| Cable Type  | 1 Gbit/s | 2.5 Gbit/s | 5 Gbit/s | 10 Gbit/s               |
|-------------|----------|------------|----------|-------------------------|
| Category 5e | ✓        | ✓          | ✓        | Not supported           |
| Category 6  | ✓        | ✓          | ✓        | ✓ Up to 55 m (180 feet) |

| Cable Type  | 1 Gbit/s | 2.5 Gbit/s | 5 Gbit/s | 10 Gbit/s |
|-------------|----------|------------|----------|-----------|
| Category 6a | ✓        | ✓          | ✓        | ✓         |

## What's included

To use your Mac Pro, you need two accessories included in the box—the Magic Keyboard with Touch ID and Numeric Keypad and either the Magic Mouse or Magic Trackpad.

**Important:** To begin using your Magic Keyboard with Touch ID and Numeric Keypad and Magic Mouse or Magic Trackpad, make sure the on/off switch of each device is on  (so green is visible). The devices connect to your Mac Pro automatically.



- *Magic Keyboard with Touch ID and Numeric Keypad:* Your rechargeable Magic Keyboard with Touch ID and Numeric Keypad is already paired with your Mac Pro and is ready to use. When you need to charge the keyboard or if you need to connect it again, connect it to your Mac Pro using the included USB-C to Lightning Cable.

To customize how your keyboard works, go to System Settings, click Keyboard in the sidebar, then choose the settings on the right for keyboard, text, shortcuts, and input sources. To learn what the function keys on the keyboard do, see [Magic Keyboard with Touch ID and Numeric Keypad](#).

- *Magic Mouse:* Like the Magic Keyboard with Touch ID and Numeric Keypad, your rechargeable Magic Mouse is already paired with your Mac Pro out of the box; you can use it anywhere within range of your computer. When you need to charge the mouse or if you need to connect it again, connect it to your Mac Pro using the included USB-C to Lightning Cable.

To customize your gestures, go to System Settings, then click Mouse in the sidebar to see all the scrolling, clicking, swiping, and tapping options.

- *Magic Trackpad:* If you configured your Mac Pro with the Magic Trackpad, it comes paired with your Mac Pro and is ready to use out of the box; you can use it anywhere within range of your computer. When you need to charge the trackpad or if you need to connect it again, connect it to your Mac Pro using the included USB-C to Lightning Cable.

To customize your gestures, go to System Settings, then click Trackpad in the sidebar to see all the Point & Click, Scroll & Zoom, and More Gestures options.

If you purchased a Magic Mouse or Magic Trackpad separately, connect it to your Mac Pro with the included USB-C to Lightning Cable to use Bluetooth. Use this same cable to charge your devices as necessary, then unplug them and use them in the location that works best for you.

## Use Bluetooth accessories

### Connect Bluetooth accessories to your Mac Pro

Using Bluetooth® technology, your Mac Pro can wirelessly connect with devices such as the Magic Keyboard, Magic Mouse, Magic Trackpad, AirPods, peripheral devices, wearable sport accessories, and more.

**Pair a Bluetooth device.** Before you connect a Bluetooth device with your Mac for the first time, you need to pair them. In order to pair your Mac with a Bluetooth device, make sure they are both turned on and near each other. Be sure to review your Bluetooth device's documentation to make sure you've set up the device to pair.

Some included accessories may already be paired with your Mac Pro. For more information about accessories, see [What's included](#).

**Turn Bluetooth on or off.** Click the Control Center icon  in the menu bar, click the Bluetooth icon , then click the control to turn Bluetooth on or off. Your Mac Pro comes with Bluetooth turned on.

 **Tip:** If you don't see the Bluetooth icon  in the menu bar, you can add it. In System Settings, click Control Center in the sidebar, then go to Bluetooth on the right and choose Show in Menu Bar.

**Connect a Bluetooth device.** Turn on the device so that it's discoverable, then open System Settings and click Bluetooth. Select the device in the list, then click Connect next to it. The device remains connected until you remove it. Control-click a device name to remove it.

When a Bluetooth device is paired with your Mac, you can connect or disconnect it using the Bluetooth  icon in the menu bar.

*Note:* Your Magic Keyboard with Touch ID and Numeric Keypad and the optional Magic Trackpad behave like a wired keyboard and pointing device when connected using the included USB-C to Lightning Cable. Bluetooth isn't used, and all communication is over the cable.

**Learn more.** See [Use Bluetooth devices with Mac](#) in the macOS User Guide.

### Magic Keyboard with Touch ID and Numeric Keypad

The Magic Keyboard with Touch ID and Numeric Keypad has built-in features that make it easy to enter emoji, switch keyboard languages, lock your Mac Pro, and perform many system functions with the touch of a key. You can also use a fingerprint to sign in and make purchases using Apple Pay.



**Turn the keyboard on or off.** Slide the on/off switch on the back edge of the keyboard to turn it on  (so green is visible) or off. If your keyboard isn't recognized by your Mac Pro, connect it to your Mac Pro with the included USB-C to Lightning Cable to set it up, then disconnect the cable to use it wirelessly. Use the same cable to charge your keyboard.

**Lock your Mac Pro.** Quickly press Touch ID. To unlock your Mac Pro, lightly touch Touch ID, or press any key and type your password.

**Set up Touch ID.** You can use your fingerprint to unlock your Mac and make purchases from the App Store, Apple TV app, and Apple Books, and on websites using Apple Pay. If you don't set up Touch ID when you set up your Mac, you can do it later in the Touch ID & Password settings in System Settings. For more information about Touch ID, see [Set up your Mac Pro](#). For information about Apple Pay, see [Use Apple Pay on your Mac](#).

**Use Touch ID.** Place your finger lightly on Touch ID. When you first start up or restart your Mac, you need to type your password to log in to your Mac Pro. After that, whenever you're asked for your password to unlock the screen or make purchases, you can use Touch ID. You can also use your fingerprint to switch from another user's account to your own if you set up fast user switching for your Mac Pro. For more information, see [Use Touch ID on Mac](#) in the macOS User Guide.

**Set keyboard settings.** To specify options for your keyboard and the Function (Fn)/Globe key , open System Settings, click Keyboard in the sidebar, and choose options to change your keyboard or input source, show emoji and symbols, start dictation, or define functions.

**Use emoji or switch keyboard languages.** Press  to switch to a different keyboard. Press  repeatedly to cycle through emoji options or other languages you specify in Keyboard settings, or press twice quickly to start dictation (if you set that preference). On Magic Keyboard with Touch ID the key is in the bottom-left corner, and on Magic Keyboard with Touch ID and Numeric Keypad, it's to the right of the Delete key.

**Use function keys.** The function keys on the top row provide shortcuts for these common system functions:

- **Brightness keys (F1, F2):** Press  or  to increase or decrease the brightness of the screen.

*Note:* Brightness keys can only be used on Apple Studio Display, Apple Pro Display XDR, and supported displays.

- **Mission Control key (F3):** Press  to view what's running on your Mac Pro, including all your spaces and open windows.
- **Spotlight Search (F4):** Press  to open Spotlight and search for something on your Mac.
- **Dictation/Siri (F5):** Press  to activate dictation—you can dictate text wherever you can type (for example, in Messages, Mail, Pages, and other apps). Press and hold  to activate Siri, then immediately speak your request.
- **Do Not Disturb (F6):** Press  to turn Do Not Disturb on or off. When Do Not Disturb is on, you won't see or hear notifications on your Mac, but you can view them in Notification Center.
- **Media (F7, F8, F9):** Press  to rewind,  to play or pause, or  to fast-forward a song, movie, or slideshow.
- **Mute (F10):** Press  to mute the system sound.
- **Volume (F11, F12):** Press  or  to decrease or increase the system sound volume.

**Use alternate functions.** Function keys may perform actions for specific apps or may have alternative functions—for example, the F11 key can also hide all open windows and show the desktop. To trigger the alternative function associated with the key, press and hold the Fn key while you press a function key.

**Use keyboard shortcuts.** You can press two or more keys at the same time to quickly do things on your Mac Pro that you'd normally do with a trackpad, mouse, or other device. For example, press Command-C to copy selected text, then click where you want to paste the text and press Command-V. For a list of commonly used keyboard shortcuts, see [Keyboard shortcuts on your Mac](#). If you're new to the Mac, you might also be interested in [Are you new to Mac?](#)

## Magic Mouse

You can use Magic Mouse anywhere within range of your computer. When you need to charge the mouse or if you need to pair it again, connect it to your Mac Pro using a USB-C to Lightning Cable or Lightning to USB Cable.

Here are some common gestures you can use with your Magic Mouse.

| Gesture                                                                             | Action                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>Turn on/off:</b> Slide the on/off switch  on the bottom of the mouse to turn it on (so green is visible). |
|  | <b>Click:</b> Press the upper surface of the mouse to click or double-click.                                                                                                                     |

| Gesture                                                                           | Action                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>Secondary click (that is, right-click):</b> Press the left or right side of the mouse to perform a “secondary click.” (To enable right- and left-click, in System Settings, click Mouse, then select “Secondary click.”) Or press the Control key on the keyboard as you click the mouse. |
|  | <b>360° scroll:</b> Brush one finger along the surface to scroll or pan in any direction.                                                                                                                                                                                                    |
|  | <b>Screen zoom:</b> Hold down the Control key and scroll with one finger to enlarge items on the screen. (To enable screen zoom, in System Settings, click Accessibility, click Zoom, then select “Use scroll gesture with modifier keys to zoom.”)                                          |
|  | <b>Two-finger swipe:</b> Swipe left or right to move through pages, photos, and more.                                                                                                                                                                                                        |

**Customize your mouse.** To adjust settings such as tracking and scrolling speed, and to enable or customize gestures, click Mouse in System Settings.

## Magic Trackpad

You can do a lot on your Mac Pro using simple trackpad gestures—scroll through webpages, zoom in on documents, rotate photos, and more. With the Force Touch trackpad, pressure-sensing capabilities add another level of interactivity. The trackpad provides feedback—when you drag or rotate objects, you feel a subtle vibration when they’re aligned, allowing you to work with greater precision. For examples of force click options, see the Apple Support article [How to use the Force Touch trackpad](#).

Here are some common gestures:

| Gesture                                                                             | Action                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>Click:</b> Press anywhere on the trackpad. Or enable “Tap to click” in Trackpad settings, and simply tap.                                                                                                                   |
|  | <b>Force click:</b> Click and then press deeper. You can use force click to look up more information—click a word to see its definition, or an address to see a preview that you can open in Maps.                             |
|  | <b>Secondary click (that is, right-click):</b> Click with two fingers to open shortcut menus. If “Tap to click” is enabled, tap or click with two fingers. Or press the Control key on the keyboard as you click the trackpad. |

| Gesture                                                                           | Action                                                                                                                                      |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>Two-finger scroll:</b> Slide two fingers up or down to scroll.                                                                           |
|  | <b>Pinch to zoom:</b> Pinch your thumb and finger open or closed to zoom in or out of photos and webpages.                                  |
|  | <b>Swipe to navigate:</b> Swipe left or right with two fingers to flip through webpages, documents, and more—like turning a page in a book. |
|  | <b>Open Launchpad:</b> Quickly open apps in Launchpad. Pinch closed with four or five fingers, then click an app to open it.                |
|  | <b>Swipe between apps:</b> To switch from one full-screen app to another, swipe left or right with three or four fingers.                   |

**Customize your gestures.** In System Settings, click Trackpad. In Trackpad settings you can:

- Learn more about each gesture
- Set the click pressure you prefer to use
- Decide whether to use pressure-sensing features
- Customize other trackpad features

 **Tip:** If you're force clicking when you don't intend to, try adjusting the click pressure to a firmer setting in Trackpad settings. Or change the "Look up and data detectors" option from the "Force Click with one finger" default setting to "Tap with three fingers."

## Charge the batteries in wireless accessories

The Magic Keyboard, Magic Mouse, and Magic Trackpad each have a built-in rechargeable battery.

**Check the battery level.** Click the Control Center icon  in the menu bar, click the Bluetooth icon , then choose the device.

**Charge the battery.** Connect your Magic Keyboard, Magic Mouse, or Magic Trackpad to your Mac or any USB power source with a USB-C to Lightning Cable or Lightning to USB Cable.

