



# Power Mac G4 FAQ

## Overview

### Q. What are the key features of the Power Mac G4?

- A.** The new Power Mac G4 system delivers outstanding performance, innovative DVD and CD creation capabilities, and substantial expansion options.
- *Performance.* The Power Mac G4 offers the fastest-ever PowerPC G4 processor with Velocity Engine, achieving processing speeds up to 733 megahertz. The system architecture is improved and main memory can be expanded to 1.5 gigabytes.<sup>1</sup> The result is a 38 percent performance improvement over previous Power Mac G4 systems.
  - *Music CDs and interactive DVDs.* iTunes software and the CD-RW drive let you create custom music CDs on all new Power Mac systems.<sup>2</sup> Choose a configuration that includes the DVD-R/CD-RW drive and iDVD software, and the Power Mac G4 becomes the first affordable start-to-finish DVD authoring and recording solution.
  - *Highly expandable.* Now with five slots—one superfast AGP 4X graphics slot plus four high-performance PCI slots—the Power Mac G4 allows you to add video, audio, and SCSI cards to accomplish a wide range of professional tasks.

## Performance

### Q. What are the performance features of the new Power Mac G4?

- A.** The Power Mac G4 is faster as a result of the following performance enhancements:
- Processors running at 466, 533, 667, and 733 megahertz
  - Faster system bus running at 133 megahertz
  - Data throughput of over 1 gigabyte per second
  - PCI throughput of up to 215 megabytes per second
  - Gigabit Ethernet standard on all systems

### Q. What are the benefits of the new 667- and 733-megahertz processors? What makes them faster?

**A.** Higher-clock-speed processors result in faster performance. New on-chip level 2 cache and backside level 3 cache keep the 667- and 733-megahertz processors running at optimum speeds. Level 2 cache runs on the chip at processor speed, and level 3 cache runs on the processor module at one-third the processor speed. These improvements allow the new processors to operate with high efficiency, outperforming previous Power Mac G4 systems by approximately 38 percent.

### Q. Can I purchase a dual processor Power Mac G4?

**A.** Power Mac G4 systems with dual 533-megahertz processors are available as a build-to-order option from the online Apple Store at [www.apple.com/store](http://www.apple.com/store).



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**Q. Which is right for me—a dual processor or single-processor Power Mac G4 system?**

**A.** If you use optimized applications such as Adobe Photoshop and Final Cut Pro, you'll experience faster performance with a dual processor Power Mac G4. Otherwise, you'll experience overall performance gains on a Power Mac G4 with a single 667- or 733-megahertz processor. To learn more about dual processing and to find a list of optimized applications, visit [www.apple.com/powermac/multiprocessing.html](http://www.apple.com/powermac/multiprocessing.html).

**Q. Which applications support the PowerPC G4 with Velocity Engine?**

**A.** Many of the applications that are key to Apple's professional customers achieve substantial gains in performance running on a PowerPC G4 with Velocity Engine. Those applications include Apple Final Cut Pro, Deneba Canvas 7, Macromedia Director 8 Shockwave Studio, and Terran Interactive Media Cleaner Pro. You can find more information on optimized applications on the web at [www.apple.com/g4](http://www.apple.com/g4).

**Q. In what ways has the Power Mac G4 system architecture been improved?**

**A.** Several system architecture enhancements contribute to the performance gains of the Power Mac G4:

- The system bus has increased in speed from 100 to 133 megahertz.
- Data throughput has increased from 800 megabytes per second to over 1 gigabyte per second.
- The AGP 4X graphics slot is twice as fast as that of the previous G4 system.
- PCI throughput has increased from 100 to 215 megabytes per second.

**Q. How does the Power Mac G4 compare with computers running the Intel Pentium 4 processor?**

**A.** The PowerPC with Velocity Engine can process information in 128-bit chunks, compared with the 32- or 64-bit chunks in traditional processors. This means it can perform four (in some cases, eight) 32-bit floating-point calculations in a single cycle, two to four times faster than traditional processors. In terms of overall system performance, Photoshop runs 57 percent faster on a 733-megahertz Power Mac G4 than on a 1.5-gigahertz Pentium 4 system.

**Q. What kind of memory does the new Power Mac G4 require?**

**A.** The three DIMM slots in the Power Mac G4 support industry-standard 3.3-volt, unbuffered, 64-bit-wide PC133 SDRAM in 32-, 64-, 128-, 256-, or 512-megabyte-configurations.

