

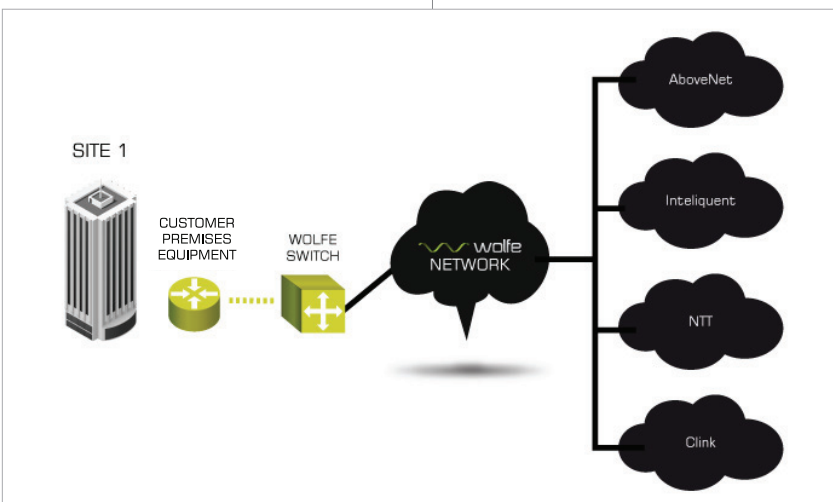
# The Move to 10 Gbps WAN Services

**T**he demand for higher network bandwidth is seemingly endless, as businesses and consumers rely on an ever-increasing number of online applications and services.

The answer is to invest in technologies, such as enterprise content management (ECM), business process management (BPM), business intelligence (BI) platforms and analytical tools. As these tools have matured in recent years, they have become easier to use with dashboards and user-friendly interfaces, as well as easier to integrate with a variety of platforms and data architectures.

In line with this insatiable demand for bandwidth is the growth of 10-gigabit (10 Gbps) services for enterprise wide-area network (WAN) connections. Many companies are moving from 1 Gbps to 10 Gbps services, and this trend will likely continue as more organizations migrate to cloud-based services that rely on fast and easy access to the Internet.

Businesses of all types and sizes are moving applications to the cloud. These include systems for email and other collaboration, customer relationship management (CRM), enterprise resource planning (ERP), accounting and other financial applications, human resources management, content management and other business functions.



**Figure 1.** Wolfe Business Internet is a dedicated high-speed service designed to enable companies to transfer their data quickly, reliably and safely. It provides fast access to the Internet for critical business applications such as email, VoIP and sending large files.

Research firm Gartner, in a report released in September 2012, said the public cloud services market is forecast to grow about 20 percent in 2012 to total \$109 billion worldwide.

Business process services (also known as business process as a service, or BPaaS) represent the largest segment of the market, the firm said, accounting for about 77 percent of the total market. Infrastructure as a service (IaaS) is the fastest-growing segment of the public cloud services market, and is expected to grow 45 percent in 2012.

The cloud services market is clearly a high-growth sector within the overall IT marketplace, Gartner said. BPaaS is forecast to grow to \$84.2 billion in 2012, up from \$72 billion the year before. Software as a service (SaaS), the next-largest segment, is forecast to grow to \$14.4 billion in 2012, while IaaS is expected to grow from \$4.3 billion in 2011 to \$6.2 billion in 2012.

Growth in application infrastructure services (also known as platform as a service, or PaaS) will also be high, according to Gartner. North America will account for the

greatest percentage of growth in the overall cloud services market, Gartner said, with 61 percent of all growth from 2010 through 2016.

#### **Need for More Bandwidth**

“Seemingly every day more applications are moved to the cloud as organizations look for ways to reduce IT infrastructure and software licensing costs,” says Michael Scott, general manager, Wolfe. “As more of these systems move to the cloud, companies need the added bandwidth just to keep up with the trend and to deliver fast and efficient access to applications for employees and customers.”

The trend toward higher bandwidth services to support the need for more digital connectivity has been under way for the past five or six years. Some organizations have moved from 100 Mbps to 1 Gbps Ethernet to 10 Gbps Ethernet over that time as their needs for additional capacity and faster access to applications increased.

The growing number of Web-based business applications, including such high-bandwidth applications as streaming video, conferencing and social media, is raising demand for bandwidth. Without adequate bandwidth, these applications and services will not be available to users or will be available at much slower speeds and with lower quality.