 **Tip:** To charge the battery faster, be sure your input device is turned on when you connect it to your Mac Pro.

**Learn more.** See [Disposal and recycling information](#) or visit [Apple Lithium-ion Batteries](#).

## Use adapters with your Mac Pro

The following Apple adapters are available to connect external devices, displays, and more to the Thunderbolt 4 (USB-C) ports on your Mac Pro. For more information about Thunderbolt 4 capabilities, see the Apple Support article [About the Apple Thunderbolt 4 Pro Cable](#).

| Adapter                                                                             | Description                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <b>Thunderbolt 3 (USB-C) to Thunderbolt 2 Adapter:</b> Connect your Mac Pro to Thunderbolt 2 devices or a Thunderbolt display.                                                                                         |
|    | <b>USB-C Digital AV Multiport Adapter:</b> Connect your Mac Pro to an HDMI device, while also connecting a standard USB device. You may need this adapter if you have already used the two HDMI ports on your Mac Pro. |
|    | <b>USB-C VGA Multiport Adapter:</b> Connect your Mac Pro to a VGA projector or display, while also connecting a USB device to your Mac Pro.                                                                            |
|    | <b>USB-C to USB-A Adapter:</b> Use a USB-C port to connect your Mac Pro to a USB-A device. You may need this adapter if you have already used the two USB-A ports on your Mac Pro.                                     |
|  | <b>USB-C to SD Card Reader:</b> Insert an SD card to transfer high-resolution photos and videos to your Mac Pro.                                                                                                       |

**Learn more.** For a full list of suitable adapters, see the Apple Support article [Adapters for the Thunderbolt 4, Thunderbolt 3, or USB-C port on your Mac](#).

Adapters and other accessories are sold separately. Visit [apple.com](#), your local Apple Store, or other resellers for more information and availability. Review the documentation or check with the manufacturer to make sure you choose the right product.

## Connect a display to Mac Pro



The Thunderbolt 4 ports ⚡ and the HDMI port on Mac Pro support video output, so you can connect external displays, projectors, or HDTVs to these ports.

## Before you begin

Check the documentation that came with your display to see which port you should use: HDMI, Thunderbolt, or either one. Also, make sure you have the correct cable to connect your display.

When you connect a display, you can select a resolution and refresh rate (Hz) for that display. If you increase the refresh rate for your display, you should select a lower resolution for best performance. Use Displays settings in System Settings to adjust the refresh rate and resolution of your display. For more information, see [Change your Mac display's resolution](#) in the macOS User Guide.

If you're not sure how many external displays your Mac Pro supports, check your Technical Specifications. Open System Settings, then choose Help > Mac Pro Specifications.

## Connect displays to Mac Pro

Make sure your Mac Pro and display are both connected to power, then connect your devices using the proper cable and ports. See the Apple Support article [If your external display is dark or low resolution](#).

You can connect up to eight external displays to your Mac Pro in many different configurations, such as:

- Connect two external displays with up to 8K resolution at 60 Hz using the HDMI ports.
- Connect two external displays with up to 4K resolution at 240 Hz using the HDMI ports.
- Connect three external displays with up to 6K resolution at 60 Hz using the Thunderbolt ports.
- Connect three external displays with up to 4K resolution at 120 Hz or 144 Hz using the Thunderbolt ports.
- Connect eight external displays with up to 4K resolution at 60 Hz using the Thunderbolt ports.

 **Tip:** When connecting multiple displays, connect the display with the highest resolution first.

For more information about the display configurations for your Mac Pro, see Apple Support article [How many displays can you connect to Mac Pro](#).

To learn more about using an 8K display with your Mac Pro, see the Apple Support article [Use an 8K display with your Mac](#).

## What cable do I need?

If your display has a connector that doesn't match the port you want to use, you may be able to use it with an adapter (sold separately). Visit [apple.com](#), your local Apple Store, or other resellers for more information and availability. Review the display's documentation or check with the display's manufacturer to make sure you choose the right adapter. See the Apple Support article [Adapters for the Thunderbolt 4, Thunderbolt 3, or USB-C port on your Mac](#).

| To connect this device to Mac Pro       | Use a cable, or an adapter and cable                                                                                                                                   |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Apple Studio Display                    | The Thunderbolt cable that came with your display or any Thunderbolt 3 (USB-C) or Thunderbolt 4 (USB-C) cable                                                          |
| Apple Pro Display XDR                   | The Thunderbolt cable that came with your display or any Thunderbolt 3 (USB-C) or Thunderbolt 4 (USB-C) cable                                                          |
| Thunderbolt 3 (USB-C) display           | Thunderbolt 3 (USB-C) cable                                                                                                                                            |
| USB-C display                           | USB-C cable                                                                                                                                                            |
| HDMI display or HDTV                    | The HDMI cable that came with your display or HDTV or any supported HDMI cable. (Higher resolution displays may require 8K/4K compliant ultra high-speed HDMI cables.) |
| Thunderbolt 2 display                   | Thunderbolt 3 (USB-C) to Thunderbolt 2 adapter and the cable that came with your Thunderbolt 2 display                                                                 |
| VGA display or projector                | USB-C VGA Multiport adapter and the cable that came with your display or projector                                                                                     |
| DisplayPort or Mini DisplayPort display | USB-C to DisplayPort cable, or DisplayPort or Mini DisplayPort adapter and the cable that came with your display                                                       |
| DVI display or projector                | USB-C to DVI adapter and the cable that came with your display or projector                                                                                            |

**Adjust and arrange displays.** After you connect a display or projector, use Displays settings in System Settings to turn screen mirroring on or off, arrange and manage multiple displays, and make other adjustments to color, resolution, and more. See [Connect one or more external displays with your Mac](#) in the macOS User Guide.

 **Tip:** If you have an HDTV connected to an Apple TV, you can use AirPlay to mirror your screen in up to 1080p HD. See [Use AirPlay on your Mac](#) for details.

Subscription required for Apple TV+.

# Pro Display XDR

## Connect Apple Pro Display XDR



**Retina 6K resolution.** Pro Display XDR is a 32-inch LCD display with Retina 6K resolution.

**Extreme Dynamic Range.** Extreme Dynamic Range (XDR) takes brightness and contrast to the extreme, surpassing what is considered standard dynamic range (SDR) and high dynamic range (HDR).

**1000 nits of brightness.** Pro Display XDR can sustain 1000 nits of brightness across the full screen. This means that a pro can edit an HDR photograph or video with the entire frame at 1000 nits of brightness, indefinitely. It also has a peak brightness of 1600 nits.

**1,000,000:1 contrast ratio.** A contrast ratio of 1,000,000:1 provides an incredible range of contrast, which along with extreme brightness, better replicates what the eye can see in real life.

**P3 wide color.** A P3 wide color gamut provides users with a vibrant, true-to-life color palette.

**10-bit depth.** Pro Display XDR also features true 10-bit color depth, with the ability to produce more than a billion colors.

**Super-wide viewing angle.** Polarizer technology reduces light leakage 25x off-axis versus a typical LCD display, providing accurate viewing from any angle.

**Reference modes.** Pro Display XDR has several reference modes that tailor the display's color, brightness, gamma, and white point to match the reference requirements for each media type, including several predefined reference modes for High Dynamic Range, HD, and SD video-digital cinema. There are also modes for broader use cases such as photography, internet and web development, and design and print. For more information, see the Apple Support article [Use reference modes with your Apple display](#).

**True Tone technology.** The lighting around you can affect the way you see onscreen colors. True Tone on Pro Display XDR uses a breakthrough dual ambient light sensor design—a sensor on the front and another on the back—to better gauge your overall lighting environment. This allows more exact adjustments to the color and intensity of your display, so you can have accurate viewing in all lighting conditions. For more information, see [Change Displays settings on Mac](#) in the macOS User Guide.

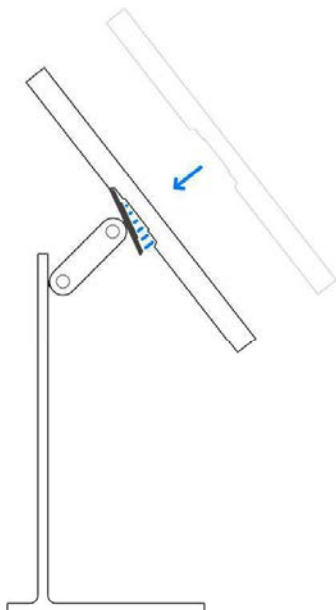
*Note:* The Pro Display XDR undergoes a state-of-the-art factory display calibration process on the assembly line to ensure the accuracy of the P3 wide color panel and the individual backlight LEDs. Color professionals who use a workflow tuned to a particular calibration instrument can recalibrate the Pro Display XDR. See [Customize the calibration of your Apple Pro Display XDR or Apple Studio Display](#) in the macOS User Guide.

Subscription required for Apple TV+.

## Attach Pro Display XDR to Pro Stand

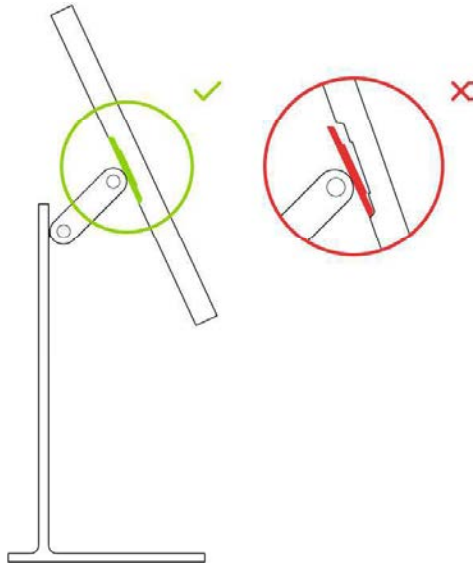
Follow these steps to attach Apple Pro Display XDR to Pro Stand.

1. Position the display over Pro Stand. Hold the display with the top tilted back slightly, a few degrees past the magnetic connector.



2. Lower the display onto the connector. When close, the display magnetically attaches to the stand. If placed correctly, the display locks into place.

**Important:** With both hands on the display, confirm that it's attached before releasing.

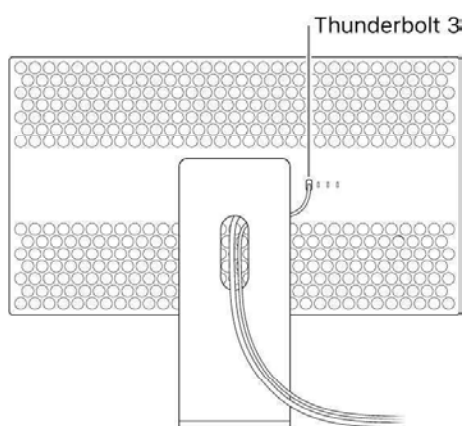


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## Plug in Pro Display XDR

Pro Display XDR automatically turns on when you plug it into power and connect it to your Mac using the included Thunderbolt 3 Pro Cable.

Route the cables through the opening in Pro Stand, ensuring that the Thunderbolt 3 Pro Cable is plugged into the Thunderbolt 3 port ⚡ on Pro Display XDR.



 **Tip:** If the display doesn't turn on the first time, try unplugging it from the computer and plugging it back in. If that doesn't work, unplug the Pro Display XDR from its power source and then plug it in again.

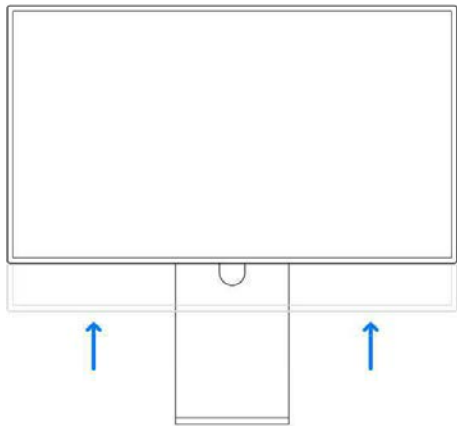
## Detach Pro Display XDR from Pro Stand

Follow these steps to detach Apple Pro Display XDR from Pro Stand.

**Important:** Detach the display from the stand whenever you move or transport the display.

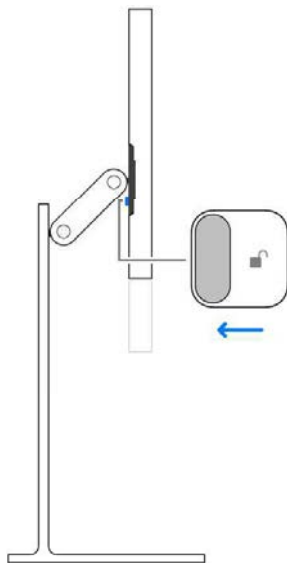
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1. Before detaching the display from the stand, move the display to the highest position.

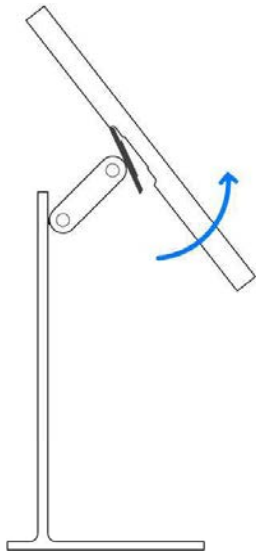


2. Unlock the slider on the magnetic connector.

**Important:** The slider won't unlock unless the display is in the highest position.



3. Tilt the display back and lift it from the magnetic connector.



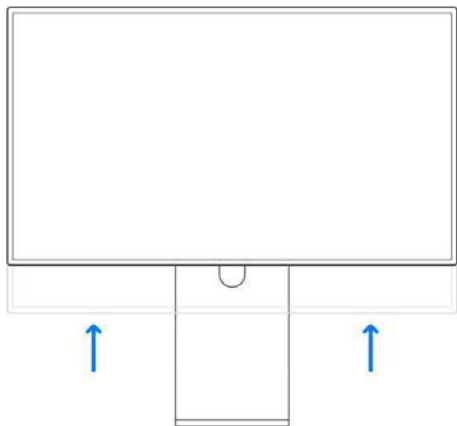
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## Rotate Pro Display XDR on Pro Stand

Follow these steps to rotate Apple Pro Display XDR on Pro Stand.

