

How to choose a WAN optimization solution



Table of Contents

	Introduction	3
<hr/>		
	Eight things you should consider when evaluating a WAN optimization solution	5
	Minimize latency to improve performance of apps and services delivered over the WAN	5
	Prioritize bandwidth-limited performance of mission-critical apps and services	6
	Be alerted when application performance falls below acceptable levels	7
	View WAN traffic in real-time for monitoring and troubleshooting purposes	8
	Analyze WAN traffic patterns to identify bottlenecks and ways for improvement	8
	Simplify implementation of the solution at remote sites and branch offices	9
	Optimize WAN traffic within a complex hybrid environment	9
	Optimize WAN traffic within the context of an SD-WAN solution	10
<hr/>		
	Making a rational purchase decision	10
<hr/>		
	Request a live demo of exinda NetworkOrchestrator	11

Introduction

Technological shifts combined with market pressures and heightened customer expectations are driving small and mid-sized businesses (SMBs) towards more and more dependence upon the cloud to deliver high-quality experiences to both users and customers. But with greater reliance upon the cloud comes a greater need to ensure that the underlying network—in particular the WAN—is being utilized efficiently to its full advantage.

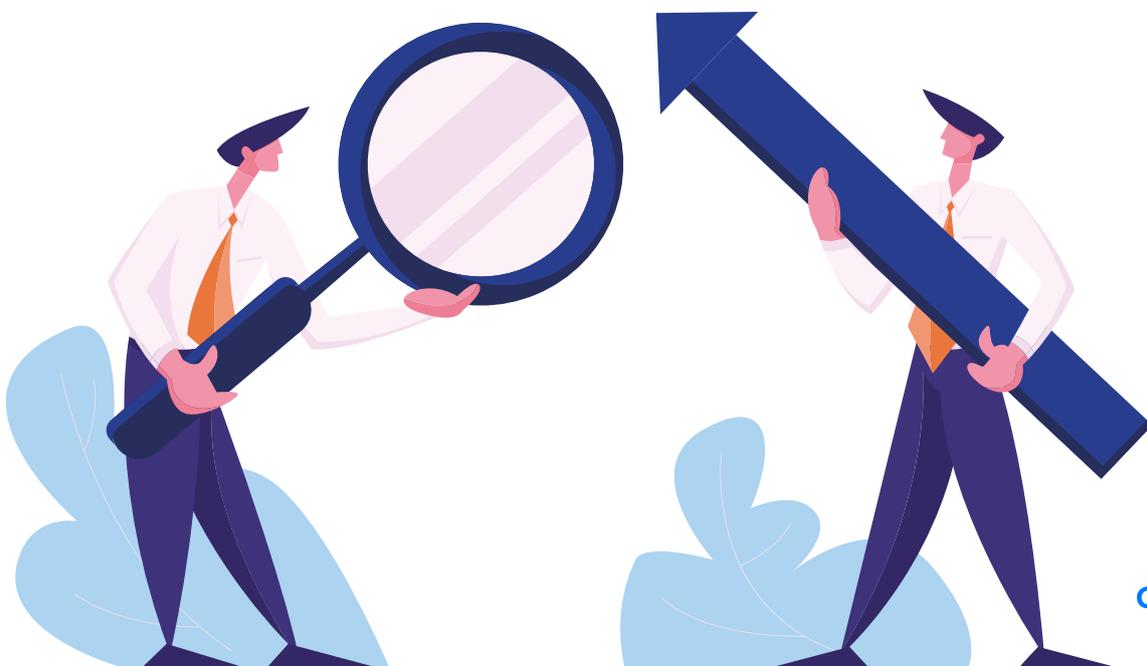


Today's SMB can take on many forms. No longer centralized in a single office or building, the SMB of the present time may be decentralized as a collection of satellite offices whose network topology evolves as the business itself grows and diversifies. A significant portion of the company's employees may work from home or be mobile most of the time due to pressure to increase sales. Increasingly common are hybrid combinations of on-premise infrastructure together with cloud services as a way of delivering applications anywhere, at any time.

At the heart of all this is the WAN which binds everything together like glue. With greater emphasis on distributed business and cloud computing also comes an increased need to optimize limited WAN bandwidth and connectivity. In this way, SMBs can overcome network performance challenges and ensure the best quality of user experience.

Many WAN optimization solutions are available in the marketplace today. Some are standalone products; some are packaged into larger solutions that deliver other benefits SMBs may think they need. Where should a business start if they are looking for a solution to help them get the best performance from their WAN environment?

Buyer's guides traditionally offer feature-by-feature comparisons of selected products from different vendors, often accompanied by excerpts from positive customer reviews. This approach is susceptible to bias in several ways. First, there is the problem of selection bias since only the top-selling products are typically covered. Second, focusing only on positive customer comments can hide deficiencies that may lead later to buyer's remorse.



