



Optimizing WAN Application Delivery

See how a WAN Optimization Solution can be an efficient, cost-effective way to achieve your companies goals.

Once considered less important than headquarters, branch and remote offices now mean big business — but their IT operations haven't gotten the same level of streamlining that IT in the main office has. Now that most organizations have tightened their budgets at headquarters, CIOs are focusing their cost-cutting efforts on satellite locations to make them more efficient and strategic.

Branch offices can be tricky. According to Forrester's recent report about WAN optimization, "A Standard Branch Office IT Platform to Optimize and Consolidate," as many as one third of a company's employees now works in branch offices, but they're often saddled with subpar IT equipment. Also, remote employees are storing a significant amount of data locally — 40 percent or more — which limits companywide access to the information and puts it at risk of loss or damage.

Because branch offices have largely been left to their own devices, they're often running redundant systems that are also active elsewhere in the enterprise, such as e-mail servers. Forrester also found that almost half of survey respondents are supporting the same functions on branch office servers as are already deployed in the core data center. Clearly, IT at branch offices can be streamlined.

Strategies for introducing new efficiencies — not to mention trimming these locations' budgets — revolve around consolidation at the main data center and delivering applications more quickly and cheaply. WAN optimization for application delivery is an efficient, cost-effective way to achieve these goals as well as to enable employees to be more productive every day. With WAN application delivery, a WAN is optimized to improve the performance of applications at remote sites. Critical applications are hosted in the main data center and delivered to users in the remote offices via WAN links. Companies prioritize business-critical traffic to improve their response times.

Last year, independent IT research firm IDC released a report called "WAN Application Delivery: Networking Solutions for a Tough Economy." In it, IDC calls WAN application delivery a critical networking technology because it can cut branch office costs and improve service by providing LAN-like communications across the WAN. In fact, IDC believes WAN application delivery to be so strategic for cutting costs, achieving data center consolidation, and centralizing applications, that the research firm expects the worldwide WAN application delivery market to reach \$1.6 billion by 2012.

“The combination of features, including the ability to improve application performance, availability, and security over the WAN, is creating explosive growth,” says IDC in the report.

The Many Benefits of WAN Application Delivery

WAN optimization for application delivery can help organizations solve myriad issues with remote and branch offices. Because applications reside in a centrally managed data center and are delivered over an optimized WAN, all employees have access to the same standardized software. This means that satellite locations can be more closely aligned with centralized IT strategies. The number of redundant technologies running in individual branch offices can be almost eliminated. Also, IT management at remote sites can be greatly simplified. For instance, IT can support and maintain just one centralized e-mail server at headquarters rather than keeping up with separate equipment and individual e-mail applications at each satellite office. In the same way, WAN application delivery enables the secure consolidation of file servers and print services across the private WAN.

“WAN optimization reduces the requirement for increased bandwidth — it improves bandwidth without the organization needing a bigger pipe. We see between 60 percent and 95 percent reduction in traffic across the WAN pipe,” explains Daniel Vargas, a solution architect at CDW.

With WAN application delivery, organizations can use their existing amount of bandwidth more efficiently, both to deliver applications to users and to run regular system backups. In some cases, companies have been able to optimize the WAN connection enough to avoid expensive bandwidth upgrades.

IDC recently interviewed companies using Riverbed WAN optimization solutions and found that they are realizing significant cost savings. In its “Improving the Business Value of WAN Optimization” report, IDC says that, on average, respondents avoided more than \$900,000 in annual bandwidth costs. They saved more than \$780,000 by putting off the purchase of new servers and tape backup equipment. They’ve also improved the restore time of backups by more than 80 percent since deploying WAN optimization solutions.

In addition to cutting costs for the CIO, WAN application delivery improves the workday for branch office employees. Applications delivered over an optimized WAN run much faster on the user’s computer. They can also perform backups and access centrally stored data far more quickly. According to Vargas, branch office users get a LAN-like experience even though they’re running applications across the WAN.

A WAN Application Delivery Solution

A WAN application delivery solution usually includes just a few components — a device installed at either end of the WAN pipe and network optimization software. But these are advanced network devices that must support the mission-critical applications that keep business running. Internal network administrators can install the solution if you have the expertise among your IT staff, or you can use the services of a certified, experienced third-party provider, such as CDW.

