

Business white paper

Small business wireless networking

Making mobility a reality



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When you first opened your doors, you needed to get your small business online as quickly and cost-effectively as possible. Your basic Internet service plan probably included a wireless router that connected a few computers to the Internet, similar to a home account. That simple setup was enough to get your employees communicating with clients and partners, and it supported your business well enough—at first.

But simply having an online presence, sending and receiving email, isn't enough to compete in the global marketplace. Like their enterprise counterparts, small businesses need sophisticated capabilities from their business applications. However, the traffic that advanced applications generate will strain consumer-grade routers to the breaking point. Instead, your small company needs a business-ready wireless network that allows you to tap into the two major technologies influencing business today: video and mobility.

Video and mobility are particularly important to small businesses, because they let you reach out to customers and partners in a variety of convenient and compelling ways. For many small companies, technology decisions boil down to providing the best possible customer service, so they're embracing all manner of video applications, including HD videoconferencing on mobile devices, streaming video, and Video on Demand (VOD). These demanding, bandwidth-intensive applications can easily overwhelm a consumer-grade router, but even a small wireless network can have enough bandwidth to ensure smooth, successful video calls.

Mobile applications and a business-grade wireless network will enhance the business of any type of company, from manufacturers and medical facilities to retail outlets and bistros. A small manufacturer can move to an RFID (radio-frequency identification) inventory control system to automate and speed up order fulfillment, for example. A doctor's office can improve patient care by sharing massive medical files, such as radiological imaging, with specialists. A brick-and-mortar store can install a retail point of sale (POS) system that lets clerks ring up purchases anywhere on the floor with mobile devices, or a restaurant can use a hospitality POS application to take diners' orders on the fly.

There's another side to this mobile revolution: BYOD or "bring your own device." Your smartphone-toting employees want to use their own mobile devices at work for work. They want to check their email, communicate with customers, and access your company's business applications on their preferred personal devices. BYOD is no trend; rather, it's a shift in the way people work, and small companies are wise to build wireless networks that can accommodate their employees' growing use of personal mobile devices. According to CDW's 2012 Small Business Mobility Report,¹ 69 percent of respondents already own the mobile device they use for work, and 94 percent of mobile device users say that using them for work makes them more efficient. The same study forecasts a 117 percent increase of people using tablets at work in the next two years.

Mobile and video applications are changing the way small companies conduct their business, and they're opening the door to other sophisticated applications that once were available only to enterprise companies. Only a purpose-built wireless network can give you the bandwidth, scalability, and security your company needs to successfully deploy a full range of advanced business applications, such as cloud-based voice services, videoconferencing, unified communications (UC), and customer relationship management (CRM).

¹ "The Mobility Edge: CDW's 2012 Small Business Mobility Report," CDW, October 2012. webobjects.cdw.com/webobjects/media/pdf/CDW-Small-Biz-Mobility.pdf

From basics to business

Running advanced business software may be good for your small company's bottom line, but it will wreak havoc on your basic network. A network fashioned with consumer-grade components, including an Internet provider's DSL router, can give you serious technical headaches, especially as you move into mobile and high-bandwidth applications.

The most immediate issue—and the most painful for your employees—is the inconsistent performance of a small network bogged down by too much data. The user experience degrades as you increase the number of users hitting the network with additional mobile devices. The network will slow down even more with additional bandwidth-intensive applications. Imagine how frustrated your employees would be if the VOD training session they were watching became too jittery for the audio to sync with the video. Now imagine how an important client might react if your videoconference call was simply dropped when you ran out of bandwidth.

Security threats can also disrupt the normal flow of your day-to-day business operations. Consumer-grade networks can leave large gaps in your network security. Business-grade wireless networks offer more extensive built-in security features than their consumer counterparts, better protecting your network from online attacks, spam, and viruses.