This whitepaper follows a different approach. Comparing offerings from vendors in a given area is difficult without first establishing a vendor-neutral baseline for comparison purposes. The baseline or bottom-line question for most businesses is simply this: what does my business really need? In other words, before you can properly decide which WAN optimization solution might be best for your company, you need to decide what features of these solutions can provide tangible benefit for your business.

Mapping business needs to features of WAN optimization solutions is a good place to begin, and this is what the remainder of this whitepaper focuses on. Once you've established which features are helpful or necessary for achieving and maintaining the best performance from your WAN environment, deciding which WAN optimization you should purchase becomes straightforward: buy the one that meets the needs of your business.



Eight things you should consider when evaluating a WAN optimization solution

When evaluating WAN optimization solutions, start by identifying your business needs and whether the solutions you are considering include features that meet them. The value of this approach is twofold: 1) You get everything your business needs; 2) You don't overspend on features you don't have any use for. In this section we describe eight important factors you may want to consider when choosing a WAN optimization solution for your business. In other words, consider that your business needs to be able to:

Minimize latency to improve performance of apps and services delivered over the WAN

Latency is the bane of user experience when using applications over WAN links. Latency affects user productivity, leads to lower satisfaction, and ultimately impacts your business's bottom line. Latency results from several combined factors that include multiple applications contending for limited WAN bandwidth (over a satellite connection for example), the level of "chattiness" of the applications involved, and the large amounts of data that certain types of applications (such as videoconferencing) have to transfer.

Most WAN optimization solutions support a variety of techniques for optimizing the flow of traffic over WAN links to reduce the latency experienced by users running applications over the links. Commonly used methods to improve application responsiveness by reducing WAN link latency include: data de-duplication and caching; traffic compression mechanisms such as the standard LZ compression algorithm; bandwidth shaping and packet marking; blocking certain types of unwanted traffic; and TCP acceleration, SMB acceleration, SSL acceleration and other acceleration techniques appropriate for different protocols.

Ensure that the WAN optimization you select for your environment supports the optimization methods effective for the applications and services you will be delivering over the WAN. For example, if your applications produce a lot of SSL traffic, then an optimizer that supports SSL acceleration can enhance the satisfaction of your users.

Prioritize bandwidth-limited performance of mission-critical apps and services

The WAN optimization solution you choose should allow you to configure and use policies to manage the traffic on your WAN links. Policy-based management is a time-saver and also reduces administrative overhead and headaches of managing traffic across your WAN environment. A policy in this context simply defines what types of actions your WAN optimizer should perform on different kinds of traffic. For example, you might configure a policy to apply a specific optimization technique to traffic for a certain application or group of applications.



For maximum flexibility, you want to be able to configure your WAN optimizer's policies to filter traffic across a broad range of network elements including applications, services, hosts, subnets, VLANs and so on. The option of creating time-based policies may also be desirable, for example, so you can dedicate bandwidth to user I/O during office hours and to data transfers during nighttime. Integration with Active Directory can be helpful when your network infrastructure is built on the Windows Server platform. For example, you may want to be able to specify certain Active Directory users or groups when configuring your optimization policies, and also be able to generate WAN optimization reports that utilize Active Directory naming schemes instead of simple IP addresses and hostnames. Be sure to choose a solution with built-in intelligence that provides timely and helpful recommendations for making necessary and appropriate changes to the policies used to manage your WAN traffic. For example, the optimizer might include wizards. These can provide a simple and convenient way of creating a collection of default policies as a starting point for optimizing the flow of traffic on the WAN links in your environment. The optimizer might also include intelligence that can provide recommendations on how policies should be modified and what traffic patterns should be monitored when new apps or services are spun up on your network.

Be alerted when application performance falls below acceptable levels

Be sure your WAN optimization solution includes different alerting mechanisms that can be used to generate both default and customer-defined alerts. Two types of alerts are useful with a WAN optimization solution. First, you will want an alert if something undesirable is happening on your WAN links, for example, when the performance of an application or group of applications has degraded. Second, you will want to be alerted when potential issues happen with the WAN optimization appliance itself, for example, if its CPU utilization pegs out or memory paging impacts performance of the device. Support for a variety of different alerting mechanisms can also be helpful, such as email, text and SNMP and SYSLOG. These should all be customizable in terms of the trigger and clear thresholds for generating alerts for many conditions.

View WAN traffic in real-time for monitoring and troubleshooting purposes

Purchase a WAN optimization solution that has a graphical dashboard that is easy to use and provides a comprehensive view of what's happening on your WAN links. For example, you want your solution to allow you to see at a glance what applications are consuming inbound and outbound WAN bandwidth and who is using them.

You will also want to use your dashboard to recognize and be able to block or control unsanctioned traffic generated by users with recreational apps (such as games) over your WAN links. A good dashboard is designed in such a way that it presents information clearly using colorful visualizations and summarizes key metrics in easy-to-read form while also allowing drilldown when greater detail is needed. It should be customizable so you can easily find and understand information that's most important for your particular network environment.