In general, a WAN application delivery solution should include three components, with the first providing the most considerable impact:

1. WAN ACCELERATORS: These network devices use application acceleration, WAN optimization, web caching, and QoS and traffic shaping to deliver LAN-like performance over the WAN. Network hardware vendors, including Cisco and Riverbed, offer WAN accelerators purpose-built for branch and remote offices of all sizes.

2. LOAD-BALANCING SOFTWARE: This optimization software intelligently prioritizes and accelerates the delivery of critical applications hosted on multiple servers. It monitors and distributes traffic according to the organization’s prioritization of the type of data, IP address and destination.

3. APPLICATION DELIVERY CONTROLLERS: These network devices offload server processing of web-based applications from web servers and may include load-balancing software plus advanced routing capabilities, system health monitoring and other tools for optimizing the network.

The first step is assessing the traffic crossing the WAN pipe that will be optimized. IDC advises companies to understand their current and future WAN traffic so they can choose a WAN application delivery solution that will serve their needs for at least two years. To do this, you need to know what types of traffic are on your network, how it is being routed, and where it slows due to bottlenecks. You also need to identify which business-critical applications you want to deliver over the WAN and what their bandwidth requirements are. Voice applications, for instance, will need more bandwidth than e-mail; and time-sensitive applications such as video should take priority over all others, including backups.

Any enterprise application can be delivered over an optimized WAN, but those that need uninterrupted services or continuous communications are particularly well-suited for WAN application delivery. Video, voice and e-mail applications are prime candidates.

Solution Considerations

Even though a WAN optimization solution for application delivery has just a few components, it's a major deployment. IDC points out that a WAN application delivery solution is a "multifaceted technology impacting applications, networks and storage," and it needs to mesh with the existing network environment, including routers, security and VoIP equipment.

CIOs should consider rolling a solution out with the help of a service provider if the IT staff doesn't have advanced networking expertise. A provider can help not only with the installation, but also with testing and assessing current network traffic, projecting future network bandwidth requirements, and testing all potential solutions under the real-world traffic conditions you aim to optimize.

While testing solutions, pay attention to the management user interface. IDC suggests choosing a WAN application delivery solution with a graphical UI that's easy to use. You need to be able to manage the traffic on the WAN easily and effectively, so you can squeeze all possible traffic gains out of the link. Also, make sure the system performs discovery on an ongoing basis, so that it discovers changes in the network topology as they happen; this means that the network will continue to be optimized with little intervention by IT staff.

Beyond Application Delivery

Companies using WAN optimization technologies have discovered that their solutions help them also perform more reliable data backups and restores as well as introduce virtualization to branch offices.

"We're just starting to see companies deploy WAN application delivery devices between the primary data center and the disaster recovery data center. It reduces the time to transfer files, it requires less bandwidth between the sites, and when the devices cache data, it makes it easier to pull the data backup," explains CDW's Vargas.

The WAN application delivery acceleration devices can also often host virtual servers, which makes it easier and more cost effective to deploy virtual machines at branch offices. Companies can standardize on a single VM image and deploy that across all remote offices, replacing physical servers at each office with virtual servers in the acceleration devices.

A Smart Investment

WAN application delivery is proving to be an exceptionally cost-effective way to get the most out of an organization's existing bandwidth capacity and to improve their remote employees' user experience. And because of productivity gains and network efficiencies, your investment in WAN application delivery technology can pay off quickly.

With WAN optimization, you can control bandwidth expenses, centralize and standardize business applications, and deliver a better user experience to all remote employees. It can also improve security for branch offices, speed up disaster recovery, and simplify virtualization at satellite locations.

CDW: A Trusted Partner

CDW's highly certified network engineers have insight into your complete network infrastructure and the expertise to assist you in implementing an end-to-end solution tailored to the needs of your business/organization. We can help you to understand your current environment better and provide you with a future roadmap concerning:

- The health of your current network infrastructure
- Best practice design to support the latest network-intensive applications
- Application delivery — via LAN and WAN
- Network security
- Network resiliency
- Network consolidation
- Infrastructure Optimization Consolidation (FCoE)
- Network Capacity Planning
- Managed Network Services
- Unified Computing System

CDW's focus on Networking insures that your network is properly designed and configured for your needs now and into the future.

