



PowerBook G4 FAQ

Overview

Q. What is new in the latest PowerBook G4?

A. The PowerBook G4 features a new architecture, highlighted by PowerPC G4 processors operating at 550 or 667 MHz, 256K of on-chip level 2 cache, system bus speeds up to 133 MHz, fast Ultra ATA/66 hard drives up to 48GB,¹ and the ATI Mobility Radeon graphics processing unit with 16MB of DDR RAM. AirPort is now standard in the 667-MHz configuration, and Gigabit Ethernet has been added to all configurations to give users the fastest possible network connection on a notebook computer. Users can also choose to configure the PowerBook G4 with a slot-loading CD-RW drive instead of the standard DVD-ROM drive.

Q. How can I tell the difference between the new PowerBook G4 and the previous PowerBook G4?

A. Because the 1-inch-thin, 5.3-pound² titanium enclosure was so well received, the new PowerBook G4 inherits a stunning design that is very similar to its predecessor. The easiest way to tell the difference between the two systems is to look at the back of the case. The new PowerBook G4 has a set of vents in the door that covers the expansion ports.

Q. What are the benefits of the titanium enclosure?

A. The titanium enclosure helps make the computer not only lightweight but durable. With the strength of steel but about half its mass, titanium has an exceptional strength to weight ratio. That's why it's used extensively in such diverse products as airframes, jet engines, camera bodies, golf clubs, and bicycle frames. Unlike portable computers that have only a plastic cover with titanium flecks, the PowerBook G4 is encased in a titanium enclosure made of 99.5 percent pure commercial-grade titanium.

Q. What are the benefits of the 15.2-inch mega-wide display?

A. The wide-format PowerBook G4 display has 1152-by-768-pixel resolution for a 3:2 aspect ratio. Compared with a 14.1-inch display, the PowerBook G4 display has approximately 12 percent more usable screen space. This additional area provides more room for working in graphics applications that require tools and palettes, using multiple applications simultaneously, displaying side-by-side web browser windows, and watching wide-format DVD movies.

Performance

Q. How does the performance of the 667-MHz PowerPC G4 processor compare with that of the Intel Mobile Pentium III processor?

A. The 667-MHz PowerBook G4 on average outperforms 1.13-GHz Intel Pentium III-based notebook systems—one of the fastest on the market—by over 48 percent, based on processor tests using Adobe Photoshop. (Data is based on Adobe Photoshop tests as of October 1, 2001.)



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Q. What are the advantages of the PowerPC G4 processor with Velocity Engine?

A. Much of the performance benefit of the PowerPC G4 comes from the Velocity Engine, a vector processing unit with parallel processing technology that was pioneered in multimillion-dollar supercomputers. The Velocity Engine can greatly accelerate intensive calculations, which means that demanding design programs, scientific applications, and graphics-intensive games get a significant performance boost. The Velocity Engine works on a whole set of data simultaneously, rather than one data point at a time—much as a multiple-lane freeway allows more traffic than a single-lane road. The net result is dramatically faster performance when using applications that have been optimized for the PowerPC G4. For more information on the PowerPC G4 processor, visit www.apple.com/g4.

Q. Which applications have been optimized for the PowerPC G4?

A. Many popular creative and technical applications have been optimized for the Velocity Engine, including Adobe Photoshop, Apple's Final Cut Pro, Macromedia Director, MPEG Power from Heuris, and Media Cleaner Pro from Terran Interactive. For a list of applications that support the Velocity Engine, visit www.apple.com/g4.

Q. What is level 2 cache, and why is it important to performance?

A. Level 2 cache is high-speed memory that is set aside to complement the functionality of the processor. Caching improves system performance by providing quick access to data and instructions en route to the processor. The new PowerBook G4 systems feature 256K of on-chip level 2 cache. That means the speed of data transfer from the processor to the cache is the same as the processor speed. In other words, the cache speed is 550 MHz for the 550-MHz processor and 667 MHz for the 667-MHz processor.