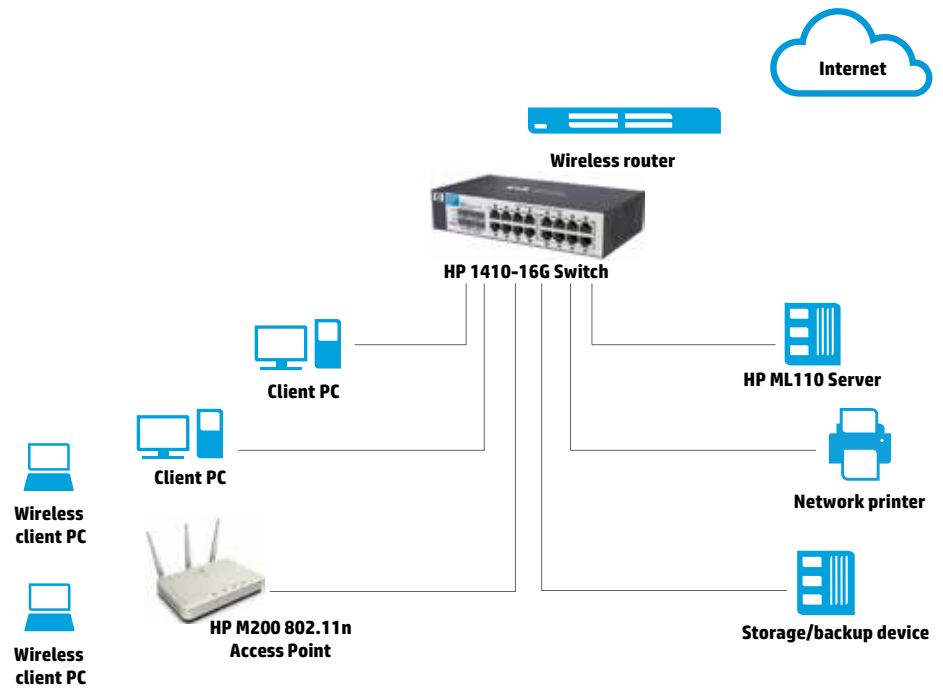
These may seem like insurmountable technical issues if you don't have in-house IT expertise. But there is a solution. To upgrade to a business-class wireless network, you need networking products that are designed for the small business: easy to use and to install, reliable, secure, and based on industry standards.

Entry-level business-grade wireless networking

A small-business wireless local area network (WLAN) can be built with just a few high-quality network components that provide better security, greater wireless coverage, and higher bandwidth than consumer products. They offer plug-and-play installation and standards-based technology that guarantees interoperability with existing and future devices. For example, business-grade products should support all of the 802.11 wireless standards, including 802.11a, 802.11b, 802.11g, and, the newest and fastest, 802.11n. To build a fast, secure, and scalable entry-level WLAN, start with the two primary pieces: a network switch and a wireless router.

The network switch is the foundation of your WLAN, allowing computers and other network devices, such as printers, to communicate with one another. There are two kinds of switches designed for a small business: unmanaged switches, which work right out of the box with zero configuration; and smart-managed switches, which let you configure basic settings to improve security and performance on your network. Both types of switches optimize the traffic on your network for a more reliable user experience.

Small companies building an entry-level wireless network usually opt for an unmanaged switch, such as those in the HP 1410 series. The HP 1410 series includes Gigabit Ethernet and Fast Ethernet switches with 8, 16, or 24 ports. The HP 1410 switches consume less power than many consumer-grade switches and, because they have no fan, they operate silently.

Figure 1. Entry-level business-grade wireless networking

When you add bandwidth-intensive applications such as videoconferencing or VOD, you need to consider moving to a smart-managed switch that allows greater control of QoS (Quality of Service) and other key functionality, such as those in the HP 1910 switch series. For example, QoS gives certain types of traffic priority over other types. For instance, video traffic is given more bandwidth than data traffic, which minimizes jitter and dropped videoconference sessions.

The wireless router connects your WLAN to the Internet via a radio signal. With just one router, you can connect all of the computers, smartphones, tablets, and other devices to the Internet through a single connection. A service provider's router is often sufficient in an entry-level wireless network, as long as it includes security features such as a firewall.

