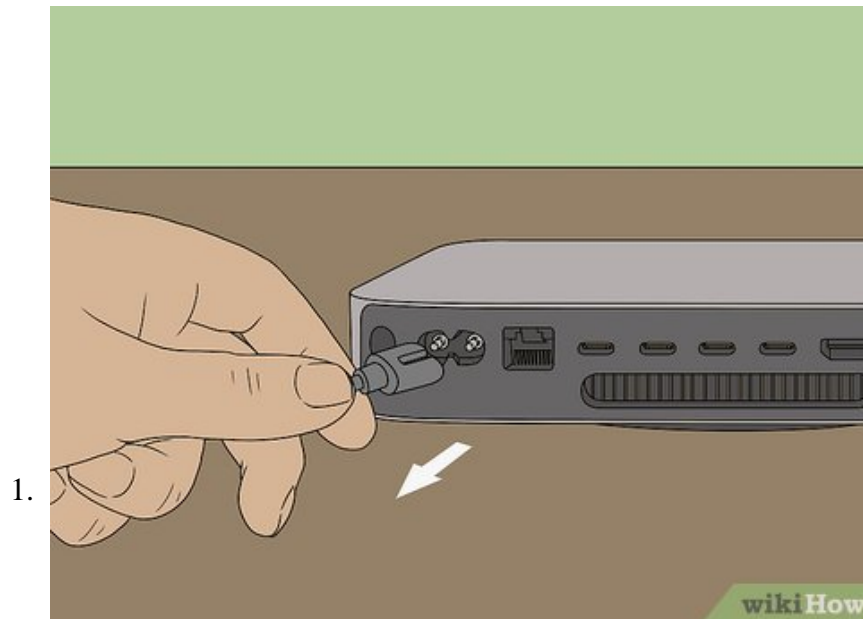


How to Open a Mac Mini

The Apple Mac Mini is one of the smallest fully-functional desktop computers available. Because of its minimal and compact design, it can be difficult to upgrade any of the components due to space considerations. If you have a reason to...

Method 1 of 4:

2018 Mac Mini



Shut down and remove all cables from the Mac Mini. In addition to the power cord, you'll want to unplug any other cables attached to the system.

1. Starting with the 2014 model, the RAM has been integrated into the motherboard rather than in an easy-to-access location. Although it's technically possible to replace the RAM in the 2018 model yourself, you should take it to an Apple Store or authorized service provider to avoid voiding your warranty.^[1]
2. Have a plastic spudger, soft putty knife, or some other very thin tool available so you can remove the case.
3. The components in the Mac Mini are secured with T6 Torx security screws.^[2] You will need a T6 Torx Security screwdriver to remove the Wi-Fi antenna, fan, motherboard, and RAM.

2.



Place the Mac Mini face-down on a clean cloth. Place a clean cloth on top of a clean, flat work surface. The cloth will help prevent any scratches to the computer's body.

1. Do not proceed with this method unless you accept responsibility for potentially voiding your warranty.

3.



Pry the round plastic plate away from the base. Slide the blade of a spudger or thin, flexible putty knife into the gap between the metal shell and plastic base of the computer. Once the blade is partially inserted, apply light outward pressure to the putty knife to pry the shell away from the base. You will hear some clicking sounds as the plastic latches disengage.

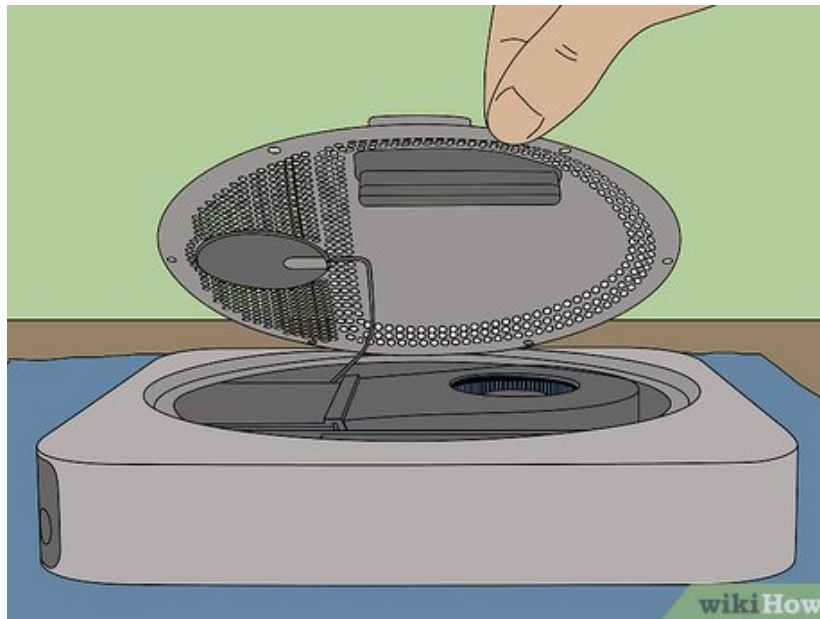
4.