Q. What does 4200-rpm or 5400-rpm Ultra ATA/66 technology mean in terms of hard drive performance?

A. Ultra ATA is the drive interface and 66 refers to the speed (in megabytes per second) of the drive connection. Rpm stands for revolutions per minute and is a measurement of the rotation speed of the disk drive. The higher the rpm, the better the performance, because data can be accessed faster. This is important when working with large files such as video clips of high-resolution images.

Video and Graphics

Q. What graphics accelerator is used in the new PowerBook G4?

A. The new PowerBook G4 incorporates ATI Technologies' Mobility Radeon graphics processing unit. It provides AGP 4X support and faster 2D and 3D graphics performance in design applications and games, thanks to its increased engine speed of 166 MHz and its use of 16MB of 166-MHz DDR RAM. In the previous PowerBook G4, Quake performance was 22.6 frames per second at 1024-by-768-pixel resolution and thousands of colors on the 500-MHz configuration. In the new 667-MHz PowerBook G4, the frame rate is 44.7 frames per second.

Q. Is the 16MB of DDR-RAM video memory upgradable?

A. The video memory is soldered onto the logic board and is not upgradable.

**Q. What is resolution scaling?**

A. You can increase the size of the images on the PowerBook G4 display by switching from the native 1152-by-768-pixel resolution to a scaled resolution—either 896 by 600 pixels or 720 by 480 pixels. The new, larger image is remapped into the fixed pixel space of the LCD display. Because they are remapped, the scaled resolutions may not appear as sharp as the native resolution.

Q. Can I use an external monitor with the new system?

A. Yes. The PowerBook G4 connects to external VGA monitors through the VGA video output port. Using the external monitor is easy. After connecting the monitor to the PowerBook, turn them both on, then press the Command key and the Brightness Up/F2 key to have the PowerBook automatically detect the new monitor.

Q. What are dual display and video mirroring modes?

A. Dual display mode extends your desktop workspace, literally adding screen real estate. In this mode, application windows can be placed on either display, and the cursor can move back and forth between displays. This feature is especially helpful when you're working in applications such as Adobe Photoshop and Final Cut Pro.

Video mirroring is also a useful feature, especially for presenters. Video mirroring displays the same image on the built-in display and the external display device—a projector, TV, or VGA monitor.

You can easily switch between video mirroring and dual display mode by pressing the Command key and the Brightness Down/F1 key.

Q. What are the benefits of hardware video mirroring?

A. With hardware video mirroring, you can show video content such as QuickTime clips, movies created with iMovie, and Final Cut Pro composited video in video mirroring mode with smooth video playback.

Q. Can I operate the PowerBook G4 with the lid closed and a single external display connected?

A. Yes. You can designate all of the video memory to drive a single external display. In this mode, a maximum resolution of 1920 by 1440 pixels at millions of colors can be viewed on the external display.

Q. Does the PowerBook G4 support the Apple Display Connector (ADC)?

A. No. Apple displays with the ADC connector are supported only by Power Mac G4 computers with ADC.

Q. Can I use a TV with this computer?

A. Yes. The S-video port allows external display on a TV, or display and recording through VCRs. The computer also comes with an S-video to composite adapter in case you need a composite connection.



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Communications

Q. What is Gigabit Ethernet?

A. Gigabit Ethernet provides a theoretical raw data bandwidth of 1000 megabits per second (Mbps), or 1 gigabit per second (Gbps), enabling the PowerBook G4 to provide the highest-speed network connection available in a portable computer. The interface is autosensing, so you simply plug in the Ethernet cable and let the interface configure itself appropriately for the type of network you have (10 Mbps, 100 Mbps, or 1000 Mbps). This port can also be used to connect the PowerBook to a DSL or cable modem.

Q. Can I connect another system to my PowerBook G4 using Ethernet?

A. Yes. You can connect the PowerBook G4 to a second system directly with a standard Ethernet cable. No crossover cable is necessary because the system automatically senses and adapts to a computer-to-computer or network connection. To connect multiple systems, use an Ethernet hub.