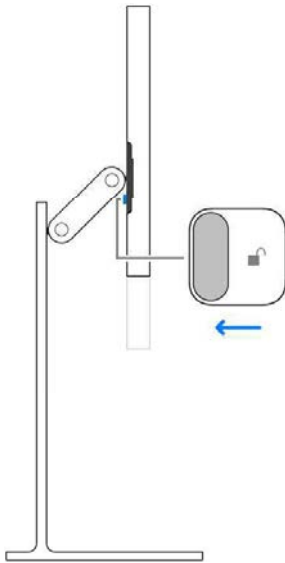
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1. Before rotating the display, move it to the highest position.

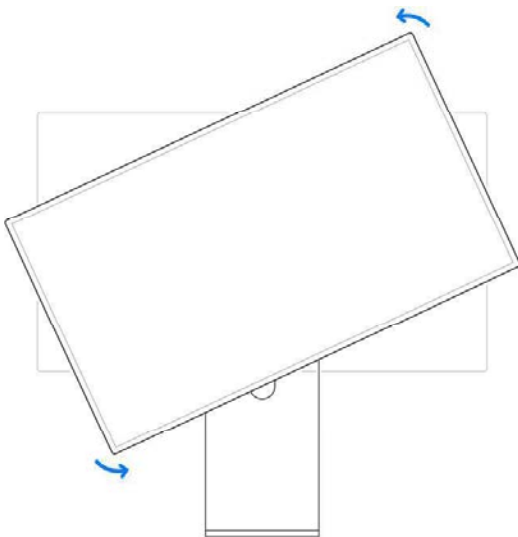


2. Unlock the slider on the magnetic connector.

**Important:** The slider won't unlock unless the display is in the highest position.



3. Rotate the display counterclockwise. When it reaches portrait orientation, the display automatically locks.



4. To rotate to landscape orientation, repeat step 2, then rotate the display clockwise.

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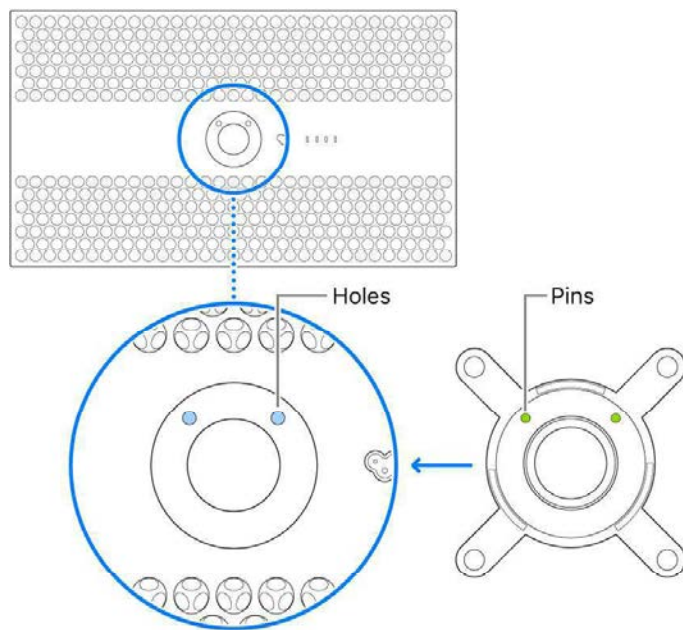
## Attach Pro Display XDR to a VESA Mount Adapter

Follow these steps to attach Apple Pro Display XDR to a VESA Mount Adapter.

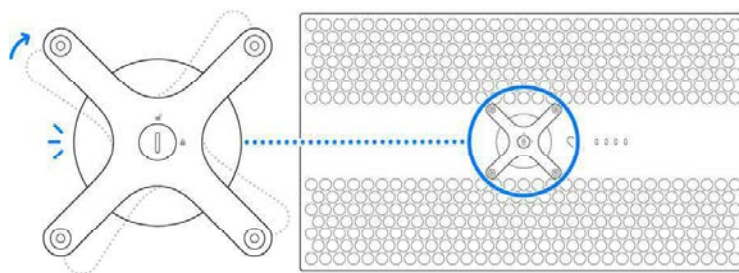
**Important:** Make sure the VESA mounting solution and installation method (type of bolt or bracket) are sufficient to handle the weight of the Pro Display XDR (up to 16.5 lbs/7.5 kg).

**Important:** Select a mounting location where Pro Display XDR will be free from accidental impact; don't mount Pro Display XDR so that it faces downward (for example, on the ceiling).

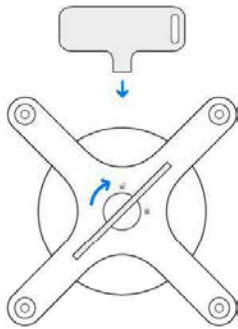
1. Place the display face down on a soft cloth to avoid scratching the glass.
2. Confirm that the pins on the back of the VESA Mount Adapter (illustrated in green) align with the holes in the display inset (illustrated in blue).



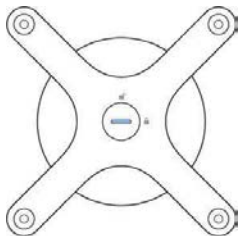
3. After the adapter is aligned in the inset on the back of the Pro Display XDR, rotate the adapter slightly in either direction, until the pins click into place. The lock is in the vertical position.



4. Use the key provided to turn the lock clockwise to secure the adapter.



5. When the display is properly mounted, the lock is in the horizontal position.



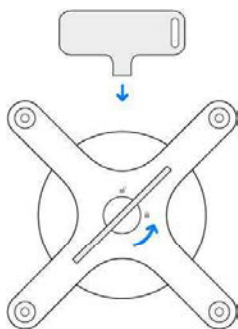
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## Detach Pro Display XDR from a VESA Mount Adapter

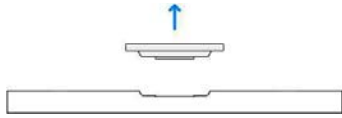
Follow these steps to detach Apple Pro Display XDR from a VESA Mount Adapter.

---

1. Use the key provided to turn the lock counterclockwise.



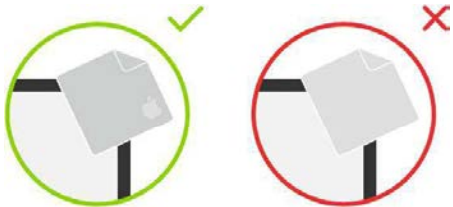
2. Remove the adapter from Pro Display XDR.



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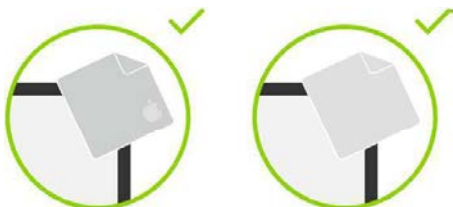
## Clean Pro Display XDR

If your Apple Pro Display XDR has nano-texture glass, clean it only using the included polishing cloth. See the Apple Support article [How to clean the nano-texture glass on your Apple display](#). For additional cloths, visit [apple.com](#), your local Apple Store, or other resellers.



*Note:* For infrequent cleaning of hard-to-remove substances on nano-texture glass or standard glass, you can use a 70% Isopropyl Alcohol (IPA) solution.

If your Pro Display XDR has standard glass, clean it using the included polishing cloth or a microfiber cloth and water.



# Customize your Mac Pro

## Configure your Mac Pro

You can configure the expansion cards and SSD Modules in your Mac Pro. You can also use the internal USB-A port and internal SATA ports to connect accessories.

*Note:* If you have a Mac Pro rack workstation, see [Configure your Mac Pro \(Rack\)](#).

| Component                   | Configuration options*                                                   |
|-----------------------------|--------------------------------------------------------------------------|
| PCI Express expansion cards | 7 expansion slots                                                        |
| SSD Modules                 | 1 TB (1 x 1 TB)<br>2 TB (1 x 2 TB)<br>4 TB (2 x 2 TB)<br>8 TB (2 x 4 TB) |

**WARNING:** To avoid damaging internal components or the components you want to install, always turn off and then unplug your Mac Pro. Don't attempt to open the computer or install items while it's plugged in.

Your Mac Pro also has an internal USB-A port and 2 internal SATA ports. The internal USB-A port can be used to connect accessories and supports USB 3 and USB 2 devices at up to 5 Gbit/s. The internal SATA ports can support third-party accessories.

\* Subject to availability.

## Install Expansion Cards on Mac Pro

You can configure your Mac Pro by installing additional cards in the PCI Express expansion slots.

All slots are connected through a PCI Express switch on the Mac Pro main logic board. PCI Express switch bandwidth is automatically configured through pool allocations. You can use the Expansion Slot Utility to manually configure pool allocations. For more information about the Expansion Slot Utility, see the Apple Support article [Install PCIe cards in your Mac Pro](#).

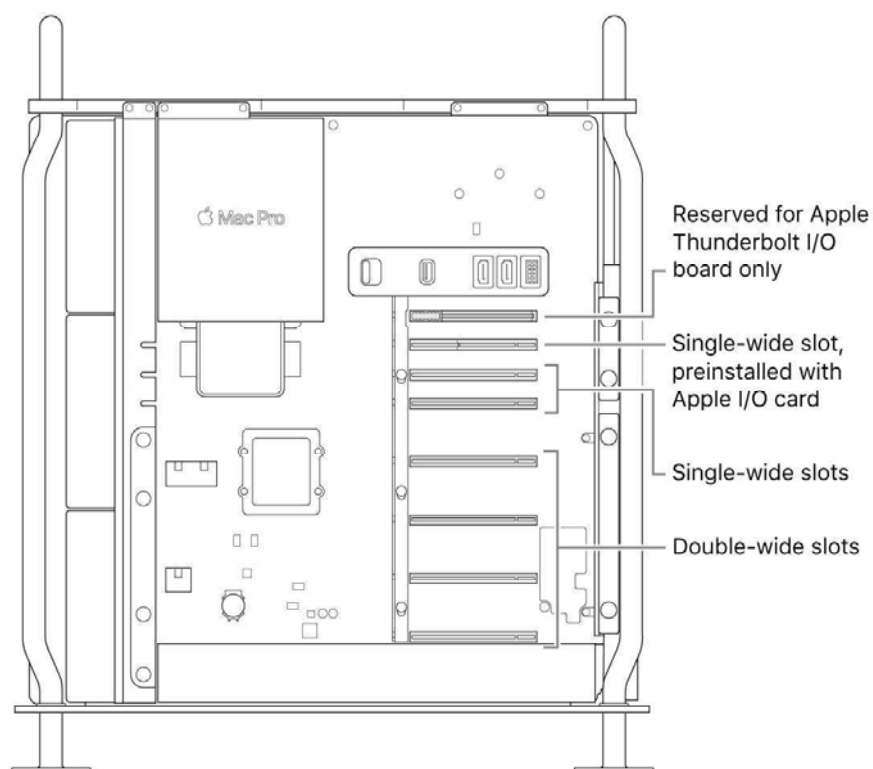
For optimal performance, use any slot that has at least as many lanes as the card in use. See the table below for details.

MPX Modules from the Intel-based Mac Pro are not supported in Mac Pro with Apple silicon.