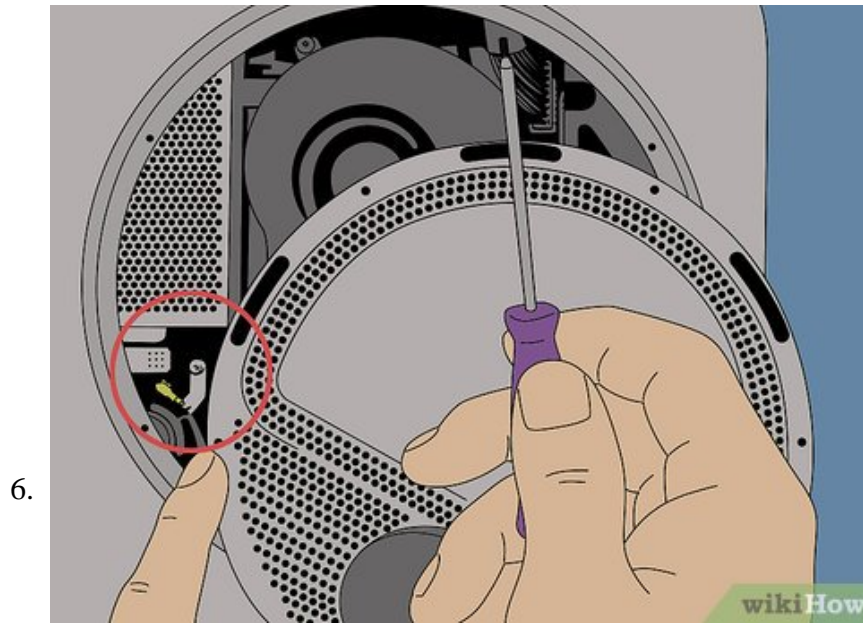
Unscrew the six TR6 screws on the edges of the metal plate. The screws are different lengths, so keep track of which goes where.^[3]

1. Don't pull the plate away from the unit. It's still connected to the motherboard.

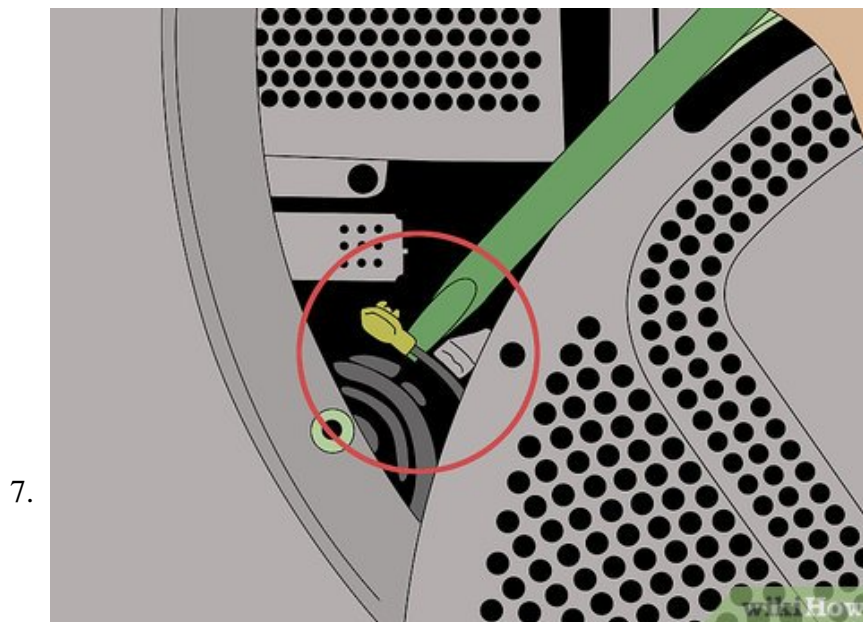
5.



Lift the plate away from the unit about an inch. Be extremely gentle, as the plate is still connected to the motherboard. Move the plate to the side a bit so you can see the connection to the motherboard.

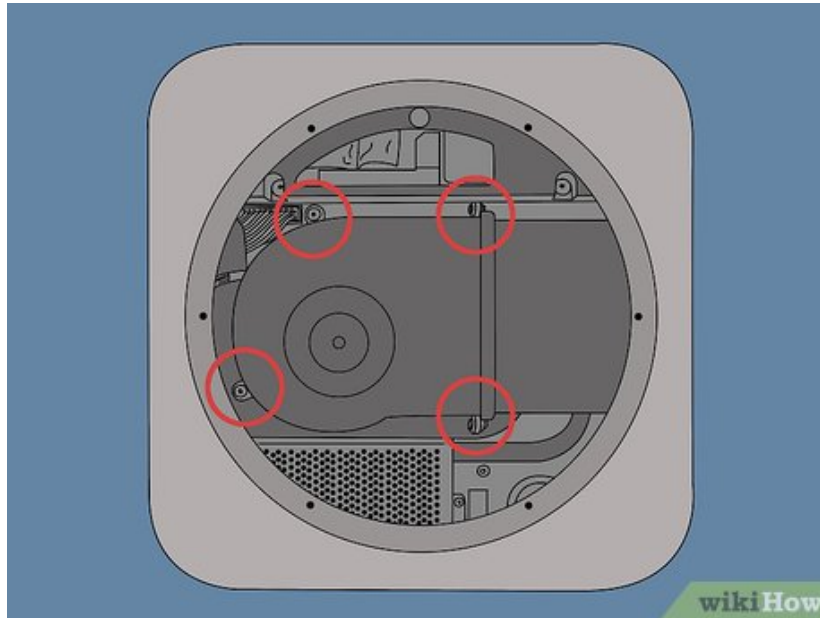


Unscrew the T6 screw connecting the plate to the motherboard. The plate is still connected with a cable, so don't yank it away just yet.



Unplug the cable that connects the plate to the motherboard. It's best to use tweezers or the end of a spudger to pry the cable connector from its socket. Once you've removed the cable, you can pull the plate free from the unit to expose the fan.

8.



Unscrew the four T6 screws from the edges of the fan. The fan is the black plastic unit at the center of the unit. Two of these screws connect the fan to the motherboard, while the other two connect to the air vent.

