# Cisco WAAS Optimized for Citrix XenDesktop

## Cisco Wide Area Application Services (WAAS) provides high-performance delivery of Citrix XenDesktop and XenApp over the WAN.

### What You Will Learn

Cisco[®] Wide Area Application Services (WAAS), a Citrix Ready[®] certified solution, helps enable a high-quality user experience for Citrix XenDesktop and XenApp over the WAN without the need for costly bandwidth upgrades.

This solution is tested, validated, and supported by both Cisco and Citrix to provide optimization out of the box requiring no changes to existing Citrix configurations.

Cisco WAAS provides a high-quality user experience for virtual desktops by accelerating performance by up to 70 percent for applications and video delivered using Citrix XenDesktop and XenApp. Cisco WAAS also increases the number of Citrix users supported concurrently over the WAN by up to two times through powerful optimization techniques that reduce bandwidth consumption by up to 60 percent.

### Business Challenges Addressed by the Cisco and Citrix Solution

Customers use desktop virtualization solutions such as Citrix XenDesktop to transform traditional desktop computing into an on-demand service that is managed from the data center to enhance desktop security, increase control of desktop management, and extend business continuity and disaster recovery to enterprise desktops.

In typical branch-office scenarios, increased user and application density compete for the same bandwidth, which may result in a trade-off between user experience and cost of ownership for some virtual desktops and application solutions. Investments in network bandwidth upgrades at branch offices to help maintain a consistent user experience may delay many of the ROI benefits associated with desktop and application centralization. In addition, bandwidth upgrades do not address all causes of WAN latency and therefore cannot fully address end-user desktop performance concerns for branch-office users.

Cisco WAAS optimized for Citrix XenDesktop mitigates the effects of the WAN and helps ensure that customers achieve their business objectives:

- Provides enhanced quality of user experience for remote users across a WAN
- Reduces the need for bandwidth upgrades while supporting a large number of concurrent branch-office users
- Reduces business risk with best-in-class solution supported by Cisco and Citrix

## Solution Overview

Cisco WAAS is a comprehensive WAN optimization solution that accelerates applications over the WAN, delivers video to the branch office, and provides local hosting of branch-office IT services. Cisco WAAS allows IT departments to centralize applications and storage in the data center while maintaining LAN-like application performance and to provide locally hosted IT services while reducing the overall branch-office device footprint.

Citrix XenDesktop is a desktop virtualization solution that transforms Microsoft Windows desktops and applications into on-demand services available to any user, anywhere, on any device. Citrix XenDesktop delivers individual Microsoft Windows, web and software-as-a-service (SaaS) applications or full virtual desktops to PCs, Macs, tablets, smartphones, laptops, and thin clients - all with a high-definition user experience over any network.

Together Cisco and Citrix help meet the dynamic needs of enterprise customers and deliver optimized end-user experience, simplify IT management, and enable faster deployments, all at enterprise scale.

The tested, validated, and supported solution from Cisco and Citrix optimizes virtual desktop delivery and consists of the following components (Figure 1):

- Citrix XenDesktop delivers desktops and applications hosted on virtualized infrastructure in the data center.
- Cisco WAAS, deployed on both sides of the WAN, optimizes Citrix HDX traffic between the end users and the data center using a sophisticated combination of TCP optimizations that reduce the effects of the WAN, persistent session-based compression, and sophisticated algorithms to reduce data redundancy in Citrix HDX traffic.
- Cisco WAAS Central Manager manages the solution from a central point, reducing operation burdens and costs.

**Figure 1.**  Cisco Optimization for XenDesktop Solution Components



## Solution Benefits

**Zero-Touch High Performance for Citrix XenDesktop in WAN Environments**

Cisco WAAS does not require changes to either Citrix servers or clients. Cisco WAAS is natively compatible with Citrix encryption, compression, and session reliability features commonly deployed by customers:
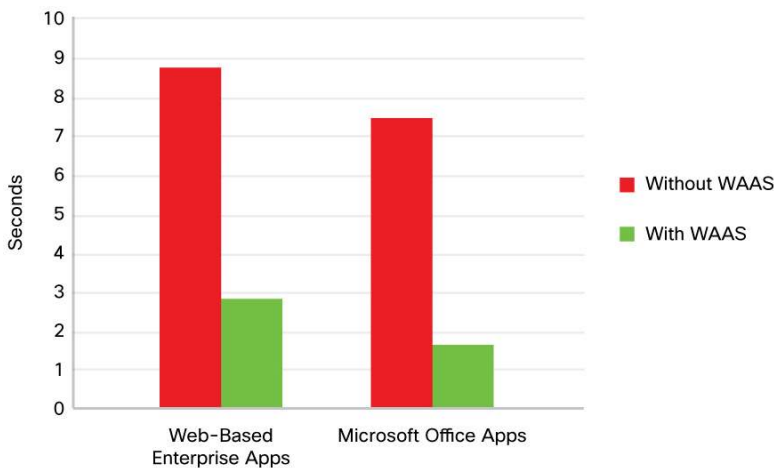
- Transparent to Citrix encryption: Basic, SSL, and Citrix SecureICA 128-, 56-, and 40-bit
- Full compatibility with Citrix Gateway Protocol
- Full compatibility with Citrix HDX MediaStream for multimedia client rendering
- Dedicated optimizations (context-aware data redundancy elimination [DRE]) for Citrix XenDesktop
- Full support for Citrix XenDesktop
- Full support for Citrix XenApp

Because the solution is jointly supported by Cisco and Citrix, customers can confidently expand their Citrix XenDesktop environments across WAN links.