*Note:* If you have a Mac Pro rack workstation, see [Install Expansion Cards in Mac Pro \(Rack\)](#).

| Slot   | Number of lanes                           | Supported PCI Express performance |
|--------|-------------------------------------------|-----------------------------------|
| Slot 7 | x4 (Preinstalled with the Apple I/O card) | PCIe 3.0                          |
| Slot 6 | x8                                        | PCIe 4.0                          |
| Slot 5 | x8                                        | PCIe 4.0                          |
| Slot 4 | x8                                        | PCIe 4.0                          |
| Slot 3 | x8                                        | PCIe 4.0                          |
| Slot 2 | x16                                       | PCIe 4.0                          |
| Slot 1 | x16                                       | PCIe 4.0                          |

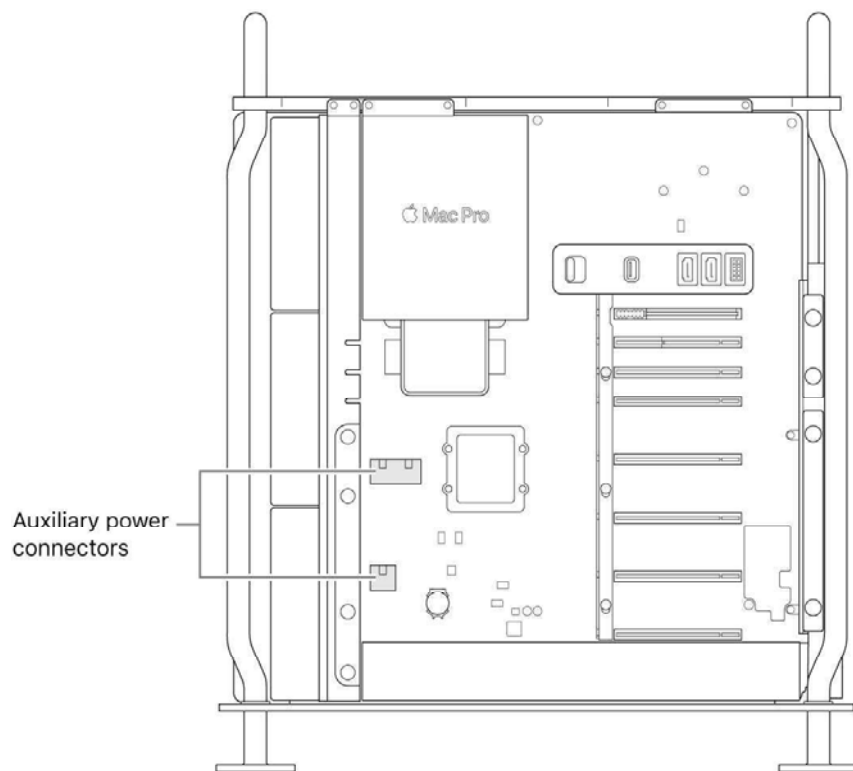
Mac Pro has four double-wide slots and three single-wide slots, which can be customized with cards to expand Mac Pro capabilities. Slot 7 is preinstalled with the Apple I/O card, but this card can be removed in order to install other PCIe cards.



**WARNING:** For optimum ventilation, space cards out as you install them. If you remove a card and don't install a replacement, place a port access cover over the empty slot to keep foreign objects out of the enclosure. An uncovered slot may cause damage by affecting the airflow that cools the internal components.

**Important:** Connect cards to the appropriate power source, as illustrated below. Only use cables sold online at [apple.com](https://apple.com) or at an Apple Store, or cables that come with compatible third-party PCIe cards.

Take care when connecting to the AUX connectors. When installing an accessory into your system that uses AUX power, first attach the AUX connector, then install the module. Be careful not to drop the module while connected to the AUX connector, as doing so may result in damage to the AUX connector or logic board. If the AUX connector becomes damaged, don't turn on your computer because doing so may further damage it. For more information about repairing your Mac Pro, see [Important safety information for your Mac](#).



---

Follow these steps to install expansion cards in your Mac Pro.

1. Turn off your Mac Pro by choosing Apple menu  > Shut Down.

Let it cool down for 5 to 10 minutes before you touch the internal components, which may be hot.

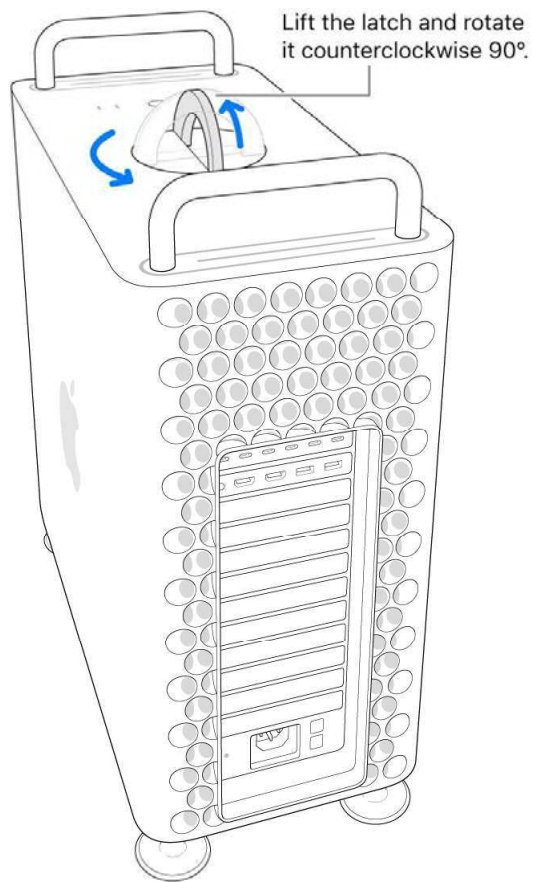
2. Disconnect all cables except the power cord from your Mac Pro.

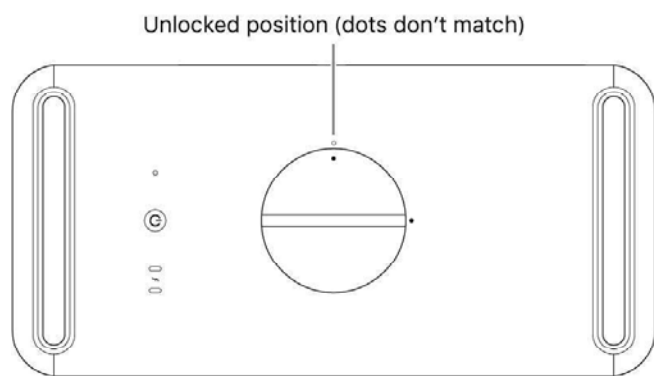
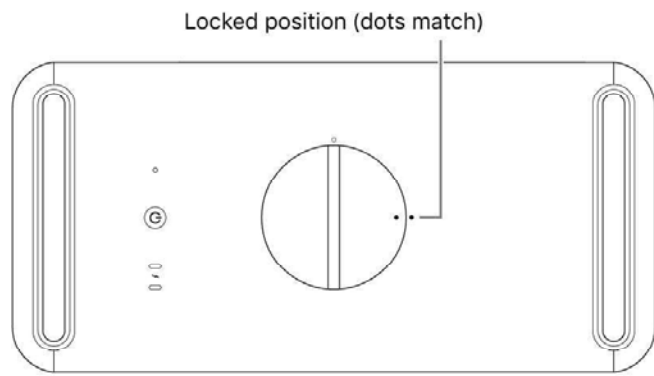
3. Touch the metal on the outside of your Mac Pro to discharge any static electricity.

*Note:* Always discharge static before you touch parts or install components inside your Mac Pro. To avoid generating static, don't walk around the room until you finish installing the expansion cards.

4. Disconnect the power cord.
5. Unlock the computer's housing by rotating the latch counterclockwise 90 degrees.

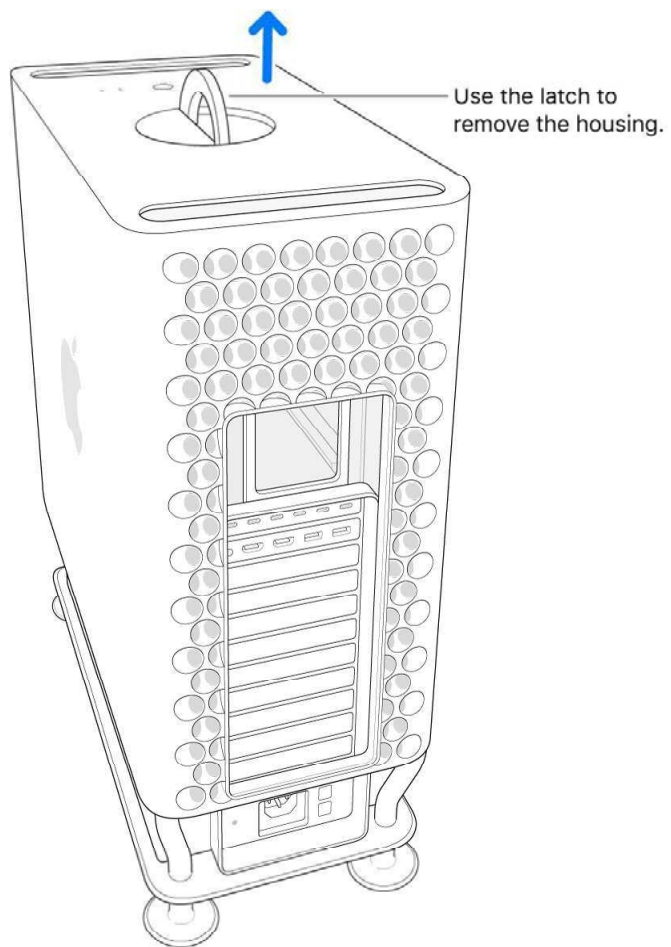
**WARNING:** Do not rotate the latch while the computer is turned on; doing so may cause the computer to shut down.





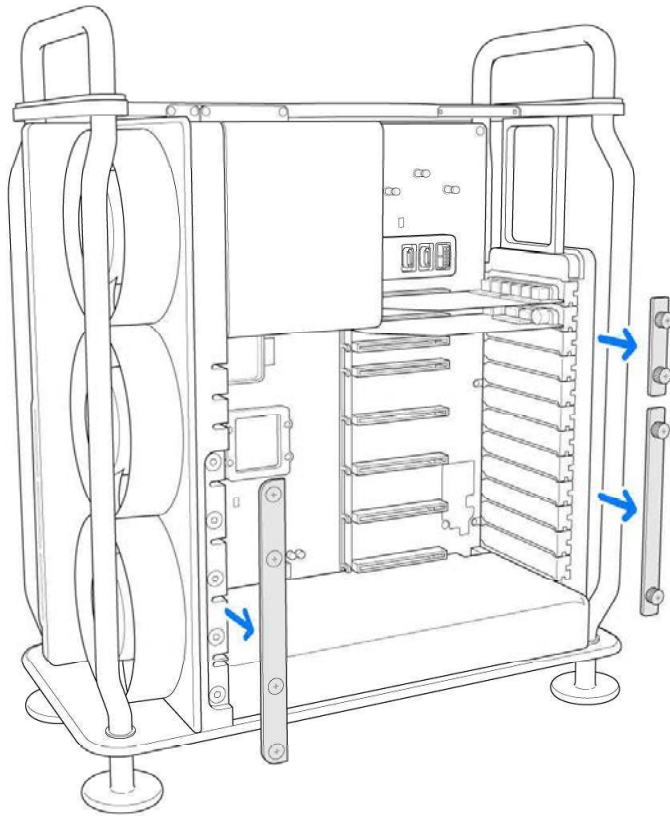
6. Remove the computer's housing by pulling it up by the latch.

*Note:* Mac Pro can't start up when the housing is removed.

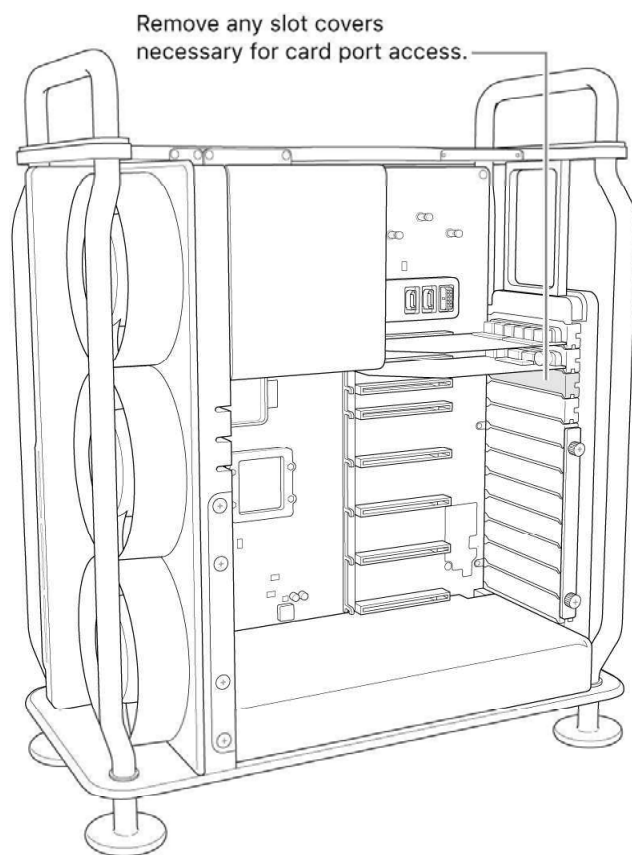


7. Remove the necessary side brackets.

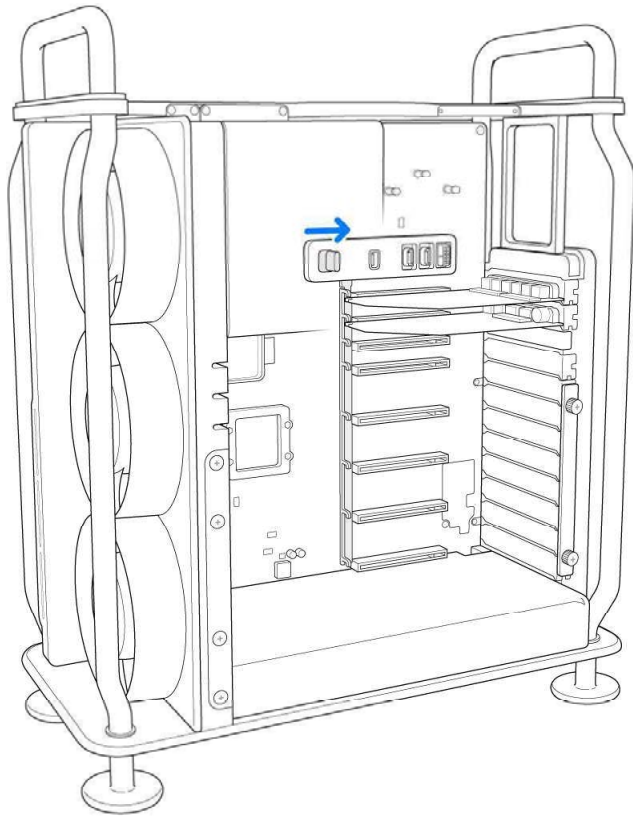
- If you're installing a card into Slots, 1, 2, 3, or 4, remove the side bracket on the bottom-right.
- If you're installing a card into Slot 5, 6, or 7, remove the side bracket on the top-right.
- If you're installing a full-length card, remove the left side bracket.