Analyze WAN traffic patterns to identify bottlenecks and ways for improvement

To meet this need you should choose a WAN optimization solution that has built-in smart reporting with extensive customization and drilldown capabilities. Charts and graphs of link utilization provide an intuitive way of quickly grasping what's going on with your WAN links. By examining such visuals in real-time or using historical reporting, you can see if a bottleneck is happening during peak load periods. But how do you determine what might be the cause of your bottleneck? Visuals that let you drill down to see the “top conversations happening” can help you identify the root causes of your WAN bottlenecks. This lets you take steps such as rebalancing traffic or implementing quality of service to address the root cause of your bandwidth congestion. These solutions let you deal with the cause rather than merely treat the symptom by purchasing more bandwidth.



Simplify implementation of the solution at remote sites and branch offices

Auto-discovery of WAN optimization appliances is an important feature to look. Auto-enrollment of site connections can be a big time and money saver, and ultimately that's what matters most for any business. Most acceleration techniques require two appliances positioned at either end of the WAN link. For example, one appliance would be used to compress and de-duplicate data to reduce traffic over the WAN; the second appliance then re-composes the traffic from the compressed, de-duplicated data it receives from the first appliance. The actual way in which this is done will depend upon implementation details. It's important to choose appliances that can support orchestration to detect the presence of similar appliances on the network and discover which connections can be accelerated. Then, your optimization engine can automatically group these into communities. Support for using CA or self-signed certificates is also necessary for SSL protocol acceleration to work. It can also be helpful for ensuring the integrity of the communities your solution orchestrates.

Optimize WAN traffic within a complex hybrid environment

If your network is complex and involves both on-premise infrastructure and public cloud services you may want to implement a WAN optimization solution that offers a range of flexible deployment options. These include standalone hardware devices in the form of WAN optimization appliances and virtual appliance software you can run either on bare-metal systems or as virtualized workloads running in Microsoft Hyper-V™, VMware vSphere™, Citrix XenServer™ or Linux KVM hosts. If a significant portion of your network infrastructure involves utilizing the services of a large public cloud provider like AWS, Google Cloud or Microsoft Azure, you may need to work directly with your provider for an optimization solution. Such providers don't let you install your WAN appliances in their datacenters. This typically means deploying an SD-WAN solution with integrated WAN optimization that is either offered by or fully compatible with your public cloud provider.

Optimize WAN traffic within the context of an SD-WAN solution

SD-WAN has gained wide acceptance in recent years. It is especially prevalent in enterprise environments as a method of ensuring that the best possible application experience is delivered over the WAN. SD-WAN doesn't replace WAN optimization, however, or eliminate the need to utilize effectively the limited bandwidth available in WAN links. If you're already looking for a possible SD-WAN solution for your environment, you may want to choose one that also includes integrated WAN optimization/acceleration capabilities.

Making a rational purchase decision

Before you select and buy a WAN optimization solution for your business be sure to review all of the above considerations to ensure you're getting everything you need in such a solution. By approaching your purchase in this way, you can avoid choosing a solution with features that don't address your key pains. More importantly, focusing on these areas will help ensure your users are productive and happy with the network and application performance you're delivering to them over the WAN.



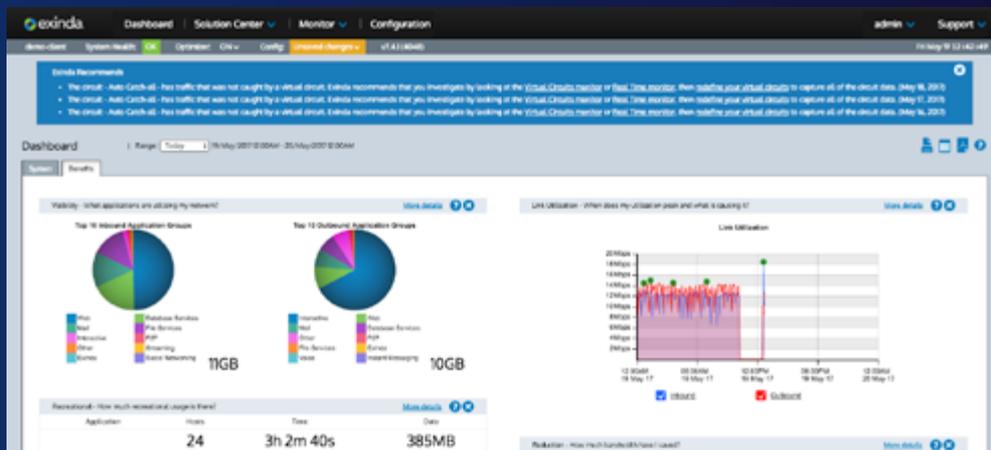
exinda **NetworkOrchestrator**

Manage network performance by focusing on the user experience of key applications

[Learn more](#)

[Request a live demo](#)

- ✔ See your network from the user's perspective
- ✔ Control network traffic & applications
- ✔ Improve application performance



All product names and companies mentioned may be trademarks or registered trademarks of their respective owners. All information in this document was valid to the best of our knowledge at the time of its publication. The information contained in this document may be changed without prior notice.