

How you can build a secure and growth-ready network that is as agile as your business



Executive summary

In today's global marketplace, small businesses are facing many of the same challenges and opportunities as large enterprises do. They're searching for ways to help employees work more productively, using technology that's cost-effective, easy to deploy and manage, and that supports future growth of the business.

The pace of business has never been faster, and everyone—employees and customers alike—expects to conduct business from any location, day and night. Businesses are contending with an unprecedented influx of new technological challenges as employees bring their smartphones, personal digital devices, tablet computers, and similar devices to work. Cloud computing services are blooming, bringing added complexity to the technology landscape. Social media, once seen as a threat to employee productivity, now is embraced as the new way to reach customers.

Risk is also on the rise. Small businesses have become the target of hackers and cyber criminals.¹ Mobility brings with it new network security risks. Further, most small companies must meet these challenges without the benefit of in-house IT expertise or staff.

For most entrepreneurs, simply keeping up isn't enough. Smart small-business owners are striving to find ways to use technology to get ahead. By building growth-ready networks based on business-grade networking equipment that supports industry standards, businesses can leverage new technologies as needed. Small businesses can react to business demands with more agility, get more out of their IT investments, and be poised to gain competitive advantage.

Why do small businesses need a growth-ready network?

Small businesses represent every possible type of company, and each one uses networking in a different way. Some small companies want to generate more sales online and compete in the global marketplace, so they plan to increase their server capacity and enhance their e-commerce efforts. Others wish to attract new customers into their physical locations, so they plan to install Wi-Fi hotspots. One thing, however, remains the same: the need for a flexible network that enables growth.

A growth-ready network may be small, but it's mighty. It's just as big as your business needs today, enabling employees to collaborate with one another and to connect with customers. Just as important, it gives your business room to expand the network along with the business, no matter what that business is.

¹ "Why small businesses are vulnerable to cybercrime—and what they can do about it," Security Dark Reading, June 2011.

A growth-ready network is the foundation for technologies that enhance productivity, improve customer service, and allow businesses to expand. If you want to experiment with social media or deploy unified communications, your network must be rock solid. A growth-ready network is built with business-grade products and services, as consumer-grade equipment simply isn't optimized to support business needs. A growth-ready network must provide enough bandwidth to support applications such as voice and video, and be fast enough to allow communication to happen in real time.

Attributes of a growth-ready network

To build a solid growth-ready network, from a small network to a global enterprise infrastructure, insist on these five attributes from your networking vendor:

1. Responsive

A growth-ready network is built for agility. The faster the network, the more responsive it can be to spikes in network traffic and the better it can run new applications. Small-business-grade switches are available in two speeds, Gigabit Ethernet and Fast Ethernet. Gigabit Ethernet delivers the highest performance and has become the default choice for new installations; Fast Ethernet remains practical for less business-critical locations, where cost saving is paramount.

2. Flexible

A growth-ready network can be easily expanded with new components or reconfigured when existing devices are moved. The core networking equipment should be flexible enough to be unplugged and reinstalled anywhere in the building, from the walls or ceilings to underneath a user's desk. A fixed-configuration switch is easy to install anywhere and even easier to administer.

For maximum flexibility, some small-business switches also support Power over Ethernet (PoE). PoE uses the Ethernet cabling to pass both data and power. Typically PoE is used to power IP phones, wireless access points, or IP video surveillance cameras. With PoE, only one cable is required when connecting these wall- or ceiling-mounted devices. In some cases, PoE can be used to power a "downstream" networking device such as another switch for wired access for conference rooms.

3. Easy to deploy and manage

If you have no dedicated IT staff, your network must be manageable by any user, not just by someone with advanced network training. Networking equipment in these environments should either be plug and play, requiring very little human attention beyond plugging it into the network and powering it up, or offer an intuitive Web-based smart-managed interface.

Smart-managed solutions are ideal for small businesses that want to be able to customize their networking products to suit their needs.

4. Scalable

A growth-ready network can grow along with the business. The networking equipment must also be scalable, allowing you to add users and applications without immediately outgrowing each solution.

5. Based on network standards

A growth-ready network is based on industry standards for device compatibility and interoperability. Every device on the network must conform to the appropriate standards, such as IEEE 802.11 for wireless networking. The only way to ensure that a new switch, router, or wireless access point will be compatible with existing networking components is if the components are all standards based. Proprietary solutions limit flexibility, so be sure to engage vendors that offer standards-based solutions.

Basic vs. advanced networks

Two types of networks are available to small businesses: basic networks and advanced networks. Both can support growing businesses, but each is optimized for different needs. For example, basic networks are ideal for businesses that want out-of-the-box networking solutions. Advanced networks are suited to businesses that want to be able to configure their networking solutions and that require greater networking performance.

Fundamentals of a basic small-business network

A basic network is ideal for a company with a handful of servers, a wired infrastructure, and up to 25 users.

At the heart of the most basic network is a switch. It connects devices and enables them to communicate. So, when setting up a small-business network for the first time, it is most important to understand three fundamental aspects of the switch: manageability, speed, and scalability.

1. Manageability

Unmanaged switches are ideal for a basic network. These plug-and-play devices simply plug into the network and work out-of-the-box; no configuration or management is required.