## Graphics

**Q. What is the AGP 4X graphics slot?**

**A.** AGP (Accelerated Graphics Port) refers to the video card bus. This 4X bus can now transfer video data twice as fast as previous generations of Power Mac G4 systems. Every Power Mac G4 comes with a graphics card installed in the AGP 4X slot.



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#### **Q. What are the options for graphics cards?**

**A.** The following graphics cards are available as build-to-order options on any Power Mac G4 system:

- ATI RAGE 128 Pro with 16 megabytes of SDRAM
- NVIDIA GeForce2 MX with 32 megabytes of SDRAM
- ATI RADEON with 32 megabytes of Double Data Rate (DDR) RAM

#### **Q. Which displays can I connect to the Power Mac G4?**

**A.** Apple offers three display options. All Apple displays deliver unprecedented ease of setup and less cable clutter using the Apple Display Connector (ADC). Options include the following:

- Apple Studio Display, 17-inch Natural Flat Diamondtron CRT (16-inch viewable)
- Apple Studio Display, 15-inch digital flat panel
- Apple Cinema Display, 22-inch digital flat panel

Learn more about Apple displays at [www.apple.com/displays](http://www.apple.com/displays).

#### **Q. How do I connect other monitors to the new Power Mac G4?**

**A.** The video card that ships on all Power Mac G4 systems also has a standard VGA connector for connecting VGA-compatible displays. If you have an older Apple Cinema Display or Apple Studio Display with a DVI connector, you will need an adapter to connect it to the new Power Mac G4. This adapter is available through the Apple Store at [www.apple.com/store](http://www.apple.com/store).

## Expansion Capabilities

#### **Q. How can I expand my Power Mac G4?**

**A.** The Power Mac G4 can grow as your needs grow. In addition to an AGP 4X slot, the Power Mac G4 now has four 64-bit, 33-megahertz PCI slots, with data throughput of up to 215 megabytes per second. With built-in USB and FireWire ports, you can easily connect a wide range of peripherals including video camcorders and hard disk drives.

#### **Q. How has Apple been able to double the performance of the PCI slots?**

**A.** PCI performance has been significantly improved over the previous generation—from 100 to 215 megabytes per second—because data no longer has to pass through a PCI bridge. The functionality of the PCI bridge is now handled by the main I/O chip set, so your data can utilize the native 64-bit data path from the memory controller.

#### **Q. What kind of cards are available for use in the PCI slots on the Power Mac G4?**

**A.** The four high-performance PCI slots allow you to add functionality to your Power Mac G4 system. For example, an ATI RAGE 128 PCI card allows you to connect additional displays to your system. Serial port cards and SCSI cards allow you to connect legacy devices. Sound editing and video editing cards allow you to capture and digitize sound and video from both digital and analog sources.



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#### **Q. What is FireWire?**

**A.** FireWire is one of the fastest peripheral standards ever developed. The Power Mac G4 has two 400-megabit-per-second FireWire ports<sup>3</sup> that allow you to capture video directly from new DV camcorders with FireWire ports and from older analog equipment using an AV to FireWire converter box (available through the Apple Store at [www.apple.com/store](http://www.apple.com/store)). You can also use the FireWire ports to connect other high-speed devices such as hard disk drives and printers.

#### **Q. Can I use FireWire to connect two Macintosh computers?**

**A.** Yes. Using FireWire Target Disk Mode, you can connect any FireWire-equipped Mac to your Power Mac G4. The second computer will appear on the desktop as an external hard disk, providing a convenient way to move large files from one system to another. To use Target Disk Mode, connect the computers using a FireWire cable and restart the second computer while holding down the "T" key on its keyboard.

## Optical Drive Options

#### **Q. What are my choices for optical drives?**

- A.** You can outfit the new Power Mac G4 with one of the following optical drives:
- CD-RW (CD-rewritable) drive for creating CDs that play music and archive data, in addition to playing CD-ROMs and music CDs
  - Combination DVD-R/CD-RW drive for recording your own DVDs (authored on the Power Mac G4 using iDVD or DVD Studio Pro), as well as for running CD-ROMs, playing DVDs and music CDs, and creating CDs that play music and archive data
  - DVD-ROM drive for playing CD-ROM titles, audio CDs, and DVDs (build-to-order only)

