HP WAN Optimization Solutions

Improve network performance—and optimize your business outcomes

Overview
• Mitigate the effects of high-latency links
• Increase effective throughput
• Improve end-user productivity
• Allow remote workers to collaborate and access applications as if they were in the office
“The wide area network (WAN) is a widely used, but terribly neglected, IT asset. For most companies, the WAN is the cause of many application woes. That’s where WAN optimization comes in. It improves application performance across a distributed network.”
Robert Whiteley, Forrester

A WAN bottleneck

Never before have wide area networks (WANs) been more critical to business success than they are today. Large corporations in every industry imaginable rely on them to allow employees, customers, and partners to communicate easily and transfer large quantities of data seamlessly. Unfortunately, on today’s typical WAN, communication isn’t always easy and data transfer is anything but seamless. Why? Because applications run very slowly on the WAN. This makes it difficult for IT organizations to provide the service levels their growing population of remote and mobile users require. It also severely restricts business continuity and disaster recovery options, limits the effectiveness of consolidation initiatives, and makes it difficult to maintain mission-critical applications like enterprise resource planning (ERP), customer relationship management (CRM), and e-mail. In an environment where IT organizations are increasingly pressured to deliver more and better services at less cost, slow-running applications on the WAN present a tremendous challenge.

WAN optimization

This is where WAN optimization can make a difference. WANs are not inherently slow; they are simply vulnerable to response delays unless some form of WAN optimization is in place. These delays are cumulative and are caused by propagation time, internal and external topologies, and processing. The problem is exacerbated by latency multipliers when applications and/or protocols have a high “chattiness” factor—common when any complete process requires multiple transactions between the application and user, all subject to the same “round-trip” delays. By implementing WAN optimization solutions you can overcome these limitations and greatly improve the performance of your network. For example, WAN optimization can:

- **Reduce costs for infrastructure and operations.** Using WAN optimization methodology maximizes utilization of existing network infrastructure, thereby improving your return on investment (ROI).
- **Increase effective throughput.** By using advanced bit pattern and file caching methods, in tandem with compression techniques, performance gains of 10 to 100 times increased throughput are achievable using today’s appliances as well as companion software clients.
- **Mitigate the effects of high-latency links.** In today’s worldwide networking environment, the larger issue affecting WAN performance tends to be latency—the delay in transmitting data across the link. Several different methods are typically used to address high latency:
  - Using bit patterns and file caching, which eliminate unnecessary trips across the WAN by storing data (bit patterns as well as files) locally
  - Using protocol-specific optimization and error correction to remove “chattiness” in inefficient protocols such as CIFS, MAPI, and TCP
  - Implementing traffic management, which prioritizes high-value traffic to avoid queuing delays

*“WAN Optimization: What You Really Need to Know,” April 2007.*
• **Deliver leading-edge application acceleration to mobile workers** wherever they connect to the network, so data moves faster, applications perform seamlessly, and remote workers no longer seem “remote.” With a WAN optimization solution in place, employees on the road, working from home, or connected wirelessly in the office can experience tremendous performance improvements. File transfers that once took up to an hour can now be accomplished in minutes or seconds.

• **Dramatically improve the outcome of IT consolidation initiatives.** WAN optimization allows customers to consolidate their IT infrastructures while minimizing the performance impact for end users.

• **Speed up backup procedures associated with disaster recovery efforts.** Typically, the ability to fail over from one data center to another in a backup disaster recovery plan requires moving massive, multi-gigabit chunks of data across a WAN in real time.

**LAN performance, WAN flexibility**

To make sure your WAN delivers top performance and security to all users, HP Services recommends HP WAN Optimization Solutions—a powerful combination of industry-leading products teamed up with HP’s global consulting, service, and support capabilities. HP Services has a wealth of experience in planning, designing, and implementing WAN optimization solutions; and we have established partnerships with the leading network equipment vendors—so you can be confident that your choice of solution fits your needs. Plus, you have the peace of mind of dealing with one trusted vendor.

The major objective of WAN optimization is to achieve LAN-like performance through improved WAN and application access efficiency, all while maintaining appropriate security requirements. The benefits can be tremendous, and include:

• Increased productivity for all users by improving the response times to access critical applications
• Reduced bandwidth utilization
• Reduced network delay between users, applications, and remote components
• Reduced IT infrastructure costs

These benefits are delivered using a variety of techniques:

• **Data compression**—reducing the amount of data on the wide area network by using data pointers and/or compression dictionaries; commonly used to reduce bandwidth requirements and address simple response delays

• **Data reduction and caching**—storing frequently accessed content such as repeating bit patterns, files, and Web pages closer to each user to reduce WAN traffic and the effects of network delay; commonly used to improve distribution of static content

• **Protocol tuning and modification**—allowing protocols originally designed for LANs to work efficiently over a WAN; commonly used to improve collaboration between branch offices as well as between mobile users and branch offices by reducing the effects of network delay
Most WAN optimization services currently available employ at least one of these techniques, but the challenge is to identify which of them best suits the specific characteristics of your network. HP Services has extensive experience to assist you in this evaluation.

Making the most of your network
The network is a key component in any IT consolidation effort. HP Services can assist you in consolidating your network environment by designing LAN and WAN solutions, building high-capacity data-center interconnectivity, enabling application-optimization techniques over the WAN, increasing network security and agility, supporting business-continuity and disaster-recovery requirements, and converging voice and data networks. The consolidated network helps you accelerate growth, lower costs, and increase agility while mitigating risk.

The HP advantage—using technology to drive better business outcomes
As a leading vendor of infrastructure solutions, HP has virtually unmatched experience implementing data-center, server, network, and storage consolidation projects. HP has gained tremendous insight into the positive impact these solutions can have when they’re implemented correctly and optimized to deliver maximum benefits. HP Services follows industry-standard processes (including Information Technology Service Assurance and Information Technology Infrastructure Library—ITSA and ITIL) to design and support enterprises as they seek to optimize WAN performance.

The process begins with a comprehensive review of current performance and an analysis of applications to optimize network traffic and topology. Expert consultants then recommend the specific hardware solution that best fits both your business and IT requirements. HP Services can also take responsibility for implementation, integration, and lifecycle support using its global organization. Why choose HP? Because our solutions are:

• Collaborative. Understanding your business is our priority, so we make your agenda our agenda. We also understand the value of partnership, and HP partners with the leading network equipment vendors in the WAN optimization space.

• Heterogeneous. We work with what you have via our multivendor, multiplatform portfolio and services.

• Standardized. HP employs standards-based architectures, modular building blocks, and consistent implementation.

• Innovative. We invest more than $2.1 billion annually on R&D in the areas of power and cooling, management, virtualization, and automation.

• Backed by a world-class support organization. With global 24x7 availability and a presence in 160 countries, HP networking specialists are prepared to keep your network available whenever, wherever your business demands.

The sooner we start, the better the business outcome.
We’re ready to put our vast resources and expertise to work to help you achieve better business outcomes. Let’s start with a discussion of your business strategies, tactics, and goals. Contact your HP representative today. Or learn more about HP WAN Optimization Solutions at: [www.hp.com/go/networks](http://www.hp.com/go/networks)