iMac: How to remove or install memory

Summary
Learn how to remove or install memory in your iMac computer.

Products Affected
iMac, iMac (17-inch, Late 2006 CD), iMac (17-inch, Late 2006), iMac (20-inch Late 2006), iMac (20-inch, Early 2008), iMac (20-inch, Early 2009), iMac (20-inch, Mid 2007), iMac (20-inch, Mid 2009), iMac (21.5-inch, Late 2009), iMac (21.5-inch, Mid 2010), iMac (21.5-inch, Mid 2011), iMac (24-inch, Mid 2007), iMac (24-inch, Early 2008), iMac (24-inch, Mid 2008)

Choose your model
To identify your iMac model, use the information in How to identify iMac models.

17-inch
- iMac (17-inch, Late 2006 CD)
- iMac (17-inch, Late 2006)
- iMac (17-inch, Mid 2006)
- iMac (17-inch, Early 2006)

20-inch
- iMac (20-inch, Early 2009)
- iMac (20-inch, Early 2008)
- iMac (20-inch, Mid 2007)
- iMac (20-inch, Late 2006)
- iMac (20-inch, Early 2006)

21.5-inch
- iMac (21.5-inch, Mid 2011)
- iMac (21.5-inch, Mid 2010)
- iMac (21.5-inch, Late 2009)

24-inch
- iMac (24-inch, Early 2009)
- iMac (24-inch, Early 2008)
- iMac (24-inch, Mid 2007)

27-inch
- iMac (27-inch, Mid 2011)
- iMac (27-inch, Mid 2010)
- iMac (27-inch, Late 2009)

Applicable models
- iMac (27-inch, Mid 2011)
- iMac (21.5-inch, Mid 2011)
- iMac (27-inch, Mid 2010)
- iMac (21.5-inch, Mid 2010)
- iMac (27-inch, Late 2009)
- iMac (21.5-inch, Late 2009)

Memory specifications
These iMac models have these memory specifications:

<table>
<thead>
<tr>
<th>Number of memory slots</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base memory</td>
<td>4 GB (but is configured to order)</td>
</tr>
<tr>
<td>Maximum memory</td>
<td>16 GB</td>
</tr>
</tbody>
</table>

**Note:** For the iMac (Late 2009) models, you can use 2 GB or 4 GB RAM SO-DIMMs of 1066 MHz DDR3 SDRAM in each slot. For the iMac (Mid 2010) and iMac (Mid 2011) models, use 2 GB or 4 GB RAM SO-DIMMs of 1333 MHz DDR3 SDRAM in each slot.

Use Small Outline Dual Inline Memory Modules (SO-DIMM) that meet all of these criteria:

<table>
<thead>
<tr>
<th>iMac (Mid 2011)</th>
<th>iMac (Mid 2010)</th>
<th>iMac (Late 2009)</th>
</tr>
</thead>
</table>

Related Articles
- Mac Pro: How to remove or install memory
- Mac mini: How to remove or install memory
- MacBook: How to remove or install memory
- MacBook Pro: How to remove or install memory
- iMac (Late 2009) and later: Installing or replacing memory

Related Discussions
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- How to uninstall GarageBand 08 to install 09?
- Aperture: How to uninstall the trial PROPERLY so I can install ret...
- How do I delete the old user accounts from my Mac?
- How Many "Levels of Undo" With My iMac?
### Additional notes

i5 and i7 Quad Core iMac computers come with both top memory slots populated. These computers will not start up if only a single DIMM is installed in any bottom slot; these computers should operate normally with a single DIMM installed in any top slot. Core Duo iMac computers should operate normally with a single DIMM installed in any slot, top or bottom. (“Top” and “bottom” slots refer to the orientation of the slots in the pictures below. “Top” refers to the slots closest to the display; “bottom” refers to the slots closest to the stand).

### Removing or installing memory

**Warning:** The internal components of your iMac computer can be warm. If you have been using your iMac computer, wait ten minutes after shutting down the computer to let the internal components cool before continuing.

To install memory into the bottom slot, follow these instructions:

1. Turn off your computer by choosing the Apple () menu, then **Shut Down**.
2. Disconnect all cables and the power cord from your computer.
3. Place a soft, clean towel or cloth on the desk or other flat surface to prevent scratching the LCD display.
4. Hold the sides of the computer and slowly lay the computer face down.
5. Using a Philips screwdriver, remove the RAM access door in the bottom of your computer.
6. Remove the access door and set it aside.
7. Untuck the tab in the memory compartment. If you are replacing a memory module, gently pull the tab to eject any installed memory module.
8. Insert your new or replacement SO-DIMM into the empty slot, noting the orientation of the keyway of the SO-DIMM as shown below.

9. After you insert it, press the DIMM up into the slot. There should be a slight click when you seat the memory correctly.

10. Tuck the tabs above the memory DIMMs, and reinstall the memory access door.
11. Stand the computer in its upright position, reconnect the power cord and all other cables to the computer, then start up the computer.

