

Frequently Asked Questions

Applications

Q. What is a wireless LAN?

A. A wireless LAN is an extension of a wired network. It gives mobile workers the freedom to roam around a building or campus while staying connected to the network, maintaining access to the Internet, receiving and sending e-mail, and printing documents. All of this is accomplished without wires.

Q. What are some of the applications of wireless LANs?

A. The following are some of the applications made possible through the power and flexibility of wireless LANs:

- Sales managers making real-time decisions in meetings based on current forecasting and inventory information.
- Visiting employees to a branch office quickly checking e-mail or exchanging information without making a wired network connection.
- Network-ready conference rooms where employees access e-mail, applications, and the Internet, or conference rooms which can be easily converted into training rooms without rewiring.
- On-site consultants and small workgroups improving productivity through the use of an ad hoc network at another company.
- Hospital personnel providing better service by accessing a complete patient profile on a handheld or notebook computer upon entrance into a patient's room.
- Network managers in dynamic environments minimizing the overhead of moves, additions, and changes, thereby reducing network operating costs.
- Students at universities using wireless connectivity to access digital libraries, conduct research, and pick up homework assignments.

Q. Why would I need a desktop PC to be wireless?

A. There are a number of situations where a wireless solution would be required for desktop PCs. Some situations can include:

- Buildings or office space where it is difficult or impossible to pull cables, such as places with brick walls or asbestos in the ceiling.
- Locations that have stand-alone PCs, such as schools and libraries.
- Places where PCs are needed temporarily, such as crisis management centers, or other ad hoc groups.

Technology and Features

Q. Will this signal travel through walls?

A. Yes. 3Com AirConnect wireless LAN PC and PCI Cards send signals using radio frequencies which will go through many barriers, including glass, cubicle walls and wooden walls. This allows a signal to be received around corners when a barrier cannot be penetrated.

Q. Is this a shared or switched technology?

A. The AirConnect solution includes an Access Point (a generic term for a wireless hub), which is a shared medium.

Q. Can I set up a completely wireless LAN, without attaching to a wired backbone?

A. No. In order to have access to network services, such as e-mail, Internet access, network-based applications, and printing, the wireless LAN must be connected to the wired backbone.

Q. How secure is this?

A. The AirConnect solution supports multiple layers of security. In order to gain access to the network you must first know the network ID of an Access Point. Once associated with an Access Point, the user has the same security provided on the network: authentication with login ID, password, and so on. This coming April, AirConnect will support the Wired Equivalent Privacy (WEP), which is a standards-based security protocol for wireless. The AirConnect solution uses an RC4 algorithm with a 40-bit or 128-bit key to encrypt the wireless portion of data transmission. 3Com is working on an IPSec, a 56-bit DES encryption and 168 3DES solution that will be enabled on our wireless technology in the future.

Q. How can I manage the devices? Will there be custom wireless management?

A. You can manage individual AirConnect Access Points via a serial connection, Telnet, SNMP, PPP, or a Web browser. Because the AirConnect solution supports SNMP, you can use any SNMP-based management applications to manage it. In addition, 3Com's Transcend® Network Control Services 1.1 for Windows NT supports management for the Access Points.

Q. What is the AC power voltage?

A. The Access Point ships with a universal power supply. In addition, a version of the product will ship with extra cord adapters that include the correct prong type for the UK, continental Europe, and Australia.

Q. Is this the same as the Symbol product?

A. 3Com and Symbol co-developed the current 3Com product offering. Wireless LANs have historically been adopted in specific vertical markets, and no vendor has been more successful in these than Symbol. 3Com, on the other hand, has a well-deserved reputation for supplying reliable, manageable, high-performance end-to-end networking solutions to the broader corporate marketplace. As a result, the 3Com AirConnect products combine the best experience of both companies to deliver the most wired-like LANs possible for enterprise customers. While 3Com brings power over 10BASE-T, value-added software, and mechanical design, Symbol contributes drivers, utilities and tools, and hardware design to the development effort.

Q. Will you support Linux or Macintosh?

A. We currently have no plans to support Linux. As demand grows, however, we will consider developing drivers to support it. Conversely, Macintosh is a priority for 3Com and a third party will most likely provide drivers. Information on availability will be announced at a later date. We will also test with Apple's Airport product to ensure compatibility.

Q. What is the difference between Bluetooth and 802.11b?

A. Bluetooth is a 1 Mbps technology designed to connect devices that are in close proximity, such as Palm Computing handhelds to smart phones, notebooks to printers, and phones to headsets. 802.11b is a full LAN connectivity solution, designed to provide full network services at Ethernet data rates. 802.11b and Bluetooth operate in the same frequency range using different types of spread spectrum technology.

Q. What devices will cause interference?

A. 3Com products operate in the 2.4 GHz unlicensed ISM (Industrial, Scientific, Medical) band. Other products that operate in this frequency range, such as microwave ovens and 2.4 GHz cordless phones, could cause interference. 3Com recommends a thorough site survey before installation to determine coverage areas and design around possible interference.

Q. What are the health implications with pacemakers, etc.?

A. To date, there is no conclusive evidence that the radio waves in the 2.4 GHz range cause any health risk. In addition, these products work at very low power (100 Mw)—the same level as microwave ovens and cordless phones.

Q. Does this work on the same frequency as cellular phones?

A. No. Cellular phones operate in licensed frequencies different from the AirConnect wireless LAN solution. However, there are some cordless phones for the home that operate in the 2.4 GHz frequency range.

Performance

Q. What is the speed? What is the real throughput?

A. The 802.11b standard provides an 11 Mbps-signaling rate. Actual throughput will be less, in the same way that 10 Mbps Ethernet data throughput is actually less than 10 Mbps. With 802.11b, throughput will vary, depending upon file transfer size, number of users, and distance from the Access Point. The actual throughput will be less than Ethernet.