Q. Does the PowerBook G4 support AirPort wireless networking?

A. All PowerBook G4 systems support AirPort, Apple's high-speed wireless local area network technology.³ Two integrated AirPort antennas and a dedicated AirPort Card slot are built into every PowerBook G4. An AirPort Card is preinstalled in the 667-MHz configuration and is optional in the 550-MHz configuration.

Q. Does AirPort require special software?

A. AirPort software is included with the Mac OS installed in every PowerBook G4 system. The software includes AirPort Setup Assistant, which walks you through the setup process.

Q. Do I need a special Internet connection to use AirPort?

A. No. AirPort works with a standard telephone dialup or Ethernet connection, or with a high-speed connection over a DSL or cable modem.³ For more information on AirPort, see www.apple.com/airport.

Q. Does the modem work internationally?

A. Yes. With the proper telephone cables and connectors, you can use the modem internationally.

Q. Can I connect my PowerBook G4 to the Internet using my cell phone?

A. Yes. Certain digital phones from Ericsson, Nokia, and Motorola allow you to connect to dialup services when they are connected to the PowerBook by cable or infrared. This generally requires phone hardware using the GSM standard and an additional service fee. Check with your mobile phone provider to determine whether your service offers this capability. Third-party developers also offer wireless PC Card modems for use in the PC Card/CardBus slot of the PowerBook. For more information on third-party products, go to www.apple.com/guide.

Q. What can I do with the PowerBook G4 infrared capability?

A. The infrared capability enables you to wirelessly connect and synchronize data with handheld devices, cell phones, infrared-equipped peripherals, and other PowerBook systems. The infrared window is located on the back left corner of the computer.



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Input/Output Technologies

Q. Can I burn CDs if I have a PowerBook G4 with an internal DVD-ROM drive?

A. Yes. You can connect an external FireWire or USB CD-RW drive and use the preinstalled iTunes software⁴ to burn audio CDs or use the Disc Burner feature of Mac OS 9 or Mac OS X to create data CDs. Visit www.apple.com/itunes/compatibility for a list of compatible external CD-RW drives.

Q. Can I watch DVD movies if I have configured my PowerBook with an internal CD-RW drive?

A. No. The internal CD-RW drive allows you to burn CDs, play audio CDs, or read data from CD-ROM discs.

Q. Can FireWire devices be powered by the PowerBook G4?

A. Yes. The FireWire port on this system provides up to 7 watts of power for FireWire devices, which means that devices such as an external hard drive can be used without an external power adapter for the drive.

Q. How many FireWire devices can I use with the PowerBook G4?

A. The FireWire port supports up to 63 devices. Most FireWire devices, such as hard drives, have two ports, so they can be daisy-chained together. Daisy-chained devices require independent power supplies.

Q. How does the use of FireWire devices affect battery life?

A. Operating a self-powered FireWire device (such as a battery-powered DV camcorder) from the computer's battery power does not affect battery life significantly. Operating devices that draw power (such as a FireWire hard drive) reduces battery life to some degree depending on the device's power requirements. To conserve battery life, disconnect these devices when they are not in use.

Q. Does the system support SCSI devices?

A. The PowerBook G4 does not have a built-in SCSI port. Several third-party adapters are available, however, including PC Card SCSI adapters and FireWire to SCSI adapters. For more information, visit www.apple.com/guide.

Q. Can I connect external speakers and a microphone to the PowerBook G4?

A. Yes. In addition to the integrated speakers and microphone, you can connect external speakers or headphones to the system via the headphone (stereo sound output) port on the left side of the system. An external USB microphone and USB speakers can be connected through the USB ports. In addition, line-level audio can be provided through various USB adapters. For more information on these peripherals, visit www.apple.com/guide.