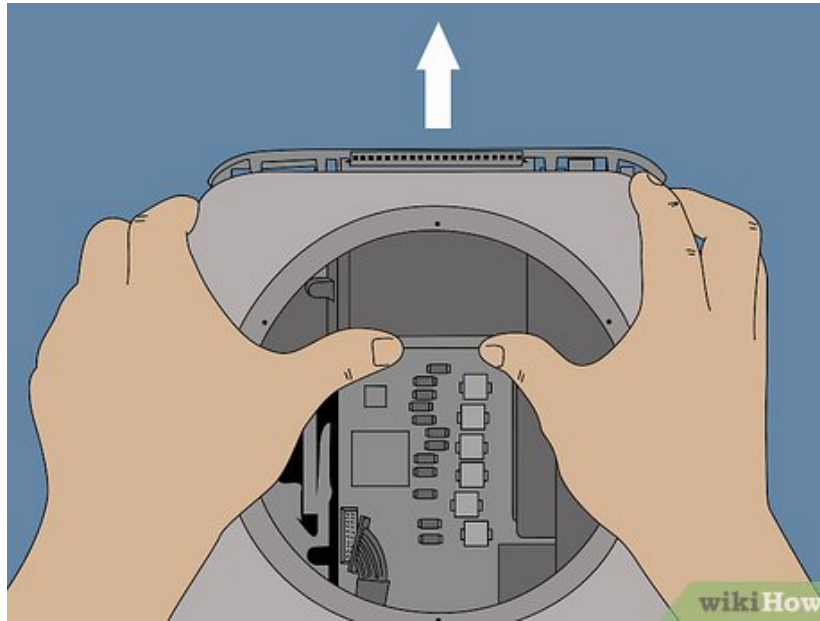
1. Don't try to pull the fan free, as it's still connected to the motherboard.

9.



Unplug the fan from the motherboard. To find the connector, gently move the fan to the side to expose the motherboard. Grasp the fan's cable at the base and gently lift the plug free from the socket. You can now remove the fan and see the motherboard.

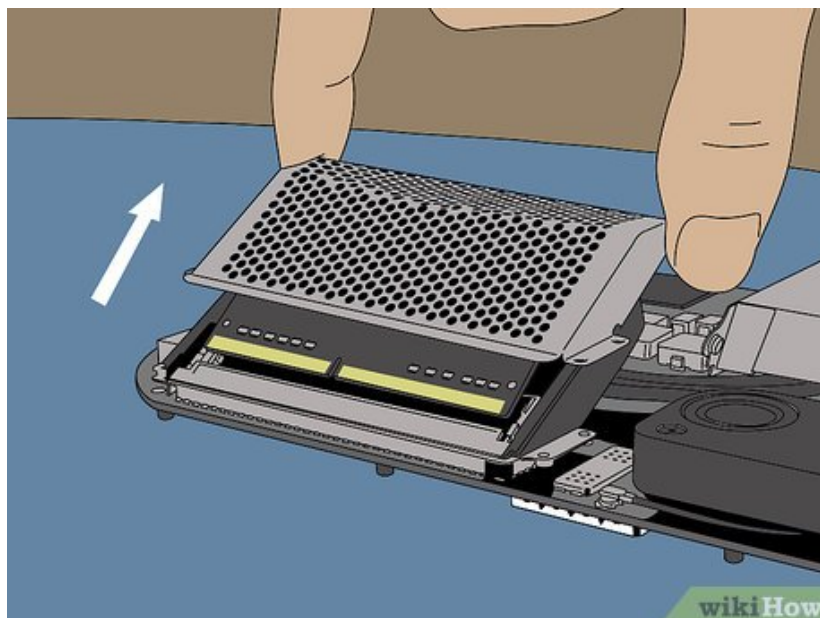
10.



Remove the motherboard. Continue with this method only if you want to access the RAM.

1. Unplug the power supply from the motherboard. The connector is rectangular and larger than other connectors. You may have to wiggle it a bit to free it.
2. Disconnect the (very small and fragile) LED indicator from the socket. It's the small square above the gray box marked "R36." Use the spudger or a very small pliable tool.
3. Unscrew the two T10 screws that connect the motherboard to the unit. They are parallel to one another.
4. Push the motherboard free from the unit *very gently*. To do so, place both thumbs on either end of the heating vent (it's the black plastic rectangle) right over the screw holes, and then push in the direction of the Mac Mini's ports. Once the motherboard starts to slide, pull it free from the port side.

11.

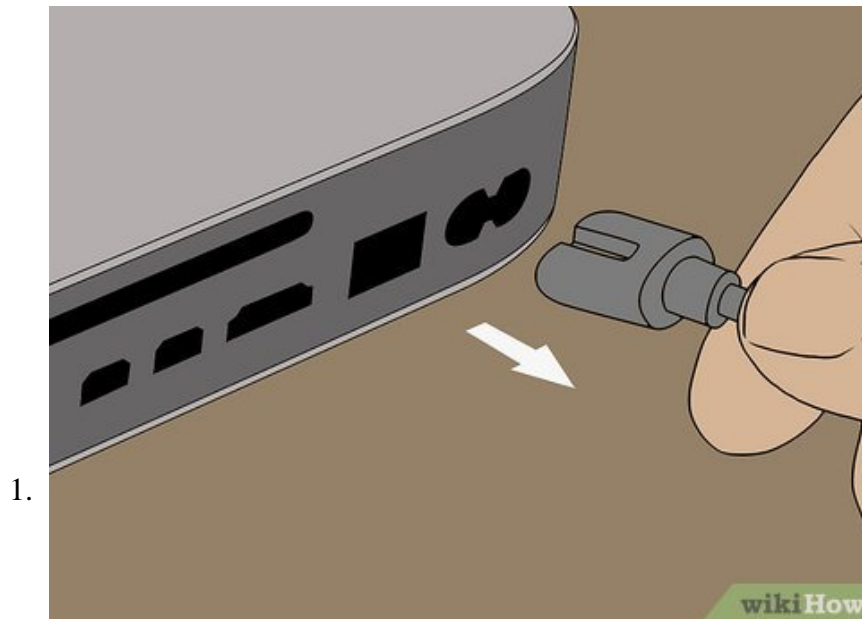


Remove the RAM cover plate to expose the RAM. The RAM is installed below the metal grated plate. To remove it, unscrew the four T5 screws that secure it to the board. Once the screws are free, you can lift the plate away from the motherboard.