2. Speed

The speed of the switch determines the amount of bandwidth available on the network. Switches designed for small businesses offer both Fast Ethernet (100 Mb/s) and Gigabit Ethernet (1000 Mb/s) speeds. While more expensive than Fast Ethernet, Gigabit Ethernet is 10 times faster and prepares your network for bandwidth-hungry applications such as voice over IP (VoIP) and video streaming.

3. Scalability

Capacity for network growth is largely determined by the number of ports on the switch. A switch can only connect to as many devices as it has ports. A small-business owner must know how many devices connect now, and how many more will connect in the future. Every new computer, printer, and server must be plugged into one of the switch's ports. In general, small-business switches have either eight, 16, 24, or 48 ports to choose from. If you're researching 48-port Gigabit Ethernet switches, it's time to consider building a more advanced small-business network.

Fundamentals of an advanced small-business network

Consider an advanced network design if your business has more than 25 users, or multiple locations, or special requirements for added security or performance.

Advanced small-business networks feature smart management, mobility for users, tighter security, network segments, and even wide area network (WAN) connectivity to other locations.

• Smart management

Smart-managed network devices let businesses easily configure devices to better suit their needs. Smart-managed switches have an easy-to-use Web-based user interface appropriate for even nontechnical users. With a smart-managed switch, you can exert more control over network traffic with advanced features such as quality of service (QoS) to prioritize specific types of traffic and Simple Network Management Protocol (SNMP) to monitor traffic.

• Mobility

Wireless networking is critical. Your customers and employees expect to access your network using their preferred devices—smartphones or tablets—that have no wired connection. With a wireless network, mobile users can move throughout the facility without losing their connection to the network and the Internet. Also, businesses can easily grant Internet access to visitors without providing access to private information stored on the network.

• Security

Network security is always crucial, but as networks become more advanced, they open up new security risks. For example, wireless networking gives hackers another door into the network, so it must be appropriately locked down.

The networking components on a growth-ready network should have built-in security features. To further guard against hackers, spyware, viruses, and other types of malware, small businesses should consider installing an all-in-one security appliance that combines a firewall, an intrusion prevention system (IPS), and a virtual private network (VPN). Beyond the security solutions, network security should be approached as a process that evolves along with the business so you are always protected.

• Network segmentation

Larger advanced networks are often split into network segments to separate traffic and to give users access to specified assets. You can segment your networks with virtual local area networks (VLANs), a feature offered in most smart-managed switches. VLANs can segment a network based on employees' needs; for example, only the accounting department is permitted access to financial data. Alternatively, customer service reps could have a network segment to carry their IP-based phone calls. A VLAN can also be used to create a guest-only network. Small businesses can use VLANs to bolster security, increase network performance, and improve reliability.

- **Branch offices**

Small businesses don't always stay small—and the network must grow along with the company, stretching from headquarters to a branch office or satellite location. Workers at branch offices need the same level of access to shared resources and applications that employees at headquarters enjoy. This requires a reliable, high-performance WAN connection between the satellites and the main office.

Considering the total cost of ownership of the network

Whatever the characteristics of your network—basic or advanced—it's important to carefully track the cost of the network throughout its lifecycle.

The total cost of ownership (TCO) of the network starts with the price of network components. This initial investment should be made in business-class devices that are scalable, secure, and manageable—they should have a long life in the growth-ready network.

Determining the true TCO also requires factoring in the cost of training employees to manage the network equipment plus the additional fees incurred by warranties, support, and service for the devices.

Your type of business often determines the level of service you should invest in. If your business relies on a 24x7 mission-critical network that can never go down, you should invest in a support plan that is more rigorous than one for a business that can tolerate occasional network downtime. Some businesses need service only from a trusted partner to install new equipment. No matter the level of support or service, the ongoing cost of it is part of the network's TCO.

Why HP Networking for your business?

HP Networking products for small businesses set the standard for quality and reliability. HP has designed switches, routers, networking equipment, and services to meet the specific needs of companies just like yours. We understand the IT challenges that small businesses face, and we optimize our products to help ensure businesses can easily keep their networks up and running. We design our products so they can be deployed and maintained by anyone in your company—even nontechnical users. HP is the market leader in Web-based smart-managed devices.²

HP Networking offers a range of Fast Ethernet and Gigabit Ethernet switches purpose-built for small businesses. HP small-business unmanaged switches include the HP 1410 Switch Series and the HP 1405 Small Office Switch Series. These out-of-the-box solutions are plug and play and no configuration is needed on your part.

For businesses that want to be able to configure their networking equipment, we offer the HP 1910 Switch Series, the HP 1905 Switch Series, and the HP 1810 Switch Series of Web-based smart-managed devices. With their intuitive Web-based interface, these solutions are ideal for businesses that want to be able to customize their networking products to suit their needs.

Building a growth-ready network with products purpose-built for small businesses gives small businesses more power to face the challenges of today's global economy. With a growth-ready network, small businesses can put new technologies to work on their schedule—and the rapid pace of doing business in the Internet age will never be too fast.

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 components with HP Networking. For more information about HP Networking secure networking solutions for small businesses, visit:

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² "Ethernet Switching Report," Dell'Oro, Q4, 2011

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