



SIX STEPS TO SMARTER WAN INVESTMENTS

A QUICK GUIDE TO IMPROVING YOUR IT SPENDING

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INTRODUCTION

WAN optimization technology brings four important business benefits to IT organizations:

Network Visibility – Layer 7 application visibility techniques provide a deep understanding of application, user, and network behavior. As applications within the network change and the network evolves, network visibility allows for a better understanding of application performance and user expectations.

Realization of Bandwidth Potential – By using your WAN bandwidth more efficiently through precise bandwidth allocation and control, optimization allows you to experience lower costs and avoid costly upgrades to more powerful internet connections.

Reduced Costs – Through leveraging server, backup, application, and storage centralization in the data center, WAN optimization and acceleration allows you to greatly reduce your branch office infrastructure expenses.

Improved Productivity – Optimizing traffic, accelerating applications and improving data protection and compliance across the WAN allows your network to run more smoothly, increasing your overall employee productivity and business agility.

Choosing the best WAN optimization solution can be a daunting challenge, given the fact that vendors use different architectures and implementations. How do you make a well-informed decision, maximize the benefits of WAN optimization, and minimize total cost of ownership (TCO)? Simply follow these six steps.

1. VERIFY LAYER 7 APPLICATION VISIBILITY CAPABILITIES

Visibility is the cornerstone to any WAN optimization solution. Without detailed monitoring an IT organization will struggle to gain an educated understanding of their existing network environment. Layer 4 port monitoring is no longer a suitable solution on today's networks where aggressive file sharing, P2P, streaming, gaming, as well as corporate applications are being delivered at Layer 7. With the steady rise in Layer 7 traffic, visibility has become a mission critical function of every IT administrator. Always verify that your WAN optimization solution encompasses these five application visibility features.

Layer 7 Classification – Utilizes application signatures to identify and control applications based on the data payload within the packet. This is a required technology to classify and control port hopping applications or to further decipher applications riding within other protocols like video or audio streaming within http.

Heuristic Classification – Allows visibility and control of a new breed of advanced applications such as Bit Torrent and Skype that use full encryption techniques to mimic other applications. These are some of the most aggressive and harmful applications to networks.

Drill Down Capabilities – Allows correlation of user and application usage. Without the ability to drill down and see what applications users are running or what hosts are generating the most application traffic you cannot gain a full understanding of user and application usage on the network.

Real Time Monitoring – Provides instantaneous views into what is happening on the wide area network from a user, application, and conversation perspective. Real time monitoring must also be capable of viewing Layer 7 information such as what URL's a user is accessing and their precise bandwidth usage over the instance in time.

Top Talkers/Top Conversations – Information should be presented to the IT organization in a manner that is easy to understand and assimilate. Solutions that require extensive investments in training to obtain value are not suitable for today's reduced staff, resource constrained environments.

2. CHECK FOR ADVANCED WAN OPTIMIZATION TECHNOLOGY

IT organizations can fully experience the four main benefits of WAN optimization by using the most advanced optimization technology:

Precise Policy Based Traffic Management – Provides bandwidth guarantees to critical applications to ensure they receive the network resource they need in order to operate effectively. Also, limits and constrains recreational or non business critical applications. This minimizes the negative impact non-sanctioned applications can have on the network.

Traffic Discard / Block – Allows the IT organization to completely block applications if required. This is very effective in reducing congestion and protecting an organization from the dangers of file sharing, P2P, and other rogue applications that may appear on a network.

Diffserv / ToS Marking and Control – Easily allows integration with existing QoS solutions such as Class of Service technologies being applied in an MPLS WAN cloud. This capability extends the quality of service intelligence out to the branch office and allows IT managers to extend their reach across the whole networked organization.

Automated Policy Scheduling – Ensure that policies are suitable for the needs of an organization across different days and times. Organizations typically use networks for different purposes at varying times of the day or week. As an example during business hours it might be critical to limit bandwidth consumption by backup traffic but during the evening the organization might want to allocate all available bandwidth to these critical backups.

3. CHECK FOR INTEGRATED APPLICATION ACCELERATION TECHNOLOGY

IT organizations should be cautious of point solutions that only provide acceleration but no traffic management capabilities. While acceleration alone can be very effective in a limited number of environments, it is typically not suitable as the only technology to improve WAN performance. Today's organizations have applications with very different network requirements: VoIP requires precise traffic management and QoS, while windows file sharing or DR traffic requires acceleration, compression, and caching. It is critical that the acceleration technology is seamlessly integrated in a solution that provides both capabilities.