1. To remove the RAM, spread the two clips surrounding the stick in opposite directions, and then slide the RAM stick free. Repeat for the second stick if necessary.
2. To insert a new RAM stick, align notch at the bottom of the stick to the slot, and then slide it in until you hear a click. Repeat for another stick if necessary.

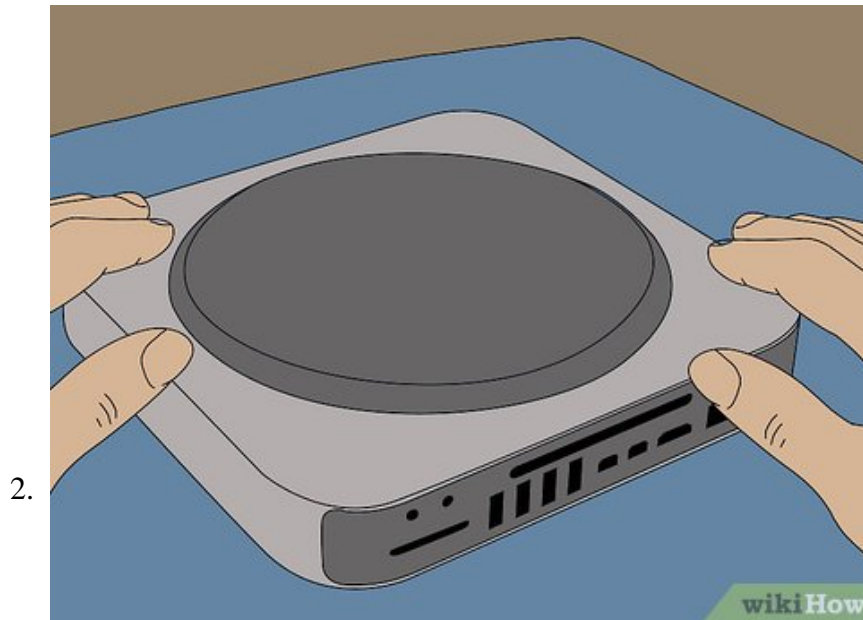
Method 2 of 4:

2014 Mac Mini



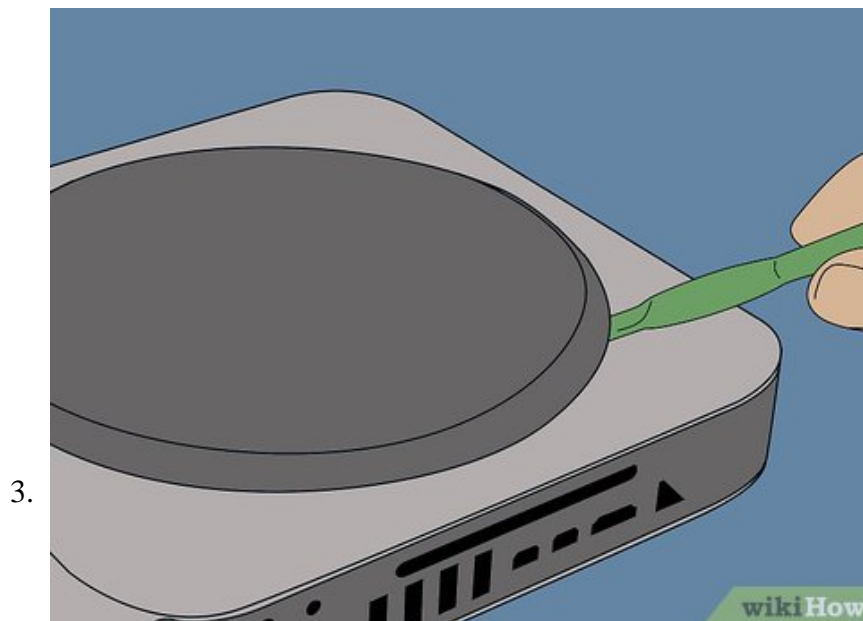
Shut down and remove all cables from the Mac Mini. In addition to the power cord, you'll want to unplug any other cables attached to the system.

1. It is not possible to replace the RAM in the 2014 model, as it is integrated with the motherboard.^[4] These models are not even upgradable at the Apple Store.
2. You'll need to use a thin opening tool to pry the cover from the unit. Have a plastic spudger, soft putty knife, or some other very thin tool available for this task.
3. The components in the Mini are secured with T6 Torx security screws. You will need a T6 Torx Security screwdriver to remove the Wi-Fi antenna, fan, motherboard, and RAM.



Place the Mac Mini face-down on a clean cloth. Place a clean cloth on top of a clean, flat work surface. The cloth will help prevent any scratches to the computer's body. The round black access plate should be face-up.

1. Do not proceed with this method unless you accept responsibility for potentially voiding your warranty.



Pry the round plastic plate away from the base. Slide the blade of a spudger or thin, flexible putty knife into the gap between the metal shell and plastic base of the computer. Once the blade is partially inserted, apply light outward pressure to the putty knife to pry the shell away from the base. You will hear some clicking sounds as the plastic latches disengage.

4.



Unscrew the six T6 screws from the antenna plate. This is the round metal plate at the center of the base. The screws are different lengths, so keep track of which goes where. Don't try to remove the plate just yet, as it's still connected to the motherboard.

5.



Slide the metal plate right or left to expose the connection to the motherboard. It's connected with a single T6 screw and one cable.

6.



Remove the one T6 screw and washer that connects the plate to the motherboard. Be careful not to lose the washer.

