



AirPort

Wireless Networking A Technical Overview

Understanding and Using
AirPort Networks
AirPort 1.1

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Introduction

With the introduction of Apple's AirPort technology, wireless networking has become an option for users who want the benefits of wireless functionality without the complications. The information in this paper complements the AirPort manual by providing technical insight into AirPort and wireless networking in general.

Now there's a simple, affordable way to bring the Internet to a home, classroom, or small business—without cabling, additional phone lines, or complicated networking hardware. AirPort, Apple's 11-megabit-per-second (Mbps) wireless local area network (LAN) technology, enables fast and reliable wireless communications between multiple computers and the Internet. AirPort is a fully integrated hardware and software solution designed to work optimally and seamlessly with Macintosh computers.

Because AirPort is simple to set up and easy to use, it's an ideal solution for working, playing, or collaborating over the Internet. The fast transfer rate—up to 10 times faster than other home networking products—means that AirPort can easily handle the most demanding Internet file sharing or multiplayer gaming. AirPort allows multiple computer users to simultaneously access different websites and email through a single Internet connection. Users of AirPort-enabled computers can also exchange files without floppy disks or other media.

AirPort is based on the IEEE 802.11 Direct Sequence Spread Spectrum (DSSS) worldwide industry standard, so it allows for interoperability with other 802.11-based equipment. It uses radio frequency technology that enables it to communicate even through solid objects such as walls.

AirPort Products

There are two products in the AirPort product line: an AirPort Card that goes into each computer and an AirPort Base Station that communicates with nearby AirPort-enabled computers and the wired network or Internet.

AirPort Card

The 11-Mbps AirPort Card is available for all new Macintosh computers—iBook, iMac, PowerBook, and Power Mac G4. The credit-card-size card is user installable and comes with all the software needed to set up and operate an AirPort network. The same card is used in all AirPort-ready computers.



AirPort Base Station

Similar to the base station of a cordless telephone, the AirPort Base Station uses a physical connection to access the Internet and wireless connections to communicate with the AirPort-enabled computers. The base station has an RJ-11 connector for the built-in 56-kilobit-per-second V.90 modem.* There is also an RJ-45 connector for the built-in 10BASE-T Ethernet connection that allows users to connect to Ethernet or a DSL modem.

Two software tools are available to configure the base station: the AirPort Setup Assistant for simple network setup and the AirPort Admin Utility for advanced, custom configurations. The Setup Assistant uses the computer's active Internet access settings to configure the wireless network settings. The utility can be used to modify the base station's previous Internet access settings or to enter new settings.

AirPort Software Base Station feature

Instead of purchasing a separate hardware base station, you can use an AirPort-enabled computer to provide Internet access to other AirPort-enabled computers. A computer that is set up to function in this way is known as a software base station. The software base station allows an AirPort-enabled computer to act as a base station for an AirPort network. The software directs the data to and from other computers on the wireless network and out to the Internet through a simple network by acting as a router.

In this scenario, when an AirPort-enabled computer wants to access the Internet, it establishes a connection with the software base station. The software base station then establishes the Internet connection (through the computer's modem), and routes the wireless TCP/IP Internet traffic between the Internet service provider (ISP) and the AirPort-enabled computers on the network. The user capacity of the software base station network depends on the speed of the computer that has the software base station enabled and the speed of the network connection.

AirPort

AirPort Products

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Users enable the software base station feature through the Setup Assistant or AirPort application. Once you have set up your computer to function as a software base station, you can easily turn the software base station on and off using the Control Strip.

The software base station-enabled computer must be on and not in sleep mode for the software base station software to work. If you stop your computer from functioning as a software base station, all computers currently connected to the software base station will be disconnected from the network.

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