## High Quality of User Experience

The Cisco WAAS solution accelerates the performance of all applications accessed through Citrix XenApp (a critical component of Citrix XenDesktop), such as Microsoft Windows Media Player, PowerPoint, Excel, and Word, as well as Internet and intranet and enterprise websites (Figure 2).
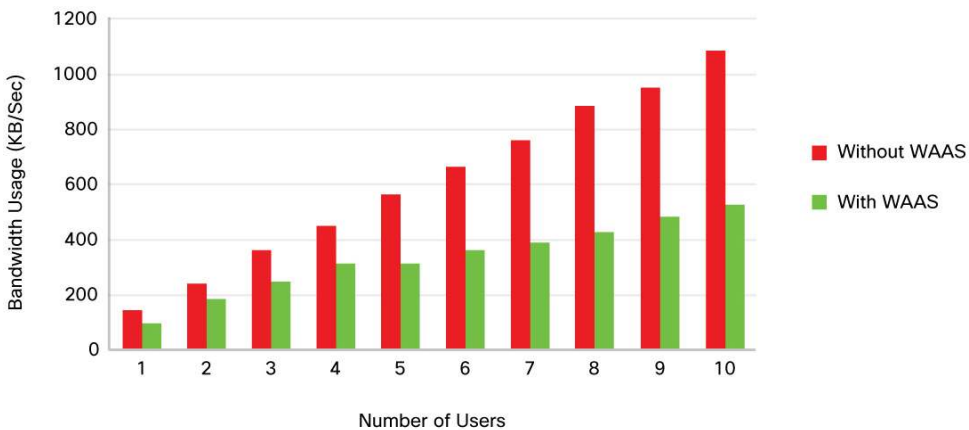
**Figure 2.**    Cisco WAAS Improves Virtual Desktop User Response Time by up to 70 Percent for Microsoft Office and Web-Based Enterprise Applications



## Greater Scalability with Lower Bandwidth Costs

A T1 or 1.5-Mbps WAN link can support a maximum of 12 to 14 users using native Citrix XenDesktop. Through a combination of optimization techniques, Cisco WAAS increases the number of Citrix XenDesktop users that can be supported on a given infrastructure by up to two times or more (Figure 3). Cisco WAAS provides uniform, scalable performance for all users.

**Figure 3.**    Up to Twice as Many Users on a T1 Link with 80 Milliseconds of Latency Accessing Citrix XenDesktop
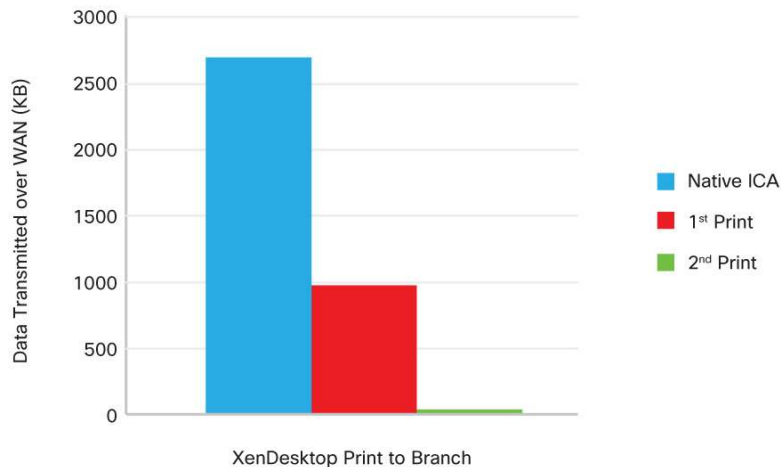
**Optimized Printing**

Cisco WAAS offers flexibility in selecting the right print topology for each environment, reducing any potential delays induced by the printer at the branch office and the virtual desktops at the data center.

Cisco WAAS accelerates centralized printing through printing-specific optimizations, data reduction, compression, and TCP optimizations to provide performance improvements in environments in which centralized printing is used (Figure 4).

Cisco WAAS also supports virtual blades, allowing Microsoft Windows Server print services to be deployed on branch-office Cisco WAAS appliances, reducing the need for and cost of additional branch-office servers.

**Figure 4.**    Centralized Printing Performance for Citrix XenDesktop User: Up to 99 Percent Optimization



## Summary of Business Benefits

Cisco WAAS optimized for Citrix XenDesktop offers customers the following benefits:

- Provides a high-quality user experience by delivering virtual desktop applications and video up to 70 percent faster to branch offices
- Lowers costs of virtual desktop projects by supporting up to twice as many virtual desktop users, while optimizing WAN use by up to 60 percent
- Accelerates enterprisewide virtual desktop deployments by providing a Citrix Ready certified solution that provides native interoperability with Citrix encryption and compression

## For More Information

- Cisco WAAS: http://www.cisco.com/go/waas
- Citrix XenDesktop: http://www.citrix.com/xendesktop
- Citrix XenApp: http://www.citrix.com/xenapp

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