Stream / Packet Based Compression - Minimizes bidirectional bandwidth consumption by performing compression on streams of data of packets as well as on individual packets.

Caching / Data Differencing - Minimizes bidirectional bandwidth consumption and accelerates applications by suppressing transmission of data that has previously been seen, so it does not have to be sent across the WAN again when requested by other users.

Protocol-Specific Acceleration - Overcomes the performance and efficiency limitations of commonly used transport protocols such as TCP.

Application-Specific Acceleration - Reduces application latency through the use of specially developed acceleration technologies to address specific protocols like CIFS Windows File Sharing.

4. CONFIRM CENTRALIZED MANAGEMENT AND WAN WIDE REPORTING

Although WAN optimization benefits may be easy to obtain in small-scale deployments, robust centralized management and reporting are required for large-scale enterprise wide deployments. Invest in a long-term solution that offers enterprise-class centralized management and reporting capabilities.

Provisioning and Configuration Management – The solution should be designed to simplify the provisioning process. Deployment challenges and inefficiencies can increase costs on an organization by wasting man hours, increased deployment timelines, and extending the time the organization can begin to leverage the benefit of the solution. Configuration management and simplicity is also required to further drive down the total cost of ownership.

Software Distribution and Upgrade – Maintaining software on many devices can be complex and difficult. Tracking which version, patch, or hotfix is suitable for a device or compatible with the rest of the networked environment can be a daunting, and exponentially complex task. Choose a solution that allows distribution of software updates in a very simple and straightforward manager. The IT organization should not have to track compatibility or connect too many devices to perform the same upgrade task on each. Look for point and click update distribution and intelligence within the solution to understand compatibility requirements.

Multi User Support with Role Based Administration – Distributed organizations rely on many individuals to support the various network components spread across different geographies, time zones, or even locally across different offices. The centralized management solution should allow multiple users to manage the solution within their realm of responsibility. Assigning roles and capabilities to users allows distribution of responsibilities effectively to the various staff within an IT organization.

Device Inventory – The solution should provide an instant view into the current status of all devices showing model, serial number, ip address, hostname, operational status, maintenance status and more.

WAN Wide Reporting and Dashboard Views – The centralized management solution should allow the IT organization to view device specific reporting but also consolidate data across the whole organization to provide complete WAN wide reporting. The use of dashboard views allows the organization to rapidly understand the state of their overall network easily.

5. CONFIRM APPLICATION RESPONSE TIME MEASUREMENT CAPABILITIES

Wide area networking is no longer about connecting locations to a WAN cloud and ensuring connectivity but rather about understanding networking applications so they perform to meet the needs of the end users and organization.

Application Response Time Measurements - Quantify application performance from the end-user perspective. Application response time measurement detects how long end users are waiting for their applications to respond. It also helps to pinpoint whether a problem is network or server related. Equipped with this information, network managers can fine tune QoS policies to control application response times. These measurements are an integral part of a comprehensive solution. Without monitoring application response times, there is no clear measurement to know if application response times are improving.

6. REVIEW SIMPLICITY, SCALABILITY, AND TRANSPARENCY

Many solutions require complex configurations or changes to the network prior to gaining the benefits of the WAN optimization solution.

Simplicity - Invest in a solution that has simple wizard generated or automated configuration options. Automated configuration options allow WAN optimization devices in the branch or headquarters to automatically discover each other and start optimizing applications.

Scalability – You should shop for a solution that scales to meet the needs of your organization. This includes the ability to support headquarters or data center environments in excess of gigabit speeds, to the ability to manage hundreds or thousands of devices via a centralized management offering. Many solutions will perform well in an evaluation but do not have the required capabilities to easily integrate and scale to meet the needs of an organization.

Transparency – The solution should be transparent to applications, network configurations such as firewall policies or router access control lists (ACLs), and any quality of service (QoS) configurations that may be implemented. This requires IP header transparency. A WAN Optimization solution that performs tunnels between appliances eliminates transparency. A transparent solution protects your existing investments and best practices in network and security policies and also saves ongoing management overhead.

Remember, not all WAN optimization solutions offer you the functionality that will allow you to realize the four business benefits of Network Visibility, Realization of Bandwidth Potential, Reduced Costs, and Improved Productivity. Use these six steps to find the WAN Optimization solution that will best suit your organization's requirements and allow you to meet your business goals. Further information on WAN Optimization can be found at www.pulsesupply.com.