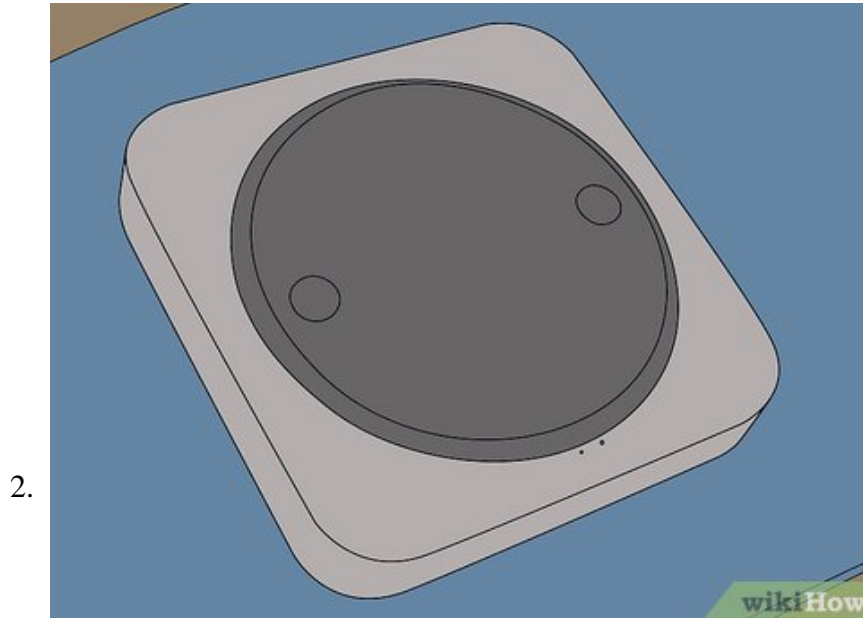
7.



Unplug the antennae cable from the motherboard. The final step to removing the plate is to use your spudger or a small tool to lift the connector free from the motherboard. Lift it straight up from the socket to move the plate away from the unit. This exposes the fan, which covers the motherboard.

Shut down and remove all cables from the Mac Mini. In addition to the power cord, you'll want to unplug any other cables attached to the system.

1. Make sure that you are working in a relatively dust-free environment, as even small amounts of dust can damage the computer's delicate electronic components.
2. The components in the Mac Mini are secured with T8 and T7 Torx security screws. You will need a one or both Torx Security screwdrivers to remove the Wi-Fi antenna, fan, motherboard, and RAM.



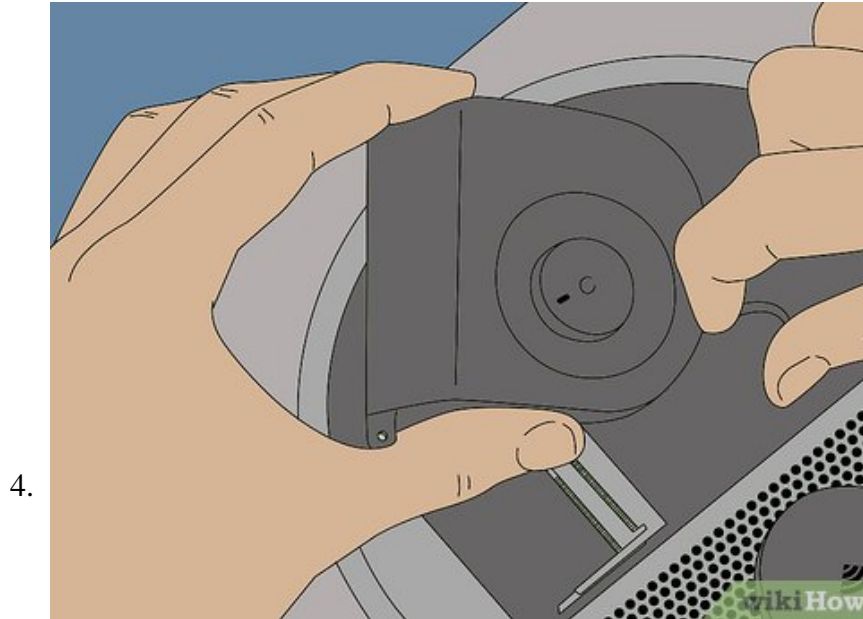
Place the Mac Mini face-down on a clean cloth. Place a clean cloth on top of a clean, flat work surface. The cloth will help prevent any scratches to the computer's body. The round black access plate should be face-up.

1. Do not proceed with this method unless you accept responsibility for potentially voiding your warranty.



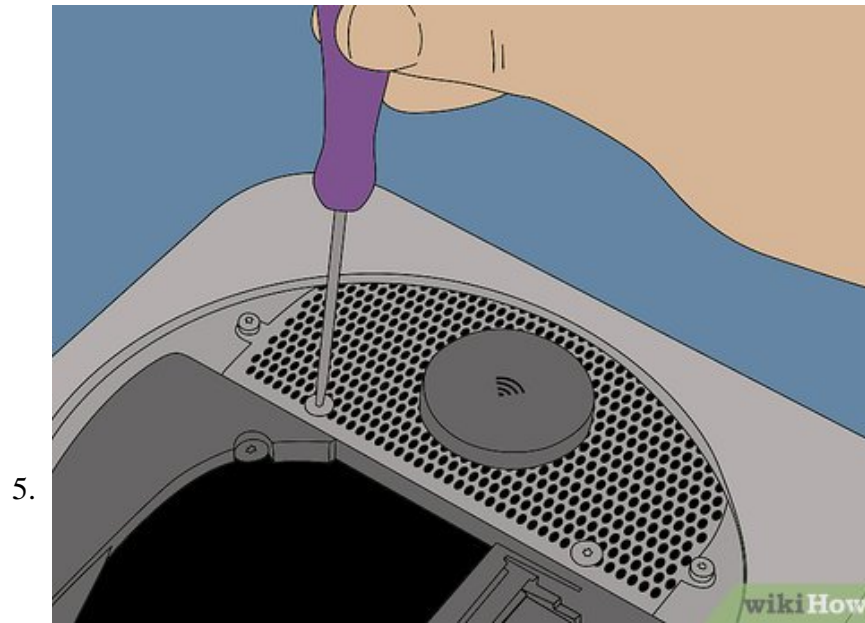
Twist the black access plate counter-clockwise until it easily separates from the unit. Unlike previous models, you won't need any special tools to remove the panel. Once the panel is removed, you'll see the RAM slots and the fan, both of which can easily be replaced.^[5]