8. Remove the slot covers.



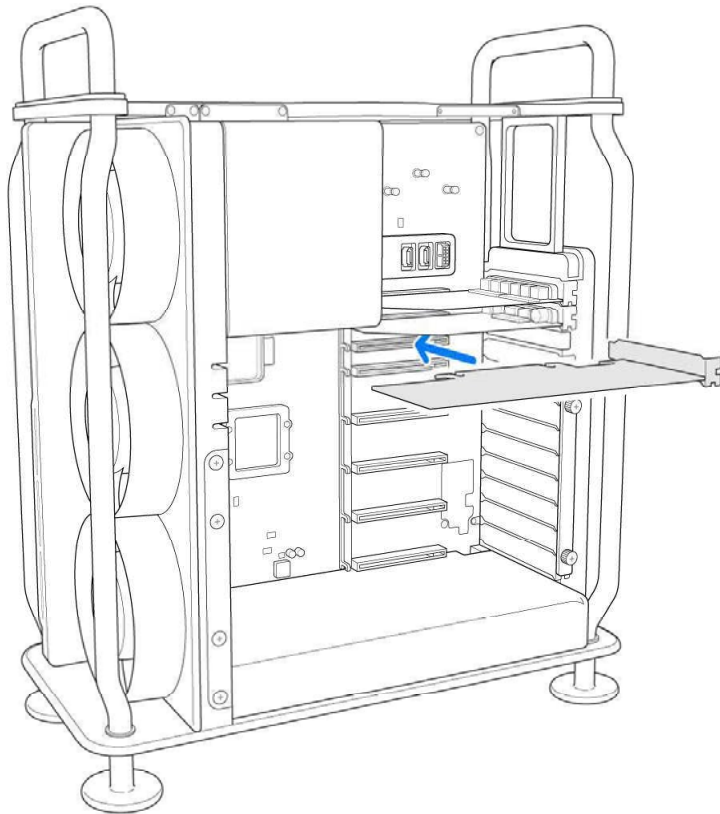
9. Slide the lock to the right.



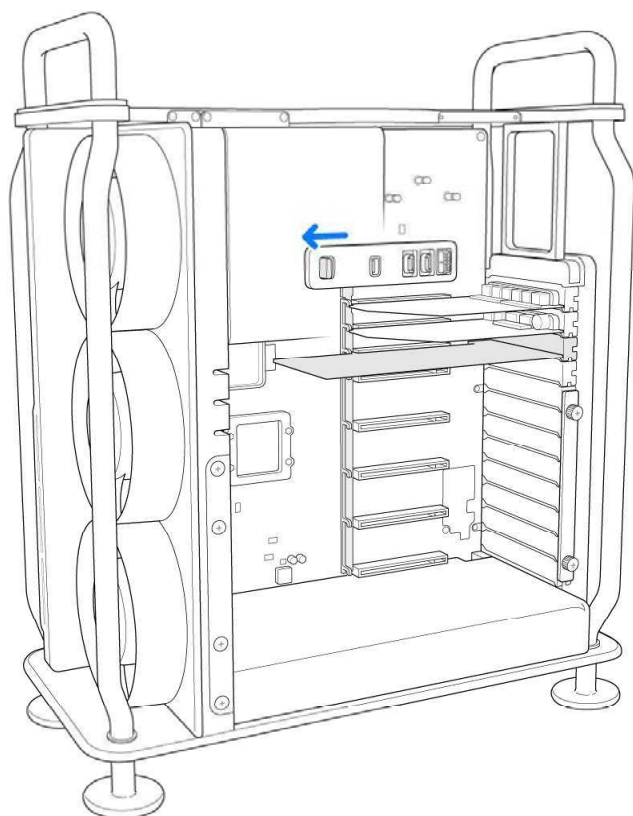
10. Remove the new card from its static-proof bag and hold it by its corners. Don't touch the gold connector or the components on the card.

*Note:* Apple recommends using only PCIe modules that are safety certified (CSA, UL, or equivalent) and specifically state that they are compliant with the industry standard PCIe specification.

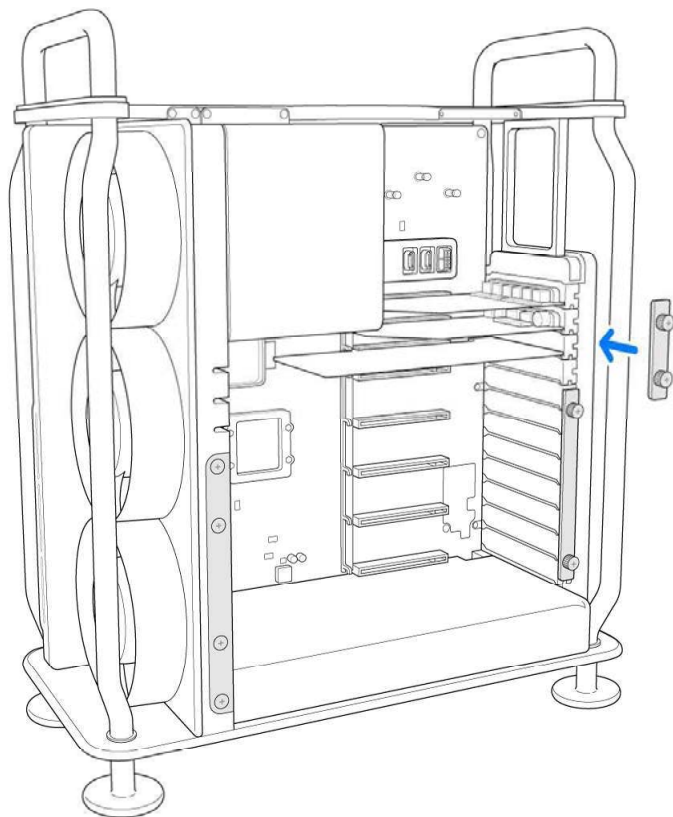
11. Slide the card into place.



12. Slide the lock to the left.



13. Reinstall the right side brackets. If you installed a full-length card and also removed the left side bracket, reinstall the left side bracket as well.



14. Replace the computer's housing, then turn the latch clockwise 90 degrees to lock it.

Mac Pro can't start up until the housing is replaced and the latch is rotated to its original position.

15. Reconnect all cables and the power cord to your Mac Pro.

---

## Uninstall and install SSD modules on Mac Pro

Follow these steps to uninstall and install SSD modules in your Mac Pro. To perform this process, you must have:

- Apple Configurator 2.12 or later installed on any Mac that supports macOS 12.4 or later, is plugged into a power source, and has internet access.

You may need to configure your web proxy or firewall ports to allow all network traffic from Apple devices to Apple's network 17.0.0.0/8. For more information on the ports used by Apple products, see the Apple Support article [Use Apple products on enterprise networks](#).

- A supported USB-C to USB-C charge cable

The USB-C cable must support both power and data. Thunderbolt 3 cables aren't supported.

- SSD modules that are compatible with the current Mac Pro.

Intel-based Mac Pro SSD modules are not compatible with the current Mac Pro.

**WARNING:** Make sure all data from the existing SSD has been backed up. The encrypted data on the original SSD modules is not readable by any other Mac. After a new SSD pairing operation has started, the data on the existing SSD is not recoverable or accessible to any system including the original Mac Pro they came from.

*Note:* If you have a Mac Pro rack workstation, see [Uninstall and install SSD modules in Mac Pro \(Rack\)](#).

---

1. Turn off your Mac Pro by choosing Apple menu  > Shut Down.

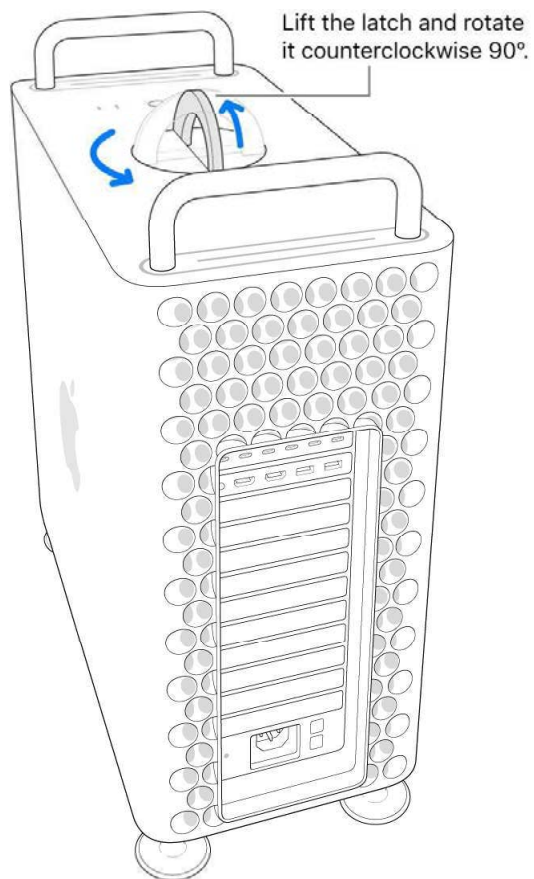
Let the computer cool down for 5 to 10 minutes before you touch the internal components, which may be hot.

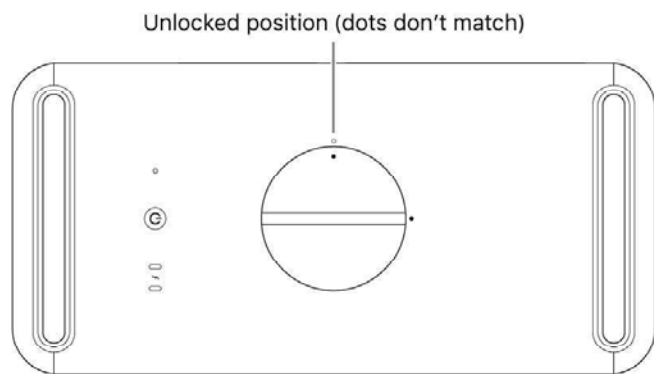
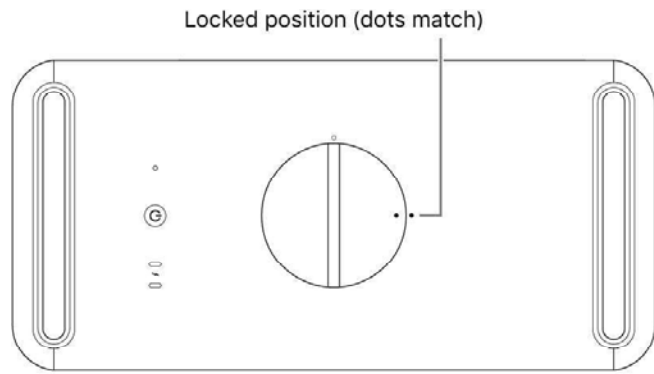
2. Disconnect all cables except the power cord from your Mac Pro.
3. Touch the metal on the outside of your Mac Pro to discharge any static electricity.

*Note:* Always discharge static before you touch parts or install components inside your Mac Pro. To avoid generating static, don't walk around the room until you finish installing the expansion cards.