#### **Q. What disc formats do the new optical drives read?**

- A.** The optical drives on the new Power Mac G4 support a wide variety of media.
- The CD-RW drive reads CDs at 32x, writes to CD-R at 8x, and writes to CD-RW at 4x. The drive supports CD-ROM, CD-Audio, CD-R, CD-RW, CDI, CD Bridge, CD Extended, CD Mixed Mode, and Photo CD media.
  - The DVD-R/CD-RW drive reads DVDs at 6x (7.8 megabytes per second), writes to DVD-R at 2x (2.6 megabytes per second), reads CDs at 24x (3.6 megabytes per second), writes to CD-R at 8x (1.2 megabytes per second), and writes to CD-RW at 2x (300 kilobytes per second). The drive supports CD-ROM, CD-Audio, CD-R, CD-RW, CDI, CD Bridge, CD Extended, CD Mixed Mode, Photo CD, DVD-Video, DVD-ROM, and DVD-R media.

#### **Q. What are the benefits of the CD-RW drive?**

**A.** The CD-RW drive allows you to create CDs for a variety of functions. Not only can you burn custom music CDs using iTunes software (available by free download from [www.apple.com/itunes](http://www.apple.com/itunes)),<sup>2</sup> but you can also archive all kinds of data files. For example, you can back up important parts of your hard drive, create a digital photo album, catalog your financial records, or transfer large files from one computer to another.



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#### **Q. What is the difference between CD-R and CD-RW media?**

**A.** The CD-RW drive on the new Power Mac G4 systems supports both CD-R and CD-RW media. A comparison of the two media follows:

- CD-R is short for CD-recordable. CD-R media is usually better for music, because it is more compatible with most audio CD players. Depending on the application you use, you may be able to record multiple data sessions on CD-R media. However, once recorded, the information cannot be overwritten.
- CD-RW is short for CD-rewritable. CD-RW media is usually better for data archival applications. With CD-RW media, you can save, change, and resave the information you record on your CDs.

#### **Q. What media do I need to burn music CDs using the CD-RW drive?**

**A.** Apple recommends CD-R media with a 74-minute capacity. Using “high speed” media is not recommended. To ensure the best results, purchase your CD media from the online Apple Store at [www.apple.com/store](http://www.apple.com/store).

#### **Q. What are the benefits of the combination DVD-R/CD-RW drive?**

**A.** Apple’s revolutionary DVD-R/CD-RW drive lets you create music CDs, archive data on CD-RW media, and burn DVD-Video discs for playback on most standard DVD players. The Power Mac G4 is the first computer to ship with a drive capable of recording DVD videos. Now at an unprecedented low cost, the DVD-R/CD-RW drive on the Power Mac G4—combined with iDVD encoding and authoring software—gives you a complete DVD production solution.

#### **Q. What media do I need to burn DVDs?**

**A.** The DVD-R drive on the new Power Mac G4 systems uses 4.7-gigabyte DVD-R General media, available from the online Apple Store at [www.apple.com/store](http://www.apple.com/store). For information on compatibility of DVD-R media with standard DVD players, visit [www.apple.com/dvd/dvdcompatibility](http://www.apple.com/dvd/dvdcompatibility).

## Movies, DVDs, and Music

#### **Q. Does the Power Mac G4 really offer everything I need to create Desktop Movies and DVDs? Which features allow me to do this?**

- A.** The Power Mac G4 can include all the tools you need to transfer digital video footage, turn it into movies, and even produce DVDs.
- The FireWire ports allow you to quickly and easily import DV source material from digital camcorders.
  - iMovie software (included with the Power Mac G4) or optional Final Cut Pro software allows you to create Desktop Movies.
  - Power Mac G4 systems with a DVD-R drive also come with iDVD software, giving you all the hardware and software you need to burn DVD-Video discs.



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**Q. What exactly is DVD authoring, and how does it work on the Power Mac G4?**

**A.** DVD authoring is the process of preparing digital movies, audio, and slide shows for recording onto DVDs. With Apple's revolutionary iDVD software and a DVD-R drive, nonexperts will have the tools to create interactive DVDs from start to finish. For video professionals, DVD Studio Pro provides tools to create DVDs that include every feature in the DVD-Video standard: still or motion menus, buttons, subtitles, multiple audio tracks, Dolby audio, web links, and more. For information on DVD authoring, visit [www.apple.com/dvd](http://www.apple.com/dvd).

**Q. Can I use my Power Mac G4 system to make DVDs that run on the DVD player connected to my TV? What about the DVD players on Windows computers?**

**A.** DVDs created on your Power Mac G4 are fully compatible with the DVD-Video standard. Your DVDs will run on most set-top and computer-based players that are compliant with the DVD-Video standard.