Q. What happens to the bandwidth and throughput as more users connect to the Access Point?

A. As more users connect to an Access Point, they will get lower data rates. However, AirConnect wireless clients are designed to intermittently scan and associate with the best available Access Point. The wireless clients periodically send out probe messages on all frequencies and re-associate with the new Access Point by synchronizing to its frequency.

Q. How does the PC Card affect power consumption in a laptop?

A. The PC Card is a 5-volt, 16-bit, Type II PC Card. It is designed for mobile use and, on average, should have less than a 10 percent impact on battery life. The 3Com AirConnect PC Card supports the Power Save Protocol (PSP). The average current draw to stay associated and be able to receive packets when using the PSP is less than 60 mA (about 25 percent of the power consumption of a 10/100 PC Card). The card can also be turned off while residing in the PC Card slot to conserve battery life.

Capacity

Q. How many users can the Access Point support?

A. A single AirConnect Access Point will support up to 63 users. However, this is a shared environment so the optimal number may be lower. The optimum number of users on an Access Point will depend on the types of applications being used.

Q. What if I have more than 63 users accessing an Access Point?

A. Additional Access Points can be added to an area to provide support for more than 63 users as long as the Access Points are placed on different operating channels. Three channels can operate in the same location with each other for up to 189 concurrent users.

Q. How do I change the Access Point channels?

A. The channels are changed on the Access Point using the serial, Telnet, SNMP, or Web interface.

Distance

Q. What is the range?

A. With multiple Access Points, users can roam an entire campus without losing the connection. Each Access Point has a range of approximately 300 feet (100m) in a standard office environment. However, the range is dependent upon the environment and any obstacles that may interfere with the radio waves, such as cement walls, steel beams, and elevator shafts. The throughput will vary, based upon user distance from the Access Point and the number of users connected to the Access Point. The AirConnect dynamic rate shifting features allow users to move away from the Access Point and remain connected at 5.5, 2, and 1 Mbps, depending on distance.

Q. What if there are no barriers?

A. Although we do not recommend deploying the AirConnect Access Point outside, it can transmit over 1,000 feet (304m).

Q. What happens when I get out of range of an Access Point?

A. AirConnect Access Points support roaming, meaning that when the users leave the range of one Access Point, they are automatically handed off to the next available one, ensuring that the connection is not dropped. However, if a user roams outside the reach of an Access Point, then the network is suspended and will resume as soon as the user is back in range.

Q. How do I set up the Access Points for the best coverage?

A. Each Access Point will support a radius of 300 feet (100m). However, there are obstacles that can affect the radio waves and the distance that they travel. In order to ensure proper coverage, 3Com provides a Site Survey Utility, which is designed to help the installer determine the best placement for each Access Point. 3Com will also provide consulting services for a fee to perform the site survey at the customer site.

Network Related

Q. How do I physically connect it to a network?

A. There is an Ethernet connection (10BASE-T) on each Access Point. This 10 Mbps Ethernet connection is plugged into a switch or hub port on the wired network.

Q. What happens when I roam across a router boundary to another sub-net?

A. When roaming across router boundaries to another sub-net, the point of attachment is changed without changing the IP address. As a result, the network connection can be dropped or forthcoming packets become undeliverable. The AirConnect solution offers Extended Roaming, which allows the AirConnect wireless client to communicate after changing the point-of-attachment by leaving a forwarding address with the user's home Access Point. Extended Roaming must also be supported in the wired network in order to enable Extended Roaming in the AirConnect solution.

Q. Can this connect to my 100 Mb network?

A. Yes. The Access Point can be connected to a 10/100 auto-sensing switch or hub port. The network connection to the Access Point is 10 Mb Ethernet.

Q. Can the Access Point connect directly into a switch? Into a router?

A. Yes. The Access Point can be plugged into any 10BASE-T port on the wired network. However, if you have an older switch, you should confirm that it supports the maximum number of MAC addresses that will be on the Access Point. For example, if the Access Point is going to have 30 users on it, be sure that the switch supports 30 MAC addresses in its table for that port.

Q. How do you handle the need for multiple IP addresses?

A. The Access Point and clients can acquire their IP addresses via DHCP.

Q. Does this support Network Address Translation (NAT)?

A. No. The Access Point is a bridge that connects the wired and wireless network. NAT is more typically used on a router, connecting the Internet to a private network.

Q. How do I hook up printers?

A. Printers are typically connected to servers on the wired network backbone for the highest throughput. We do not have a wireless solution for printers at this time. Wireless users select printers just like they would on a wired LAN, and can print while roaming across campus.

Q. How do I set up individual wireless networks in a single building? (For example, an office building with leased space?)

A. Users in a common area can be connected wirelessly to different networks by distinguishing between channels, network IDs, and encryption.

Location

Q. Does this work outdoors?

A. We recommend using the AirConnect solution indoors. There are solutions available from other vendors that are designed for outdoor use, and to connect buildings.

Q. Is the AP weatherproof?

A. No. The AirConnect Access Point is not weatherproof.

Q. How can I connect buildings?

A. At this time, 3Com does not have a product that connects buildings together; however, there are many products on the market using a variety of technologies that can connect networks wirelessly over distance.

Availability

Q. Will it be possible to link this with the NBX 100 system to offer a wireless LAN/phone system?

A. Yes. In the future, the AirConnect Access Point will support VOIP. A user can make calls over the network using an 802.11b-enabled phone, which will communicate wirelessly with the Access Point that is, in turn, hard-wired to the network and the NBX 100 box.