4. Disconnect the power cord.
5. Unlock the computer's housing by rotating the latch counterclockwise 90 degrees.

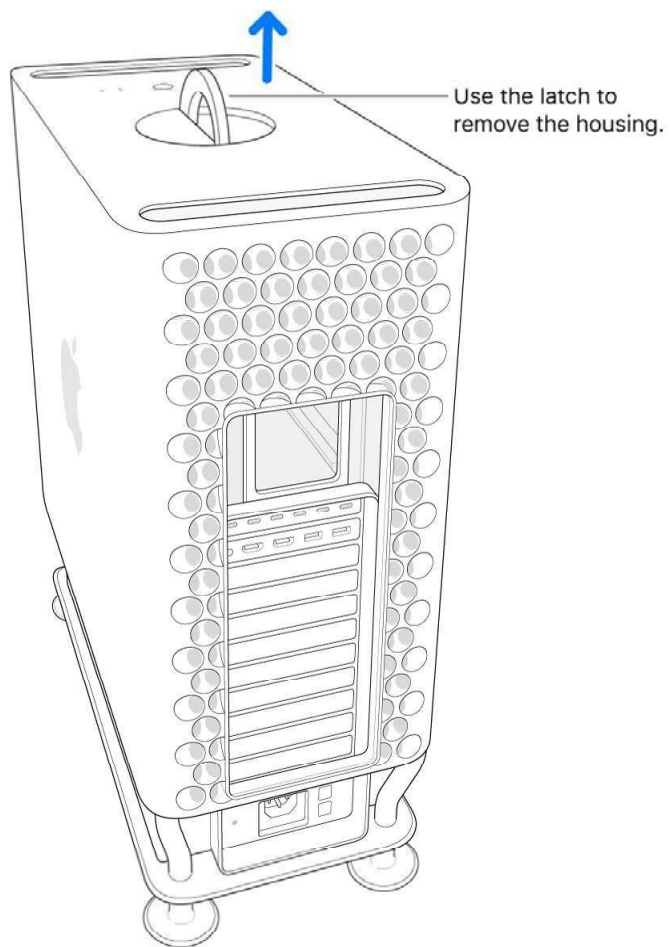
**WARNING:** Do not rotate the latch while the computer is turned on; doing so may cause the computer to shut down.



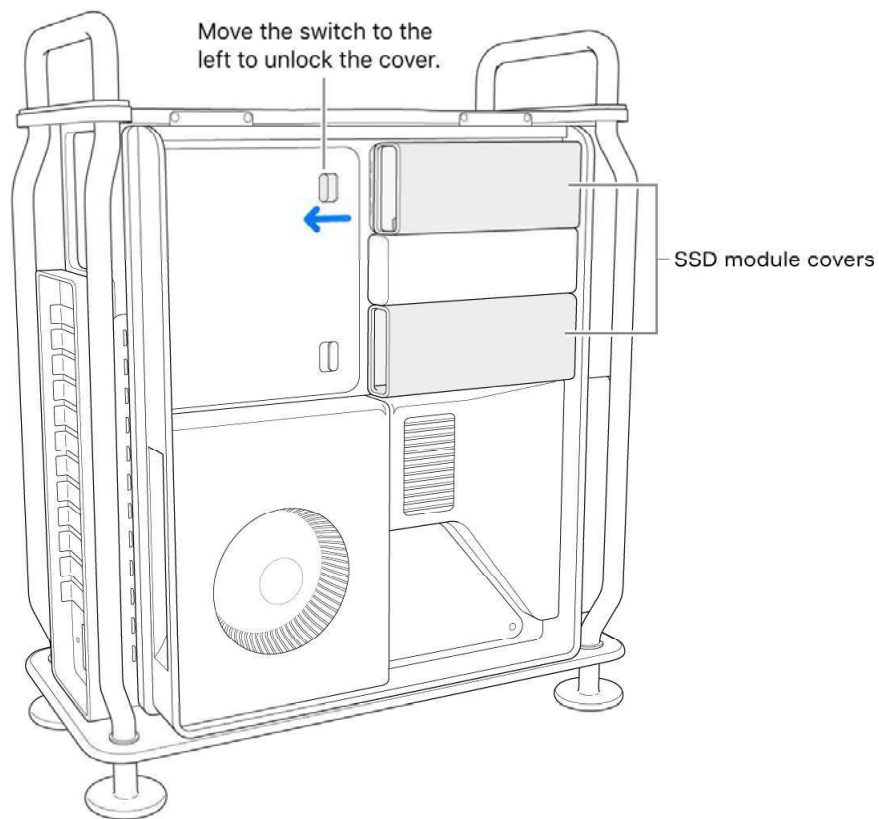


6. Remove the computer's housing by pulling it up by the latch.

*Note:* Mac Pro can't start up if its housing is removed.

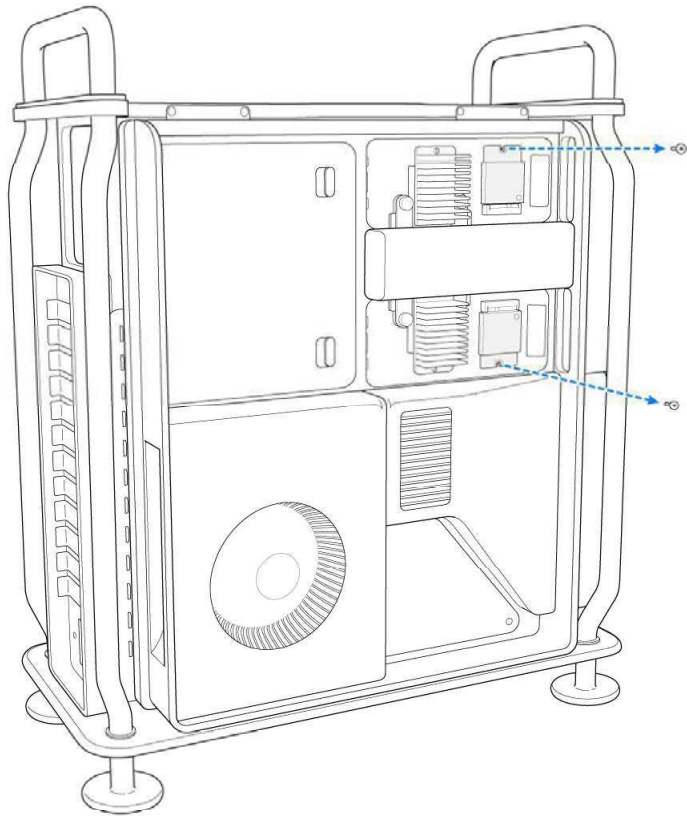


7. Slide the SSD module cover switch to the left.

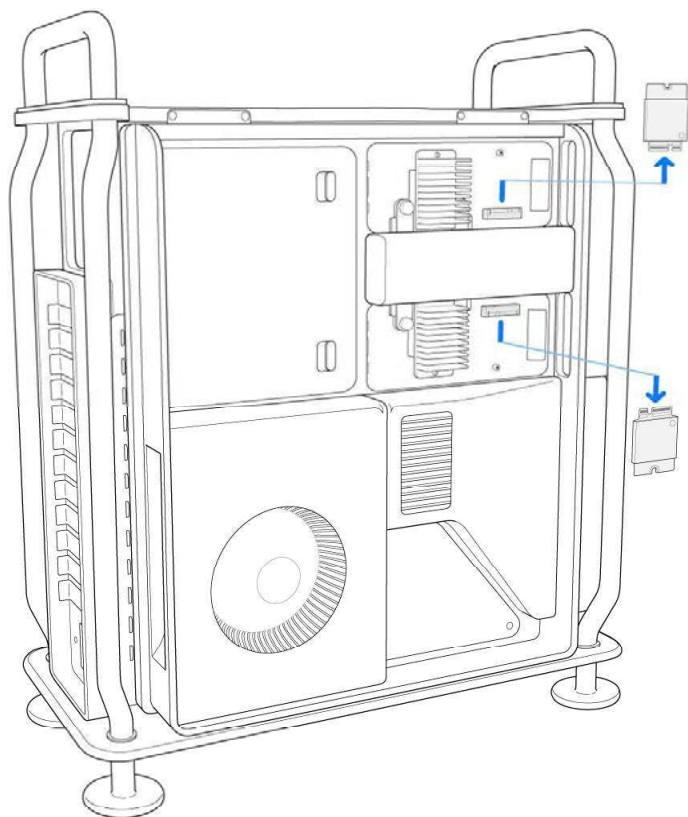


8. Remove the SSD module covers.

9. Use a T8 screwdriver to remove the two screws.

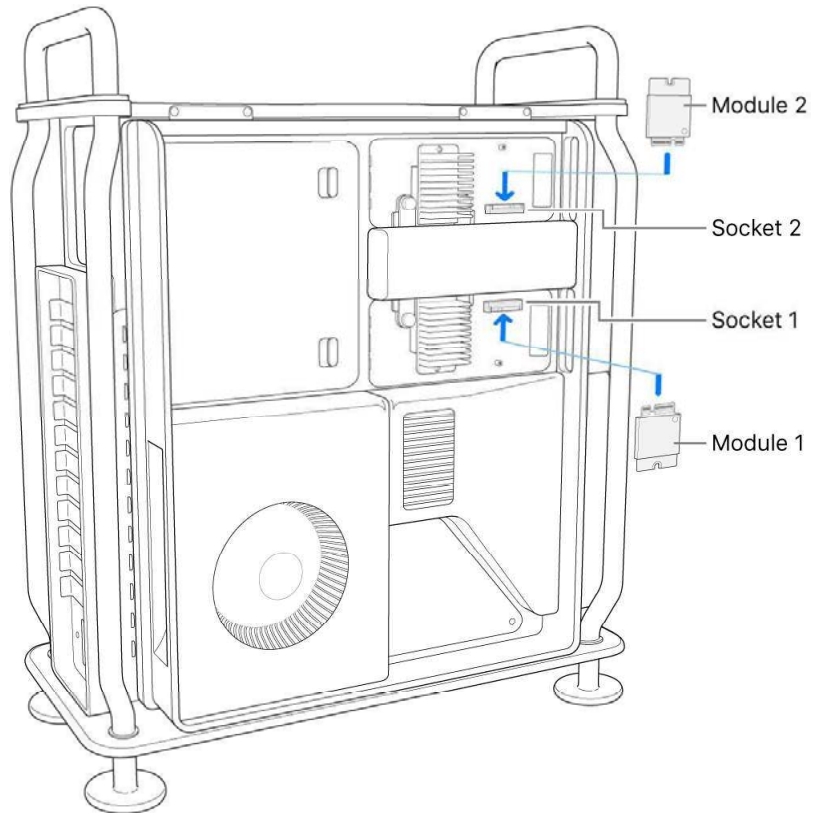


10. Pull an SSD module straight out. Repeat with the other module.

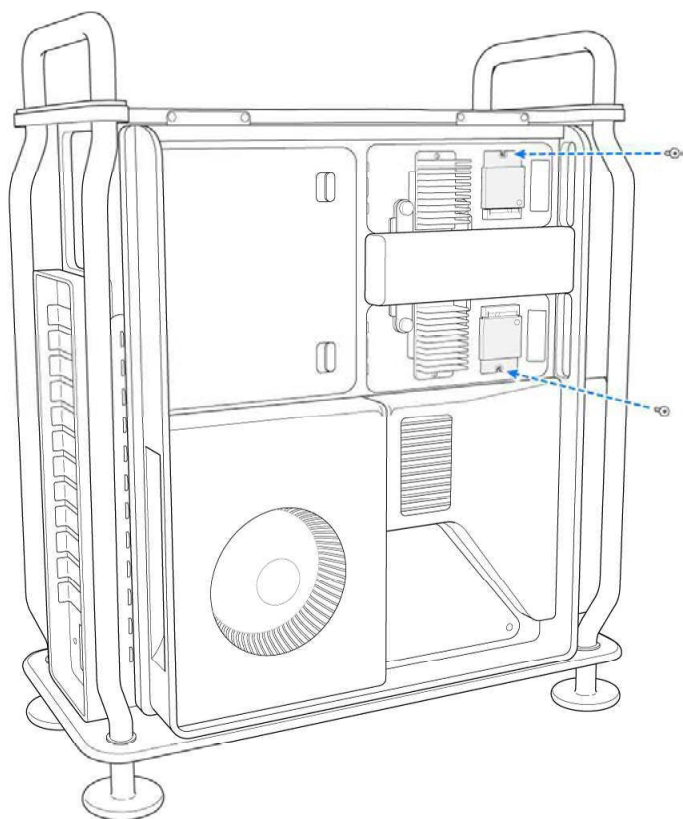


11. Slide the new modules into place, making sure to place each module in the correct socket.

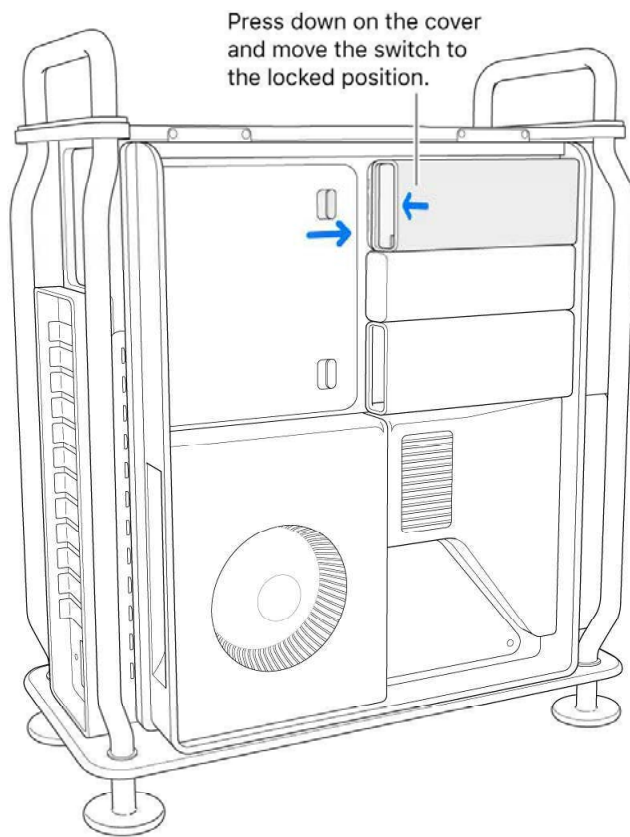
**Important:** The modules are marked "1" and "2." The module marked "1" must be installed in the socket marked "1" and the module marked "2" must be installed in the socket marked "2."