1. If you want to remove a stick of RAM, gently spread the clips on either side of the stick outward until you can easily slide the RAM from the slot. Repeat for the second stick if applicable.^[6]
2. To insert RAM into an available slot, simply spread the clips outward on both sides of the slot and slide the stick in.



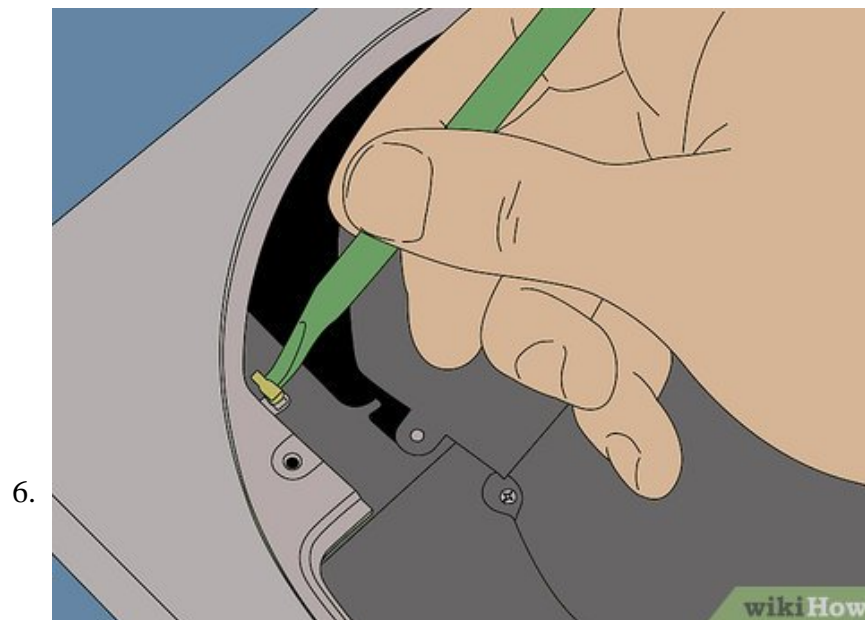
Remove the fan (optional). If you need to replace the fan, you can do so easily. Here's how:

1. Remove the T6 or T8 screws that surround the fan. Depending on the model, there could be 2 to 4 screws, and they may be different lengths.
2. Gently pull the fan up from the motherboard. The fan is connected with a single cable, so be careful not to pull too hard.
3. Pull the fan's cable free from the motherboard. Grab the part of the cable closest to the motherboard and gently pull the connector upwards from its slot.



Remove the Wi-Fi antennae (optional). If you need to replace the Wi-Fi assembly, you can do so now. Here's how:

1. Use the same screwdriver to remove the screw(s) that connect the small black plastic panel to the case, and then gently pull it away to expose more of the motherboard.^[7]
2. Unscrew all 4 screws (they are different sizes, so keep track of which goes where) from the top and bottom of the grated metal plate (which is part of the antenna).
3. Gently pull the grated plate away from the case. Don't pull too hard, as the plate is connected with a cable.
4. Gently pry the antennae connector away from the motherboard. The connector is quite small, so if you have a spudger or small plastic wedge, use that. Be careful not to remove the socket to which the connector is attached.



Disconnect all cables from the motherboard. Again, a spudger or a small plastic wedge would work best for disconnecting these cables.^[8] It is extremely important that you remove all cables if you plan to remove the logic board or you could break a connector.

Method 4 of 4:

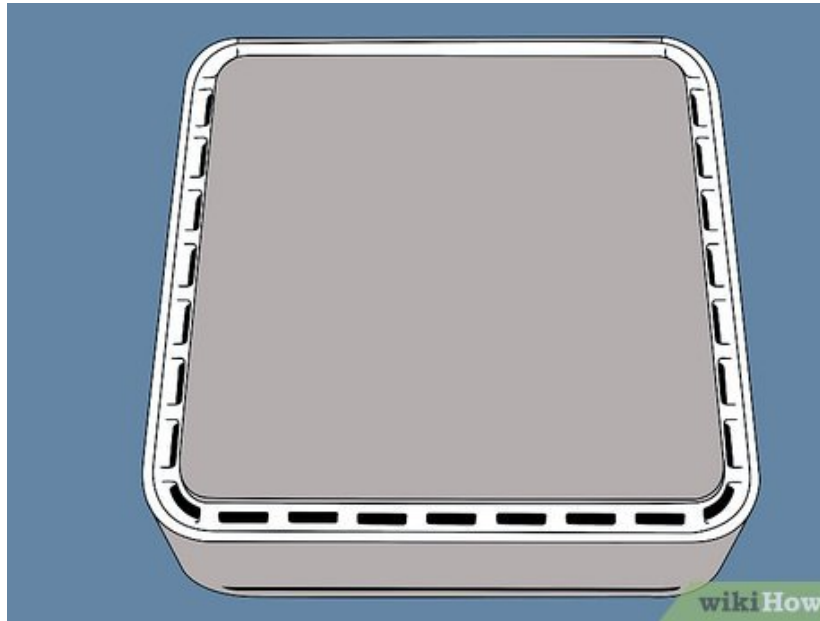
2009 and Earlier Mac Mini



Shut down and remove all cables from the Mac Mini. In addition to the power cord, you'll want to unplug any other cables attached to the system.