If you need your Wi-Fi signal to reach farther than your router's antennae allow, you can extend wireless coverage with a single wireless access point (WAP), such as the HP M200. It supports all of the 802.11 standards, so it can provide an Internet connection to any mobile device. The HP M200 helps beef up your network security, too, with business-grade security features that prevent unauthorized users from accessing your network. It has built-in WPA/WPA2 enterprise encryption and 802.1x authentication to prevent unauthorized users from jumping on your wireless network.

Upgrading for better performance and improved Wi-Fi coverage

Most small businesses find that an unmanaged switch doesn't support their users for very long. Sooner, rather than later, you'll need to upgrade your WLAN to stay in front of the new bandwidth-hungry communication technologies that people prefer. Maybe you need to increase your WLAN's bandwidth to make room for more video traffic on your network. Maybe you need to prioritize traffic to run a Voice over IP (VoIP) application. Maybe you need to increase your security to keep unauthorized users from piggybacking on your Wi-Fi. Whatever your changing business requirements, you can handle them by upgrading to a smart-managed switch and a managed router and adding multiple wireless access points (WAPs).

Smart-managed devices have an intuitive Web interface designed for small-business users. They're simple to configure and easy to manage through a Web browser, even if you don't have a network admin on staff.

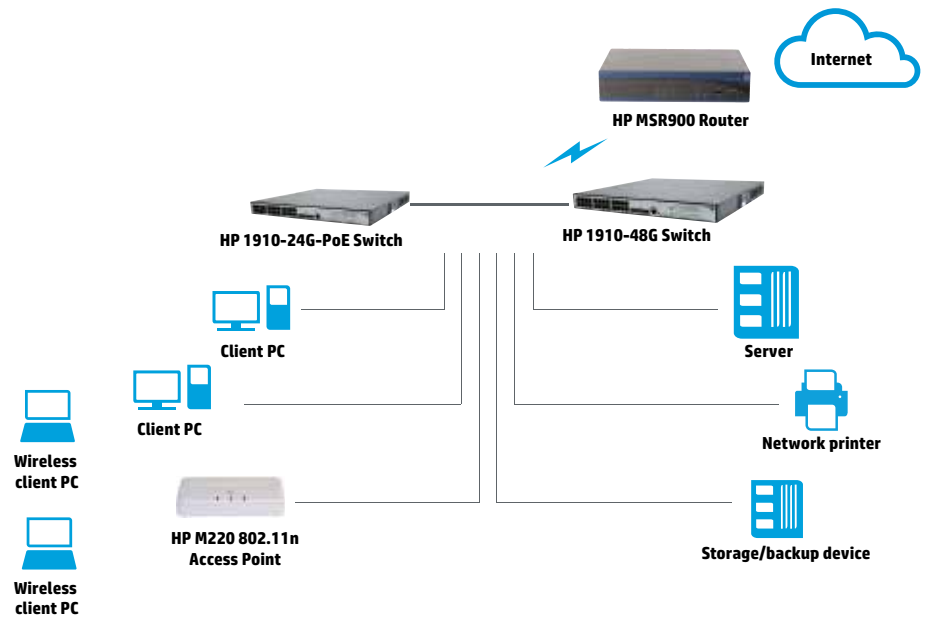
The HP 1910 switch series are smart-managed switches that let you customize your network's operation. The HP 1910 is more flexible and has greater capacity than an unmanaged switch, and it can be monitored to fine-tune your network's performance. These smart-managed switches also offer Power over Ethernet (PoE) ports, which deliver power to devices, including access points, and save on costly AC plug installation. Also, you can use a smart-managed switch to create virtual LANs (VLANs), which are secure, isolated groups of users on your network that share specific resources.