12. Use a T8 screwdriver to install the two screws that came with the new modules.



13. Reinstall the SSD module cover.

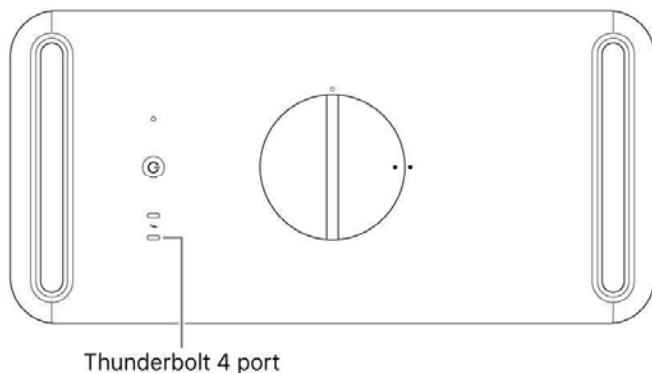


14. Slide the housing over the computer, then turn the latch clockwise 90 degrees to lock the housing.

Mac Pro can't start up until the housing is replaced and the latch is rotated to its original position.

15. Reconnect all cables, except the power cord, to your Mac Pro.
16. Plug in a monitor so you can see when the process of restoring the firmware is complete.

17. Plug the USB-C cable into the Thunderbolt port farthest away from the power button. Plug the other end of the cable into the Mac that you will use to restore Mac Pro.



18. While holding down the power button, connect Mac Pro to power and continue to hold down the power button for about 3 seconds. The status indicator light turns solid amber.

*Note:* You won't see any screen activity from Mac Pro.

19. To restore the firmware on Mac Pro, follow the steps outlined in [Revive or restore a Mac with Apple silicon](#) in the Apple Configurator User Guide.

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## Remove or install feet or wheels on Mac Pro

Follow these steps to remove or install feet or wheels on your Mac Pro.

**Important:** Install four feet or wheels on your Mac Pro; don't mix feet and wheels on the same computer. Additionally, your configured Mac Pro must not weigh more than 25 kg (55 pounds) if it is fitted with the optional wheel kit. If a computer on wheels weighs more than 25 kg, it doesn't comply with safety standard stability requirements. Heavier computers should rest on the standard feet.

1. Turn off your Mac Pro by choosing Apple menu  > Shut Down.

Let the computer cool down for 5 to 10 minutes before you touch the internal components, which may be hot.

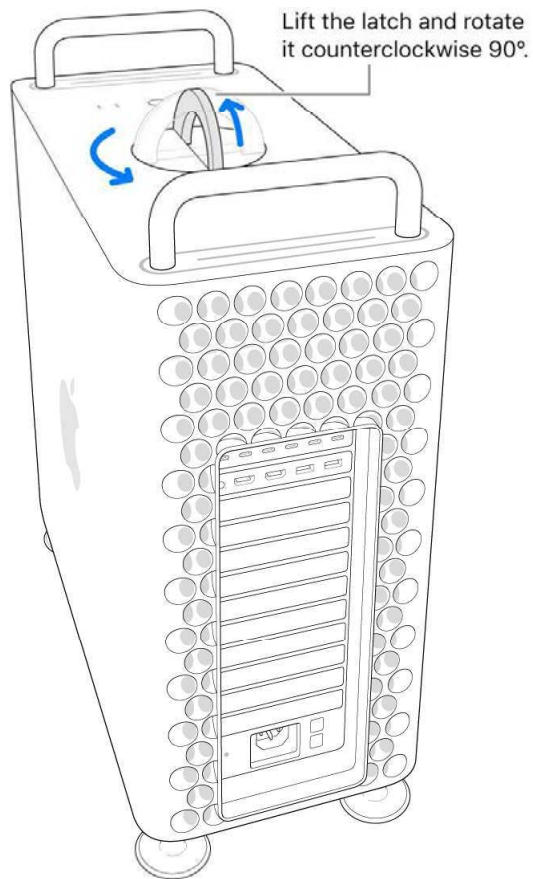
2. Disconnect all cables except the power cord from your Mac Pro.
3. Touch the metal on the outside of your Mac Pro to discharge any static electricity.

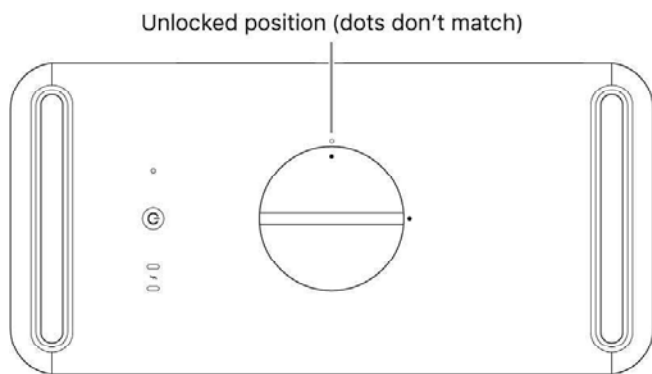
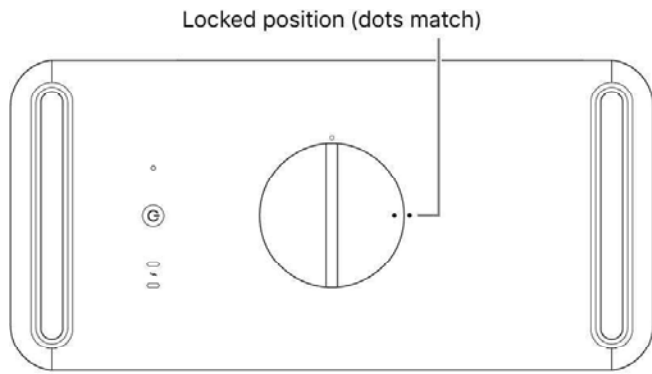
*Note:* Always discharge static before you touch parts or install components inside your Mac Pro. To avoid generating static, don't walk around the room until you finish installing the expansion cards.

4. Disconnect the power cord.

5. Unlock the computer's housing by rotating the latch counterclockwise 90 degrees.

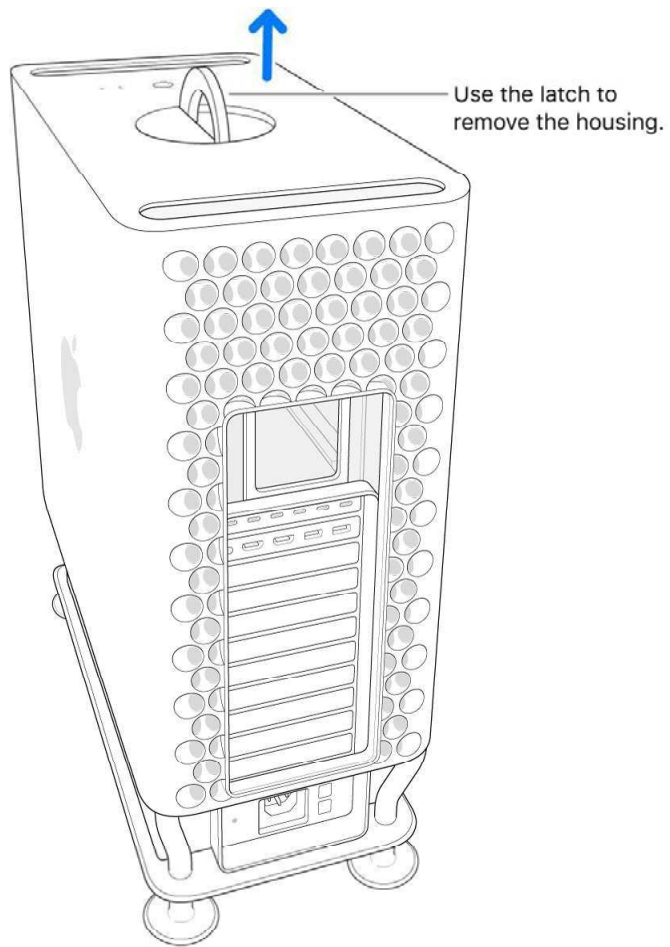
**WARNING:** Do not rotate the latch while the computer is turned on; doing so may cause the computer to shut down.



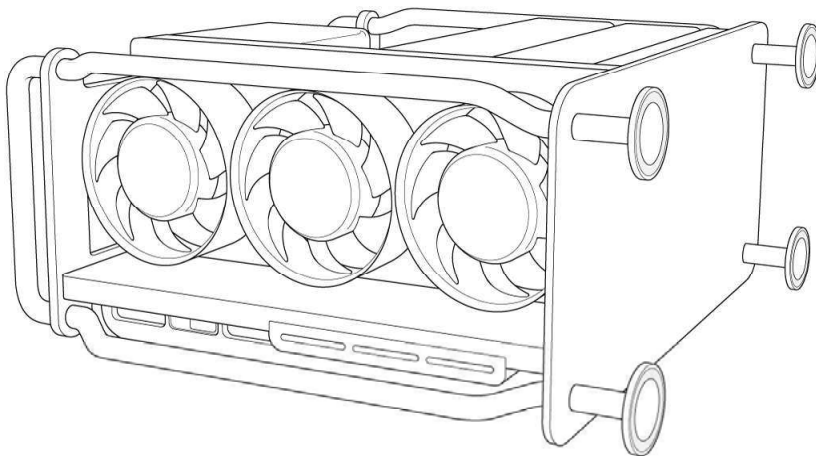


6. Remove the computer's housing by pulling it up by the latch.

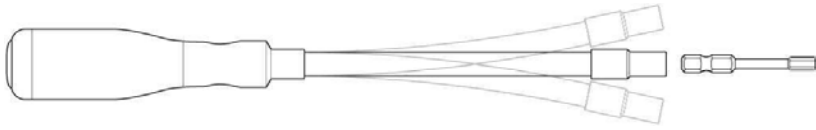
*Note:* Mac Pro can't start up if its housing is removed.



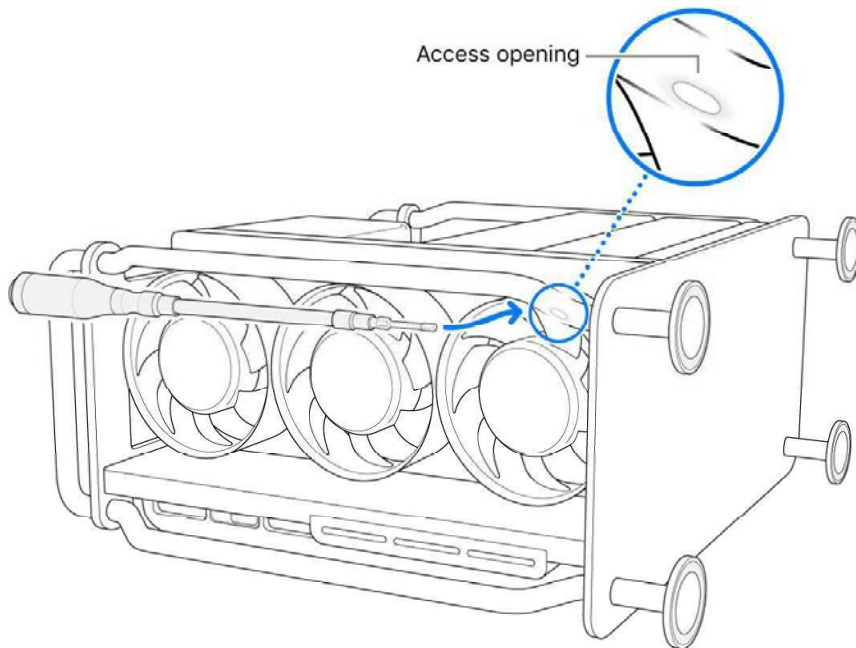
7. Place Mac Pro on its side, on a nonscratch surface.