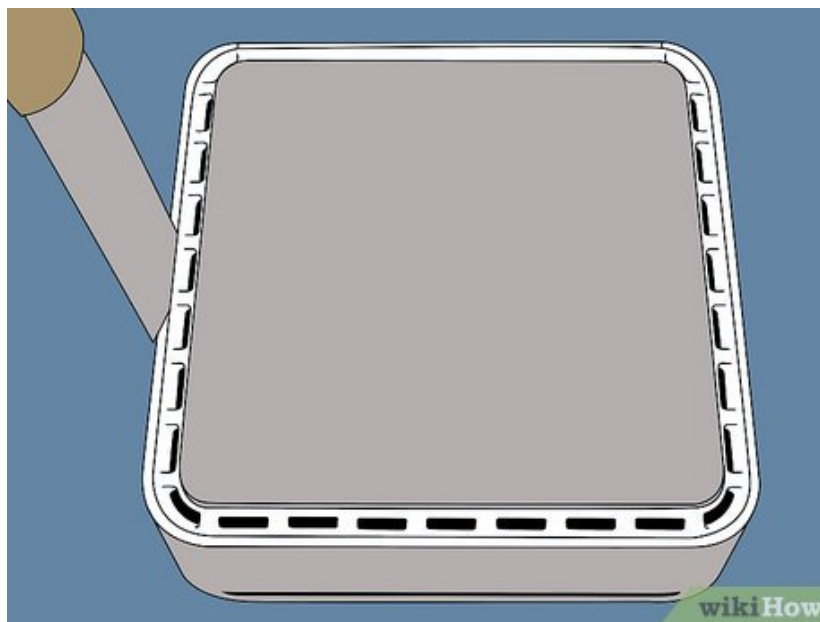
1. When you are ready to begin working, touch a piece of metal to discharge any static electricity from your body.
2. Make sure that you are working in a relatively dust-free environment, as even small amounts of dust can damage the computer's delicate electronic components.

2.

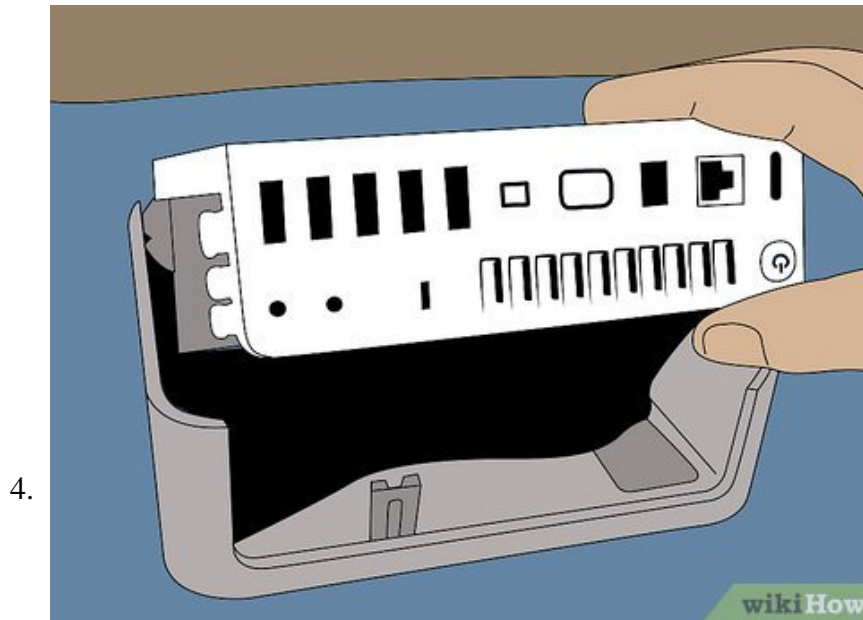


Place the Mac Mini face-down on a clean cloth. Place a clean cloth on top of a clean, flat work surface. The cloth will help prevent any scratches to the computer's body.

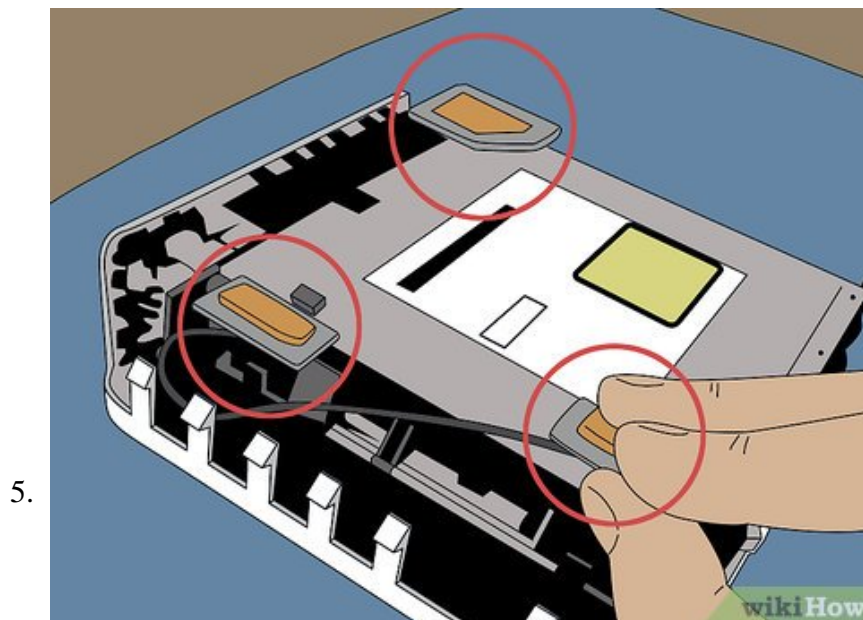
3.