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Software

Q. Which operating system software comes with the PowerBook G4?

A. Mac OS 9.2 and Mac OS X version 10.1 are preinstalled on the new PowerBook G4. The first time you turn it on, the PowerBook G4 will start up in Mac OS 9.2. You can use the Startup Disk control panel to restart the computer in Mac OS X.

Q. What other software is included with the PowerBook G4?

A. The PowerBook G4 comes with the following software.

- Digital video editing software—iMovie 2⁴
- Digital audio management software—iTunes⁴
- Internet software—Microsoft Internet Explorer and Netscape Communicator
- Productivity software—Microsoft Outlook Express, FAXstf, Palm Desktop, and Adobe Acrobat Reader

Q. Can I use iDVD on my PowerBook G4?

A. No. Apple's iDVD software works only on systems that have a SuperDrive (currently only select Power Mac G4 models).⁴ However, with DVD Studio Pro, you can author DVDs and then send your project to a service bureau to write it to disc.

Battery and Power Adapter

Q. What is the battery life of the PowerBook G4?

A. The PowerBook G4 runs for up to 5 hours on one fully charged battery using the power-saving features in the Energy Saver control panel.⁵ When playing DVD movies, battery life is up to 2 hours with one fully charged battery. Batteries can be swapped while the system is in sleep mode if required.

Q. How much time do you have to swap in a new battery while the system is in sleep mode?

A. The backup battery maintains the contents of RAM for up to 3 minutes.

Q. How long does it take to charge a completely depleted battery?

A. The battery requires approximately 3 hours to charge completely when the system is shut down or in sleep, and approximately 4 hours while in use.

Q. What do the lights on the bottom of the battery do?

A. The four lights are the battery charge indicators. You can press the button next to the lights to see how much charge is left in the battery; they work whether the battery is in or out of the system. The lights indicate the amount of charge in one-quarter increments. These lights also illuminate when the system is plugged into AC power to indicate that the battery is charging. The lights go off after charging is complete.

Q. Are the batteries for the previous PowerBook G4 and the new PowerBook G4 interchangeable?

A. Yes. Note that the previous generation had a battery with a 50-watt-hour rating. The battery in the new PowerBook G4 has a rating of 55.3 watt hours.



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Q. What are the advantages of the new power adapter?

A. The new power adapter has been designed for optimal portability—it has a square shape to fit into the corner of a briefcase, pop-out hooks to wrap the cable, and the ability to swap the AC cord for an AC plug, which eliminates the need to carry an additional cord.

Q. What does the light on the power adapter connector indicate?

A. When the light is amber, it means the battery is in the process of being charged. When the light is green, it means the battery is fully charged.

Q. Does the power adapter used with the previous PowerBook G4 model work with the new PowerBook G4?

A. Yes. Both power adapters can be used with either system.

Security

Q. Can I lock the PowerBook G4 keyboard?

A. Yes. The keyboard lock is located between the F5 and F6 keys. Use a small standard screwdriver to activate the lock, which secures the keyboard and prevents someone from opening it easily. This feature is designed to prevent casual theft of RAM from the system.

Q. Is there a cable lockdown system?

A. Yes. The PowerBook G4 has a slot for a lockdown cable located on the right rear side of the system. Kensington and other suppliers have produced new, low-profile designs that work with the PowerBook G4 case.

Q. Does the system have a software password feature?

A. Yes. Multiple Users password verification is built into Mac OS 9 and Mac OS X, which are installed in every new system. This security feature prevents access to your files and applications in case your computer is lost, stolen, or left unattended.

¹ 1GB = 1 billion bytes; actual formatted capacity less.

² Weight varies by configuration and manufacturing process.

³ Wireless Internet access requires AirPort Card, AirPort Base Station, and Internet access (fees may apply). Some ISPs are not currently compatible with AirPort. Range may vary with site conditions.

⁴ iDVD, iMovie, and iTunes are licensed for legal or rightholder-authorized use only.

⁵ Battery life depends on configuration and use.

For More Information

For more information about the PowerBook G4, visit www.apple.com/powerbook.

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