Back to top

**Applicable models**
- iMac (24-inch, Early 2009)
- iMac (20-inch, Early 2009)
- iMac (24-inch, Early 2008)
- iMac (20-inch, Early 2008)
- iMac (24-inch Mid 2007)
- iMac (20-inch, Mid 2007)

**Memory specifications**
These iMac computers have two side-by-side Synchronous Dynamic Random-Access Memory (SDRAM) slots in the bottom of the computer.

The maximum amount of random-access memory (RAM) you can install in the computer is:

<table>
<thead>
<tr>
<th>Computer</th>
<th>Memory Type</th>
<th>Maximum Memory</th>
</tr>
</thead>
<tbody>
<tr>
<td>iMac (Mid 2007)</td>
<td>DDR2</td>
<td>4GB (2x2GB)</td>
</tr>
<tr>
<td>iMac (Early 2008)</td>
<td>DDR2</td>
<td>4GB (2x2GB)</td>
</tr>
<tr>
<td>iMac (Early 2009)</td>
<td>DDR3</td>
<td>8GB (2x4GB)</td>
</tr>
</tbody>
</table>

You can use a 1GB or 2 GB RAM module in each slot for iMac (Mid 2007) and iMac (Early 2008). Use 1GB, 2GB, or 4GB modules in each slot for the iMac (Early 2009).

Use Small Outline Dual Inline Memory Modules (SO-DIMM) that meet all of these criteria:

<table>
<thead>
<tr>
<th>iMac (Mid 2007)</th>
<th>iMac (Early 2008)</th>
<th>iMac (Early 2009)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC2-5300</td>
<td>PC2-6400</td>
<td>PC3-8500</td>
</tr>
<tr>
<td>Unbuffered</td>
<td>Unbuffered</td>
<td>Unbuffered</td>
</tr>
<tr>
<td>Nonparity</td>
<td>Nonparity</td>
<td>Nonparity</td>
</tr>
<tr>
<td>200-pin</td>
<td>200-pin</td>
<td>204-pin</td>
</tr>
<tr>
<td>667MHz DDR2 SDRAM</td>
<td>800MHz DDR2 SDRAM</td>
<td>1066MHz DDR3 SDRAM</td>
</tr>
</tbody>
</table>
DIMMs with any of the following features are not supported:

- Registers or buffers
- PLLs
- Error-correcting code (ECC)
- Parity
- Extended data out (EDO) RAM

Removing or installing memory

Warning: The internal components of your iMac computer can be warm. If you have been using your iMac computer, wait ten minutes after shutting down the computer to let the internal components cool before continuing.

To install memory into the bottom slot, follow these instructions:

1. Turn off your computer by choosing the Apple () menu, then Shut Down.
2. Disconnect all cables and the power cord from your computer.
3. Place a soft, clean towel or cloth on the desk or surface to prevent scratching the LCD display.
4. Hold the sides of the computer and slowly lay the computer face-down.
5. Using a Philips screwdriver, remove the RAM access door in the bottom of the computer.

6. Remove the access door and set it aside.
7. Untuck the tab in the memory compartment. If you are replacing a memory module, untuck the tab and pull it to eject any installed memory module.
8. Insert your new or replacement RAM SO-DIMM into the empty slot, noting the orientation of the keyway of the SO-DIMM as shown above.

9. After you insert it, press the DIMM up into the slot. There should be a slight click when you seat the memory correctly.

10. Tuck the tabs above the memory DIMMs, and reinstall the memory access door.

11. Stand the computer in its upright position, reconnect the power cord and all other cables to the computer, then start the computer.

Applicable models
iMac (20-inch Late 2006)
iMac (17-inch, Late 2006 CD)
iMac (17-inch, Late 2006)
iMac (17-inch, Mid 2006)
iMac (20-inch, Early 2006)
iMac (17-inch, Early 2006)

Memory specifications
These iMac models have these memory specifications:
### Number of memory slots

<table>
<thead>
<tr>
<th>Number of memory slots</th>
<th>Base memory</th>
<th>Maximum memory</th>
<th>Additional notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1 GB</td>
<td>4GB</td>
<td>For best performance, fill both memory slots, installing an equal memory module in each slot.</td>
</tr>
<tr>
<td></td>
<td>Two 512 MB DIMMs; one in each of the memory slots</td>
<td>2 GB SO-DIMM in each of the two slots*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>512 MB</td>
<td>2 GB</td>
<td>The computer will only use a maximum of 3 GB of RAM. For more information, refer to iMac (Late 2006): Memory Specifications.</td>
</tr>
<tr>
<td></td>
<td>One DDR2 SDRAM installed into the top slot</td>
<td>1 GB SO-DIMM in each of the two slots</td>
<td></td>
</tr>
<tr>
<td></td>
<td>512 MB</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Two 256 MB DIMMs; one in each of the memory slots</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>512 MB</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>One DDR2 SDRAM installed into the top slot</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Base memory