Pry the round plastic plate away from the base. Slide the blade of a spudger or thin, flexible putty knife into the gap between the metal shell and plastic base of the computer. Once the blade is partially inserted, apply light outward pressure to the putty knife to pry the shell away from the base. You will hear some clicking sounds as the plastic latches disengage.



Remove the computer's interior from the aluminum shell. Once the base has been loosened from the shell, place your thumbs on the side of the computer with the ports. Apply gentle upward pressure to disengage the last latches, and carefully lift the entire interior assembly out of the metal shell. Set the shell aside, and place the interior gently onto the cloth.

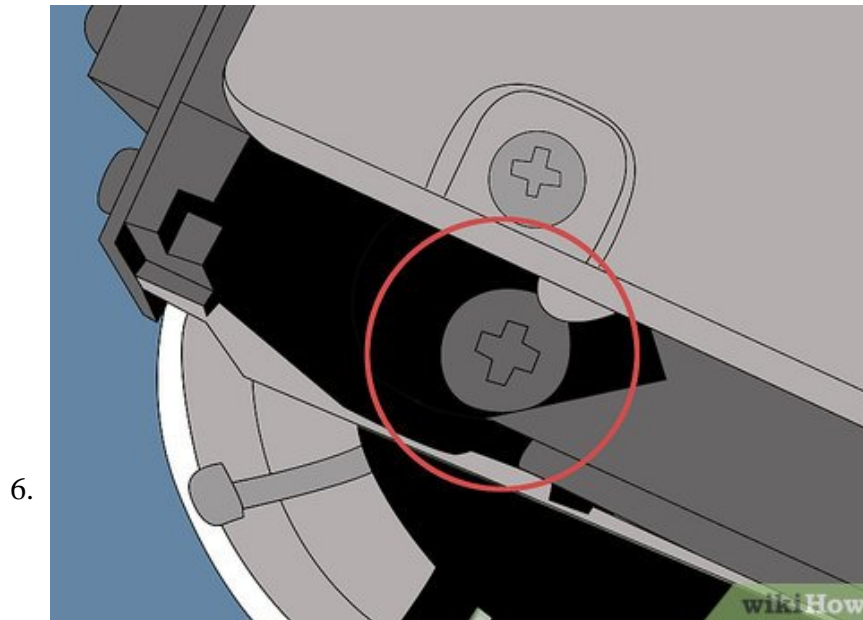


Disconnect the 3 connections between the upper and lower interior assembly. The interior of the Mac Mini consists of 2 main pieces, which are connected in 3 places. Here's how to disconnect those pieces:

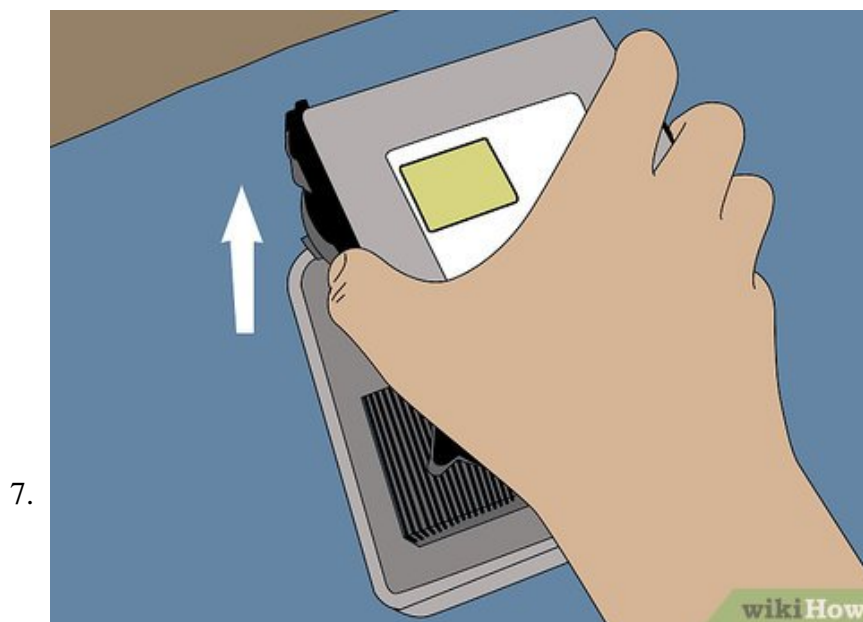
1. First, remove the Airport wireless antenna. This is a pentagonal-shaped plastic piece that sits against the corner of the optical drive. To remove it, place your pointer finger on top of it to steady it, and pinch the tubular base between your thumb and middle finger. Apply gentle pressure to the base and lift the antenna up and out of the assembly.
2. Next, remove the hard drive sensor cable. This cable is made from 2 small black wires, and is located on the same side of the assembly as the optical drive opening. To disconnect it, grab the

small gray plug at the end of the wires and pull it gently from its port. Do not attempt to remove the plug by pulling the wires themselves.

3. Finally, disconnect the flexible cable running between the audio board and the interconnect board. This cable is located on the side of the computer with the external ports, and looks like a wide, thin orange band. To disconnect it, pinch it between your fingers on the side nearest to the optical drive, and pull it out.



Unscrew the 4 screws connecting the 2 parts of the internal assembly. In each corner of the internal frame, there is a small screw attaching the 2 pieces together. Use a # 0 Phillips-head screwdriver to remove these screws. Note that 1 screw is longer than the others.



Lift the 2 assembly pieces apart. Once the cables and screws have been removed, lift the 2 pieces of the internal assembly apart. Your Mac Mini's internal components are now fully exposed. Make the necessary changes and reassemble the computer by retracing the process above.

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