The growth in popularity of the cloud-based services, including private, public and hybrid clouds, has further increased the demand for higher-bandwidth services.

“We’re seeing a lot of demand for higher bandwidth, particularly as costs come down,” says Adam Vierra, sales and marketing director at NetRiver, a Seattle-based provider of scalable network-neutral data centers and interconnection services in the Washington area.

For many companies, the move to the cloud is becoming feasible, Vierra says, and increased bandwidth is supporting moves to the cloud at the same time that the increased popularity of the cloud is driving demand for even faster speeds.

“When you take systems out of the office and computers reside somewhere else, you need to have a connection that enables people to still have the same degree of comfort that they had when systems were on premises,” Vierra says. “The application response time can’t be too slow. We’re seeing that trend for data centers in general. The idea of placing the infrastructure outside of the internal data center has become real for more people.”

Companies want the ability to move applications into the cloud and to be able to access these apps from virtually anywhere an Internet connection is available. The pull to the cloud continues to be strong because it offers potential benefits such as cost reduction and increased agility that can lead to a competitive edge for businesses.

In addition to the cloud, demands for higher bandwidth are being driven by a rapid growth in the use of mobile devices in the workplace. As more workers purchase their own smartphones and tablet devices and want to use these products at work — fueling the bring-your-own-device (BYOD) trend — companies have to provide the needed access to corporate networks and cloud-based services.

The proliferation of mobile devices such as smartphones and tablets is having an impact on virtually every industry. By 2015, the world’s mobile worker population is expected to reach 1.3 billion, which represents 37 percent of the total workforce, according to a report released in January 2012 by research firm International Data Corporation (IDC). That would represent an increase from just over one billion in 2010, according to the IDC study, entitled, “Worldwide Mobile Worker Population 2011-2015 Forecast.”

People are becoming accustomed to accessing, through these mobile devices, the data and applications they need to do their work from any location. Gone are the days when employees accessed applications solely from a computer on the desktop.

The constant increase in mobile platforms, applications and mobile device management solutions will only increase the use of mobile technology in the workplace, further adding to the need for higher bandwidth.

#### **New Services Meet Growing Demands**

These concurrent trends — moving to the cloud, increased use of mobile technology and the need for higher bandwidth — run across all types of business sectors and company sizes, from small businesses to the largest enterprises.

**As more of these systems move to the cloud, companies need the added bandwidth just to keep up with the trend and to deliver fast and efficient access to applications for employees and customers.**

**Michael Scott, General Manager, Wolfe**

Companies in the telecommunications and networking industry are developing services that address the growing demand for bandwidth and the high-speed access to the Internet that so many users expect today. They offer capabilities such as Direct Internet Access (DIA), a high-speed, fiber-optic Internet connection that provides a continuous connection to the Internet.

Companies using DIA leverage a high-quality Internet connection without interruption and without concerns about exceeding bandwidth limitations. Among the advantages of DIA is the service level agreement that guarantees a certain amount of uptime with Internet connectivity. Other benefits of DIA include reliable Internet connectivity, predictable costs, proactive monitoring and support, as well as increased flexibility and scalability. These advantages are especially critical for companies that rely on ongoing Web connections to maintain business operations.

One example of a DIA service is Wolfe Business Internet service. The dedicated high-speed service is designed to enable companies to transfer their data quickly, reliably and safely, and it provides fast access to the Internet for critical business applications and functions such as email, Voice over IP (VoIP), and sending large files.

With services such as Wolfe Business Internet, businesses can benefit from having the flexibility to provision the exact capacity the company currently needs. As the business grows, it can add bandwidth as needed in a cost-effective manner. The service provides reliable access, guaranteed provisioning and continuous customer support. Customers can opt to have Wolfe manage their components, or they can provide their own solution and their own equipment.

Wolfe's service is highly customizable. Depending on a company's needs, Wolfe can provide five different classes of service. Customers can tailor the type of access and bandwidth available according to what they're trying to achieve.

Wolfe Business Internet provides an advanced IP network with speeds from 10 Mbps to 10 Gbps. Symmetrical connectivity enables fast data transfer in both directions. Customers can control how they pay for bandwidth, with flexible billing options available.