<table>
<thead>
<tr>
<th>Model</th>
<th>Memory Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>iMac (Late 2006)</td>
<td>1 GB</td>
</tr>
<tr>
<td>iMac (17-inch Late 2006 CD)</td>
<td>512 MB</td>
</tr>
<tr>
<td>iMac (Mid 2006)</td>
<td>512 MB</td>
</tr>
<tr>
<td>iMac (Early 2006)</td>
<td>512 MB</td>
</tr>
</tbody>
</table>

### Maximum memory

<table>
<thead>
<tr>
<th>Model</th>
<th>Memory Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>iMac (Late 2006)</td>
<td>2 GB SO-DIMM in each of the two slots*</td>
</tr>
<tr>
<td>iMac (17-inch Late 2006 CD)</td>
<td>1 GB SO-DIMM in each of the two slots</td>
</tr>
<tr>
<td>iMac (Early 2006)</td>
<td>1 GB SO-DIMM in each of the two slots</td>
</tr>
</tbody>
</table>

### Memory card specifications

**Compatible:**
- Small Outline Dual Inline Memory Module (DDR SO-DIMM) format
- PC2-5300
- Nonparity
- 200-pin
- 667 MHz
- DDR3 SDRAM

**Not compatible:**
- Registers or buffers
- PLLs
- ECC
- Parity
- EDO RAM

### Removing or installing memory

**Warning:** The internal components of your iMac computer can be warm. If you have been using your iMac computer, wait ten minutes after shutting down the computer to let the internal components cool before continuing.

**Installing memory in the bottom slot**

**Important:** When installing SDRAM DIMMs into the computer, press the DIMM up into the slot with your thumbs; do not use the DIMM ejector clips. Trying to push the DIMM into the slot using the ejector clips may damage the SDRAM DIMM.

To install memory into the bottom RAM slot, follow these instructions:

1. Turn off your computer by choosing the Apple () menu, then Shut Down.
2. Disconnect all cables and the power cord from your iMac.
3. Place a soft, clean towel or cloth on the desk or surface to prevent scratching the LCD display. Hold the sides of the computer and gently lay the computer face down.
4. Using a Phillips screwdriver, remove the RAM access door on the bottom of the iMac, as shown below.

   ![Removing or installing memory](image)

   5. Remove the access door and set it aside.
6. Move the DIMM ejector clips to their fully open position.
7. Insert your RAM SO-DIMM into the bottom slot, keeping in mind the orientation of the keyed SO-DIMM as shown.

8. After you insert it, press the DIMM up into the slot with your thumbs. **Do not use the DIMM ejector clips to push in the DIMM.** Trying to push the DIMM into the slot using the ejector clips may damage the SDRAM DIMM. There should be a slight click when you seat the memory fully.

9. Close the ejector clips.

10. Reinstall the memory access door.

11. Lift the iMac back to its normal upright position and reconnect the power cord and all other cables. Your computer is ready to start up now.

**Replacing memory in the top slot**

**Important:** When installing SDRAM DIMMs into the computer, press the DIMM up into the slot with your thumbs; do **not** use the DIMM ejector clips. Trying to push the DIMM into the slot using the ejector clips may damage the SDRAM DIMM.

To replace memory into the top RAM slot:
1. Turn off your computer by choosing the Apple () menu, then Shut Down.
2. Disconnect all cables and the power cord from your iMac.
3. Place a soft, clean towel or cloth on the desk or surface to prevent scratching the LCD display. Hold the sides of the computer and gently lay the computer face down.
4. Using a Phillips screwdriver, remove the RAM access door on the bottom of the iMac, as shown below.

5. Remove the access door and set it aside.
6. Pull the two levers on each side of the memory compartment to eject the memory module that’s already installed.

7. Remove the memory module from your iMac as shown below.

8. Insert your RAM SO-DIMM into the top slot, noting the orientation of the keyed SO-DIMM as shown below.
9. After you insert it, press the DIMM up into the slot with your thumbs. **Do not use the DIMM ejector clips to push in the DIMM.** Trying to push the DIMM into the slot using the ejector clips may damage the SDRAM DIMM. There should be a slight click when you seat the memory fully.

10. Close the ejector clips as shown below.

11. Reinstall the memory access door.

12. Lift the iMac back to its normal upright position and reconnect the power cord and all other cables. Your computer is ready to start up now.

**Additional Information**

**Checking that your computer recognizes the new memory**

After installing additional memory, you should confirm that the computer recognizes the new memory. To check the computer’s memory:

1. Start up your computer.

2. When you see the Mac OS X desktop, choose Apple () from the upper-left menu bar, then choose **About This Mac**.

The total memory includes the amount of memory that originally came with the computer plus the new memory you added, or if all the memory has been replaced, the new total for that memory. For detailed information about the amount of memory installed in your computer, open System Profiler by choosing Apple (), then **About This Mac**; click More Info and then Memory from the Hardware section that appears in System Profiler.

If your computer doesn’t recognize the memory or doesn’t start up correctly, confirm that the memory you installed is compatible with your iMac and that it is installed correctly by reseating the memory.