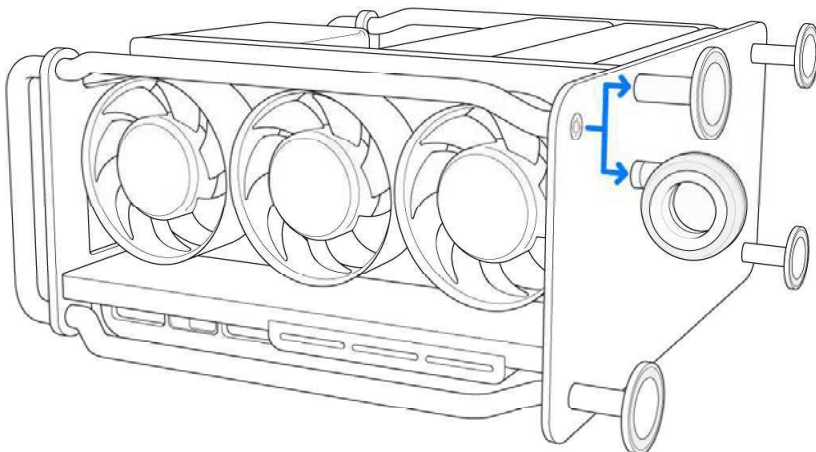
8. Use a flexible screwdriver or bit driver with the bit that comes with the feet or wheel kit.



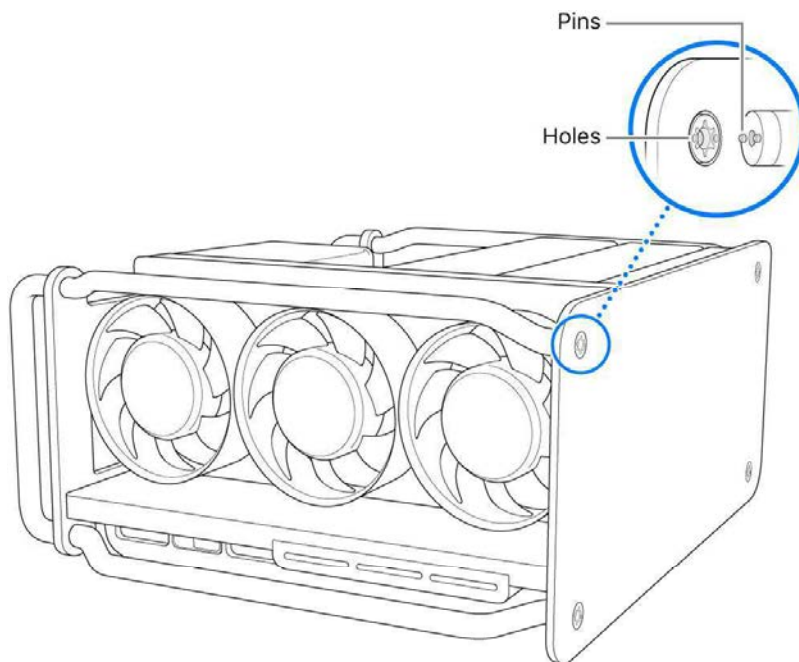
9. Place the driver through the access opening to unscrew the foot or wheel.



10. Hold the the foot or wheel while you unscrew it. Repeat steps 9 and 10 for all four feet or wheels.

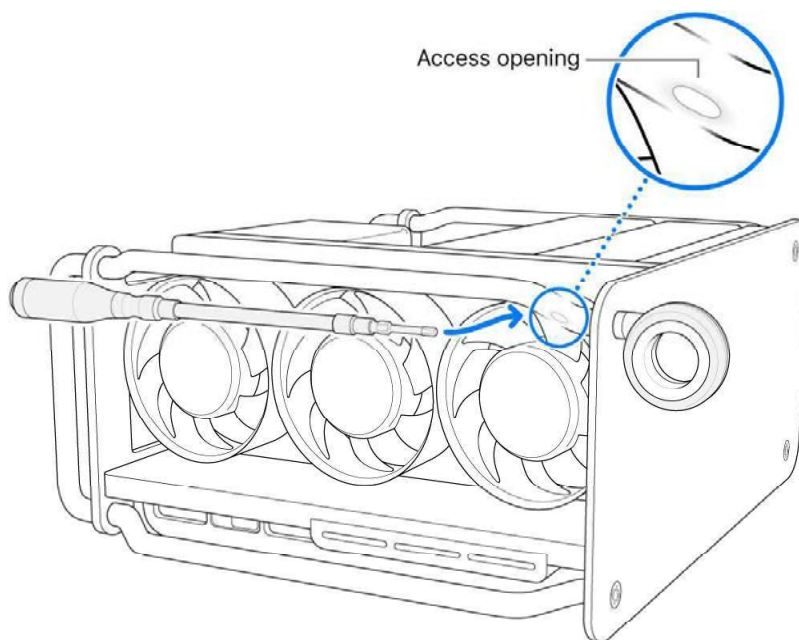


11. To install a foot or wheel, align and seat the two pins in the foot or wheel with the two holes in the mount plate on the base of the computer.



12. While holding the foot or wheel, place the bit on the screw and use the driver to turn the bit clockwise. Repeat steps 11 and 12 for all four feet or wheels.

**WARNING:** Make sure that all feet or wheels are securely screwed in so that the feet or wheels don't become loose over time.



13. Place Mac Pro upright on its feet or wheels, slide the housing over the computer, then turn the latch clockwise 90 degrees to lock the housing.

Mac Pro can't start up until the housing is replaced and the latch is rotated to its original position.

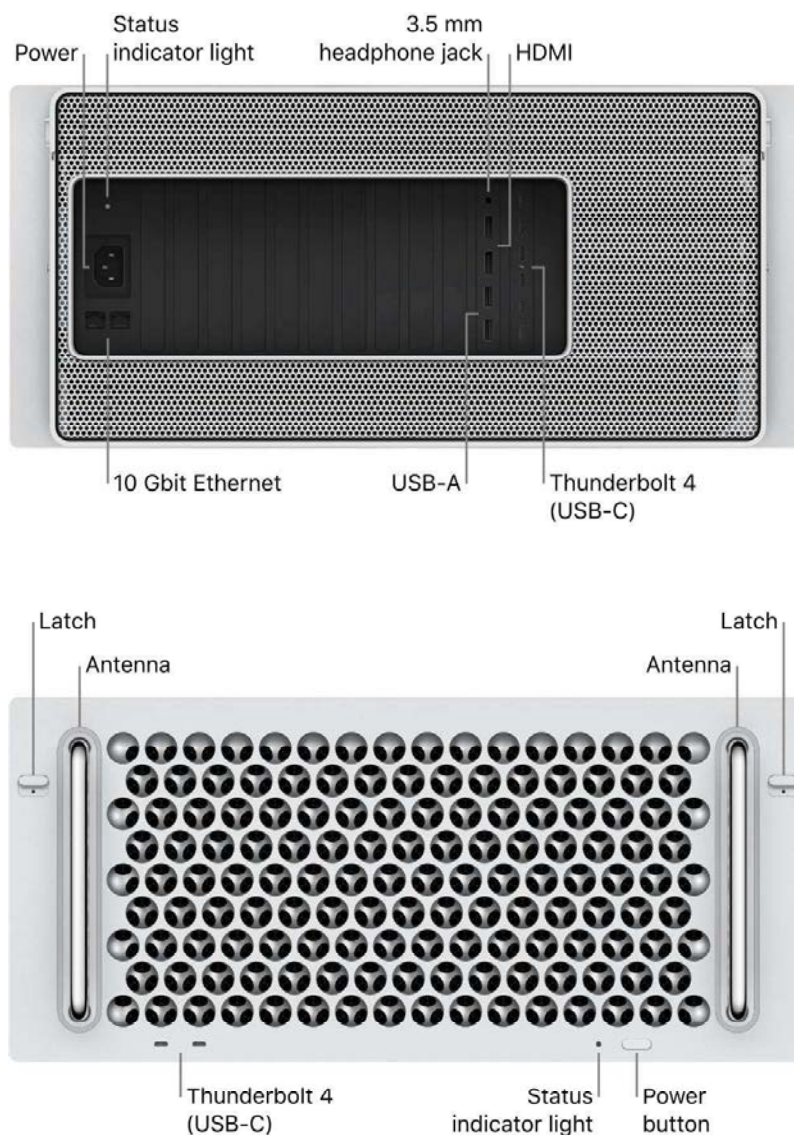
14. Reconnect all cables and the power cord to your Mac Pro.
-

# Rack mount your Mac Pro

## Take a tour of Mac Pro (Rack)

Your Mac Pro is equipped with advanced technologies.

*Note:* This tour is for the Mac Pro rack workstation with Apple silicon. If you have an Intel-based Mac Pro rack workstation, see [Take a tour of Mac Pro](#). If you have a Mac Pro tower workstation, see [Take a tour of Mac Pro](#).



- **Power button:** Press to turn on your Mac Pro. Press and hold for 10 seconds to force your Mac Pro to Shut Down. (You can also choose Apple menu  > Shut Down to turn off your Mac Pro, or Apple menu  > Sleep to put it to sleep.)

- **Thunderbolt 4 (USB-C) ports:** Mac Pro has two Thunderbolt 4 (USB-C) ports on the front and six ports on the back. Use these ports to transfer data, and connect docking stations and RAID arrays. The ports also support USB 4 with speeds up to 40 Gbit/s, and can charge devices, such as an iPad or a rechargeable keyboard, mouse, or trackpad. For more information about Thunderbolt 4 capabilities, see the Apple Support article [About the Apple Thunderbolt 4 Pro Cable](#).
- **3.5 mm headphone jack:** Plug in stereo headphones or external speakers to listen to your favorite music or movies. Use high-impedance headphones without a digital-to-analog converter or an amplifier.
- **HDMI ports:** Mac Pro has two HDMI ports. The ports can connect your Mac Pro to a TV or an external display.
- **USB-A (USB 3) ports:** Connect an iPhone, iPad, iPod touch, digital camera, external storage device, or printer. The Mac Pro USB-A ports support USB 3 and USB 2 devices at up to 5 Gbit/s.
- **Status indicator lights:** One light is on the front of your Mac Pro next to the power button and another is on the back, beside the power port. A steady white light indicates that your Mac Pro is awake or in sleep; no light indicates that your Mac Pro is turned off.

*Note:* If the top cover or access door is opened while your Mac Pro is on, the status light is solid amber for 0.3 seconds and repeats until the top cover or access door is reinstalled. For more information, see the Apple Support article [Mac Pro status indicator light behavior](#).

- **Power port:** Plug the power cord into the power port on the back of your Mac Pro, then plug the other end of the cord into a power outlet.
- **10 Gigabit Ethernet (RJ-45) ports:** Your Mac Pro has two 10 Gigabit Ethernet ports that can use Nbase-T Ethernet technology, which supports multiple data rates for speeds up to 10 Gbit/s over standard twisted-pair copper cable up to 328 feet (100 meters) in length. Depending on the device you're connecting to, the cable type and technology used, and the cable length, the highest link speed is automatically negotiated. For example, if the device you're connecting to is 10 Gbit/s-capable and the cable can support that speed, the two devices negotiate the 10 Gbit/s speed.

See the following table for connection speeds and cable types. Speeds are for cables up to 328 feet (100 meters) in length, unless otherwise specified.

| Cable Type  | 1 Gbit/s | 2.5 Gbit/s | 5 Gbit/s | 10 Gbit/s               |
|-------------|----------|------------|----------|-------------------------|
| Category 5e | ✓        | ✓          | ✓        | Not supported           |
| Category 6  | ✓        | ✓          | ✓        | ✓ Up to 55 m (180 feet) |
| Category 6a | ✓        | ✓          | ✓        | ✓                       |

# Install Mac Pro in a rack

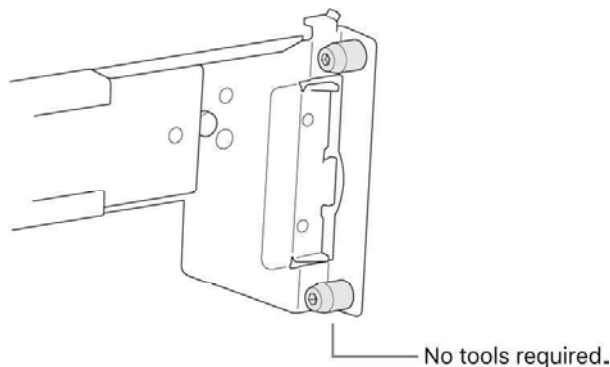
## Install Mac Pro in a rack

**Important:** Before installing Mac Pro in a rack, read the safety notes found in [Important safety information for your Mac](#). You can also view check your Technical Specifications. Open System Settings, then choose Help > Mac Pro Specifications.

Mac Pro and the rail assemblies can be installed in any of the three industry standard rack types with a minimum rack depth of 24 inches (60.96 cm) and a maximum rack depth of 42 inches (106.68 cm). The rails come assembled to fit into square holes, but if you remove hole covers, the rails also fit into round holes. To install the rails in a threaded rack, remove the screws from the rails, then replace the screws to secure the rails to the rack. This requires a standard 1/8 inch (3mm) hex wrench and a 1/4 inch (6mm) wrench. Examples of the different types of rack are below.

*Note:* These instructions are for the Mac Pro rack workstation with Apple silicon. If you have an Intel-based Mac Pro rack workstation, see [Install Mac Pro in a rack](#).

### Square hole rack



### Round hole rack