The HP 1910 switch series includes easy-to-administer Gigabit Ethernet switches that offer all of these features. There are eight different models: 8-port, 16-port, 24-port, and 48-port non-PoE versions and two 8-port and two 24-port PoE models. The HP 1910 switches operate at full wirespeed and support robust QoS traffic prioritization. With the HP 1910 switches, you can set up as many as eight different VLANs for your users and guests. Plus, they offer advanced security features, including 802.1x network login for enforcing network access controls, access control lists (ACLs) for creating groups of authorized users, and denial of service (DoS) prevention to block dangerous network attacks.

A managed router also provides security and reliability beyond that of a consumer-grade router. The HP MSR900 series routers are built to handle data, voice, and video applications, so they have robust QoS features for prioritizing network traffic. As your first defense against online threats, the HP MSR900 routers have embedded encryption, a firewall, and other advanced security features, including ACLs, to keep unauthorized users off of your network. They come in both PoE and non-PoE models for maximum installation flexibility.

The size and physical arrangement of your facility can impact the true range of your wireless router's signal. You can extend its range and bring mobility to new areas of your facility with WAPs, such as to your warehouse or the manufacturing floor. Depending on the size of your organization, you may need multiple WAPs to provide blanket wireless coverage.

The HP M220 Access Points are ideal for larger small-business deployments that require multiple access points. Easy-to-use management features, such as clustering technology, let you configure and manage as many as 10 WAPs as if they were one. The M220 WAPs are managed through an intuitive Web interface for simplicity and ease of use. The Quick Setup Wizard lets you choose from five different deployment scenarios: You pick the one that matches your wireless network setup.

Figure 2. Small business network for a growing organization

With the M220 APs, you can separate users into eight different VLANs, each with customized security levels and QoS features associated with various types of traffic. This makes it easy to give guest users an Internet connection without giving them access to your entire network. The M220 is a single radio dual-band design, which means it can support 802.11b/g/n devices in the 2.4 GHz range or 802.11n/a devices in the 5 GHz range. Altogether, the M220 can support as many as 64 clients wirelessly.

These access points support the latest 802.11n devices as well as older ones based on the 802.11a/b/g standards. They provide near-wirespeed connectivity—as fast as 300 Mbps for 802.11n devices, which is far faster than the 3G or 4G connection that mobile users would otherwise get on their smartphones, for increased performance and reliability. They also provide business-class security features to protect your data as it travels on your wireless network. They can be plugged into a PoE port on your switch or into a regular AC outlet, depending on where you want to install it.

HP for the small-business wireless network

Small companies now compete in the global marketplace, and, like larger companies, you need to be able to conduct business anywhere and at anytime. Whether you're building your wireless network for the first time or upgrading to support advanced mobility technologies, you want to connect all of your employees with the applications they need to do their jobs on the devices that keep them productive.

With HP's range of small-business wireless devices, you can build a business-grade wireless network that will support your small business now and as it grows. HP's wireless switches, routers, and WAPs are designed to meet the needs of small companies. HP's small-business wireless products come with lifetime warranties, including next-business-day advance replacement, and cover fans and power supplies. To make it even easier to implement and use these wireless networking components, HP also offers many online self-help tools as well as telephone and email support, and software releases.

HP also offers network support services to help you manage your network more efficiently, reduce network downtime, and enhance the performance of your business-critical applications. You can choose the level of service that fits your company's environment.

From resource management to customer relationship management (CRM) to cloud computing, small companies are adopting business software that was once the exclusive realm of the enterprise. With a business-grade wireless network, your small company can easily handle any business application and a growing number of mobile users. You can use smartphones, tablets, laptops, cloud services, and even unified communications, to connect to your customers. Video and mobility become two more ways for your small company to thrive and succeed.

Conclusion

Every day, HP demonstrates our exceptional commitment to innovation, savvy product development, expert implementation, and responsive service—all of which are essential elements to running mission-critical networks. High-quality global sales, delivery, and support services are backed by a 30-year record of successful networking experience, as well as the talent and expertise of certified professionals and networking partners around the world. Get geared for simple and secure networking with HP Networking.

For more information

To know more about HP Networking wireless networking solutions for small businesses, visit: hp.com/networking/smallbusiness

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