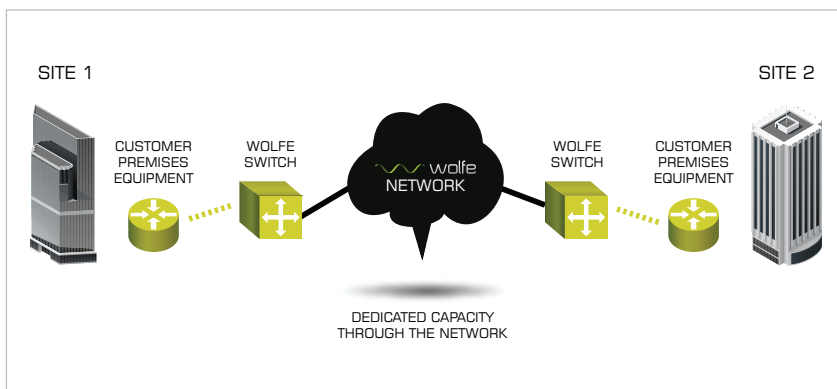
The service has a dedicated port into the Wolfe Multi-Protocol Label Switching (MPLS) backbone, which has no single core backbone point of failure. The company's network is native IPv6 capable and is powered by Cisco, ensuring that connections are secure, scalable and reliable.

### Leveraging an Ethernet Infrastructure

The Ethernet Transport Service can securely support file sharing and data movement, data backup and remote storage, and high-quality videoconferencing between locations. Wolfe also offers an Ethernet Transport Service that provides secure, point-to-point dedicated Ethernet connectivity between two locations in a metropolitan area with a dedicated private line connection, which allows customers to share large amounts of data quickly. The Ethernet capacity is scalable, with speeds from 10 Mbps to 10 Gbps. It uses MPLS on a Cisco-powered network.

Although Wolfe owns and operates the Ethernet infrastructure, customers can control application routing, management and prioritization, simplified data encryption and content policing. Companies can use their own private networks, enabling them to bypass the security risks of a public network.

NetRiver recently purchased a 10 Gbps Ethernet Transport Service from Wolfe, to replace a dark fiber network the company had been using.



**Figure 2.** Wolfe Ethernet Transport Service provides secure, point-to-point dedicated Ethernet connectivity between two locations in a metropolitan area with a dedicated private line connection, which allows customers to share large amounts of data quickly.

"Cost was the primary driver," says Vierra. "Dark fiber was nice, but at the end of the day the cost was too high." The Wolfe service has the added benefit of providing capabilities for additional network redundancy that NetRiver did not have with its previous configuration, according to Vierra. The company's customers, including enterprises, content companies, systems integrators and network service providers, look to NetRiver for reliability, scalability and network diversity, and the Wolfe service provided that.

The Wolfe Ethernet Transport Service supports NetRiver's newest facility, Lynnwood/Seattle, which provides a highly resilient and scalable environment for carriers, Internet content companies, hosting firms and enterprises. The facility has a high-density design, allowing NetRiver clients to take maximum advantage of virtualization and blade server technology.

“We have a high-availability ring that connects NetRiver Lynnwood to Westin Seattle to provide customer access to carrier needs that we do not have locally, and to pick up additional diverse IP transit peerings,” Vierra says. “We need 10 Gbps for this backbone connection, as we have to provide failover across our transport links in the event of one connection going down.”

### **Looking to the Future**

Wolfe continues to move ahead as the demand for higher bandwidth services and mobile device connectivity keeps growing.

The company is working on partnerships with several major telecom carriers to offer mobile or wireless backhaul capabilities that will provide additional bandwidth for smartphones, tablets and other mobile devices.

Mobile backhaul is the part of a wireless network that enables connections from a wireless tower to a mobile switching center for cell calls, Internet access, texting and other mobile services.

Backhaul bandwidth capacities continue to rise as more people depend on their wireless devices for a variety of applications. And, wireless service providers are looking for cost-effective ways to provide mobile backhauling.

Wolfe is also planning to deliver a 100 Gbps service to help meet the ongoing need for high-speed Internet access for midsize and large companies. When the capability is ready, the company will offer 100 Gbps as an option for customers. ♦

## **♦ ABOUT WOLFE**

**A driving factor at Wolfe is to provide customers with high-performance Internet and Ethernet solutions and excellent customer service and support. One size does not fit all, so Wolfe offers customized business network solutions, including Wolfe Business Connect, Ethernet Transport Service, Metro E, Virtual Private Line Services, and IPVPN that help any organization's bottom line. For more information, visit [www.wolfe.net](http://www.wolfe.net).**