**Q. What are the main features of iDVD?**

**A.** iDVD is included in Power Mac G4 systems with a DVD-R drive. This easy-to-use software allows you to encode and assemble video files and record them using the DVD-R drive. Just drag movies edited with iMovie or Final Cut Pro into the iDVD interface. iDVD software takes care of all the details of authoring basic yet highly functional DVDs, allowing you to create menus, buttons, and slide shows with just a few clicks. For more information, visit [www.apple.com/idvd](http://www.apple.com/idvd).

**Q. What are the main features of DVD Studio Pro?**

**A.** DVD Studio Pro handles the MPEG encoding, menu creation, asset organization, linking, and output formatting required to produce DVDs. Professionals who work with digital video and multimedia are now able to move away from low-resolution videotape and begin distributing their work on more durable, higher-quality DVDs. DVD Studio Pro allows you to take advantage of every feature outlined in the DVD-Video standard, making it a professional-level authoring tool. For more information, visit [www.apple.com/dvdstudiopro](http://www.apple.com/dvdstudiopro).

**Q. What are the main features of iTunes?**

**A.** Apple's new iTunes software takes the confusion out of managing your personal music collection. iTunes turns your Power Mac G4 into a powerful digital jukebox, complete with easy-to-use tools for recording music from audio CDs, searching and browsing your entire music collection, downloading songs to MP3 players, and even burning your own custom CDs. Best of all, iTunes is available as a free software download for all new Macs at [www.apple.com/itunes](http://www.apple.com/itunes).<sup>2</sup>

## Audio

**Q. What audio capabilities does the new Power Mac G4 support?**

**A.** The new Power Mac G4 supports multiple audio output capabilities. It includes an internal speaker; a powerful built-in amplifier for the new Apple Pro Speakers; a standard headphone jack for headphones or externally powered speakers; and USB and FireWire ports for third-party microphones, speakers, and MIDI devices. Check the Apple Store at [www.apple.com/store](http://www.apple.com/store) for the latest Mac-compatible products.



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**Q. What is the difference between the Apple speaker minijack and the headphone jack?**

**A.** Headphones or externally powered speakers connect to the standard headphone jack. The minijack is specially designed to be used with the Apple Pro Speakers.

**Q. What are the benefits of the new Apple Pro Speakers?**

**A.** The optional Apple Pro Speakers feature powerful Harman Kardon audio technology. They connect to your system using a single cable and provide excellent sound quality with a frequency range of 70 hertz to 20 kilohertz. The Apple Pro Speakers can be used in conjunction with the Harman Kardon iSub system to enrich your audio experience even more. For more information, visit [www.apple.com/speakers](http://www.apple.com/speakers).

**Q. How are the Apple Pro Speakers different from the speakers that come with the Power Mac G4 Cube?**

**A.** While the Apple Pro Speakers look very similar to the G4 Cube speakers, the Apple Pro Speakers require a system with an Apple speaker minijack, such as the new Power Mac G4. By contrast, the G4 Cube speakers are USB-powered and designed to work only with G4 Cube systems. The G4 Cube speakers have an external amplifier, whereas the Power Mac G4 has an internal amplifier to support the Apple Pro Speakers.

**Q. How can I connect a microphone to the Power Mac G4?**

**A.** You can connect a USB microphone directly to one of the USB ports. To connect analog microphones to the Power Mac G4, you can use a converter box. Apple offers converter boxes as well as digital USB microphones through the Apple Store at [www.apple.com/store](http://www.apple.com/store).

## Software

**Q. What software is included with my Power Mac G4 system?**

**A.** The Power Mac G4 comes with the following software installed: QuickTime, iMovie 2, Microsoft Internet Explorer, Microsoft Outlook Express, Netscape Communicator, FAXstf Pro, and Palm Desktop. iTunes is available by free Internet download from [www.apple.com/itunes](http://www.apple.com/itunes).<sup>2</sup> Systems with a DVD-R/CD-RW drive include iDVD.

**Q. Which operating system comes with the new Power Mac G4?**

**A.** The Power Mac G4 comes with Mac OS 9.1 preinstalled, and it will run Mac OS X when it becomes available.

<sup>1</sup> 999MB maximum per application in Mac OS 9.

<sup>2</sup> iTunes software requires Internet download; Internet access fees may apply.

<sup>3</sup> Actual rates will vary.

## For More Information

For more information about the Power Mac G4, visit [www.apple.com/powermac](http://www.apple.com/powermac).

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