Cisco Wide Area Application Services (WAAS) Mobile

Product Overview

Cisco® Wide Area Application Services (WAAS) Mobile extends Cisco WAAS Software application acceleration benefits to mobile employees who travel outside the branch office. Compared to corporate WAN and branch-office optimization, acceleration of mobile VPN connections over the public Internet brings different technical challenges:

- Lower-quality network connection than the corporate WAN: Instead of dedicated branch-to-corporate-WAN leased lines, mobile users are using public Internet connections such as DSL, Wi-Fi, satellite, dial-up, cable, and cellular. These connections have lower bandwidth, higher packet loss and latency, and additional challenges such as time-slicing delay in cellular environments.
- Shared computing resources on PC or laptop: in contrast to branch-office users, who can rely on a dedicated branch device to provide application acceleration, mobile users have to share laptop or PC computing resources and the TCP software stack with many other PC applications.
- Support cost and manageability concerns: The open environment of a Windows PC, in contrast to the controlled environment of an appliance, has a very different class of stability and interoperability requirements, with numerous applications running on the PC: a variety of operating systems, browser versions, end-point security applications, and VPN client software and a wide range of business applications.

Features and Benefits

To address these challenges, Cisco WAAS Mobile provides industry-leading performance under the most challenging network connectivity conditions, has a small PC footprint, and offers low total cost of ownership (TCO), reducing the costs normally associated with installation of client software on mass-user PCs. The solution also offers ease of deployment.

Industry-Leading Acceleration Performance Under the Most Challenging Networking Conditions

Cisco WAAS Mobile provides high application throughput improvement under the most challenging network conditions, with very high latency and packet loss (Figure 1). Benchmark testing showed that the solution provides substantial end-user throughput improvement, with 11 times (11X) faster application response time when encountering 10 percent packet loss. By contrast, rather than improving throughput, alternative solutions degrade application throughput as substantially as native WAN solutions.

Figure 1. Industry-leading Application Throughput Improvement
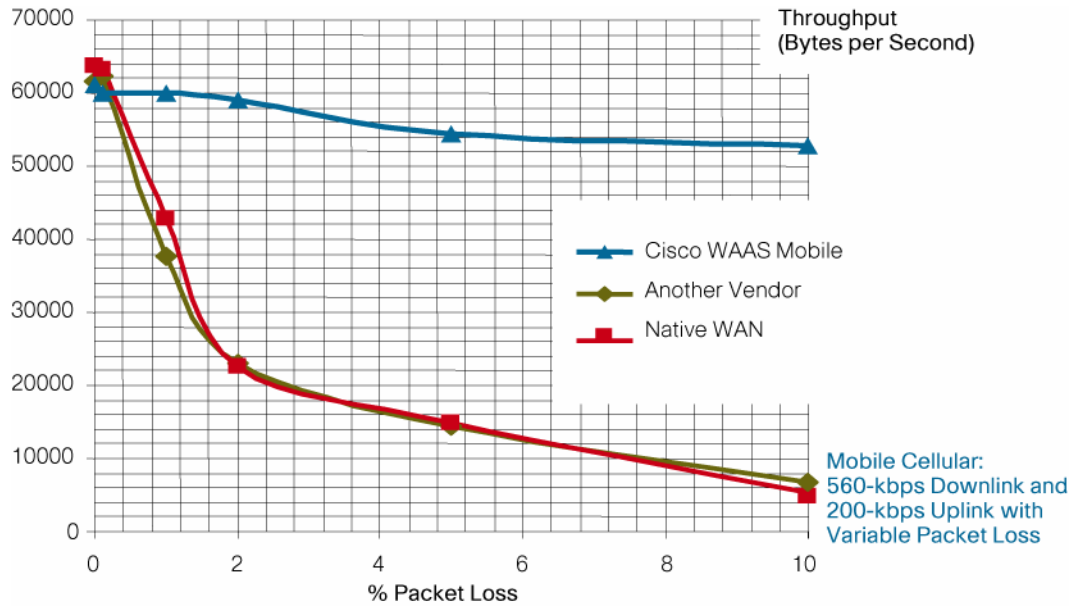
Cisco WAAS Mobile typically provides 2X to 5X acceleration on initial downloads and 20X or greater acceleration on subsequent transfers for any TCP-based applications. In mobile environments, if the first-download performance is bad, end users are likely to stop using the application altogether. Cisco WAAS Mobile delivers excellent first-download performance, as shown in Figure 2.

Figure 2. Industry-leading File Download Performance (First Download)
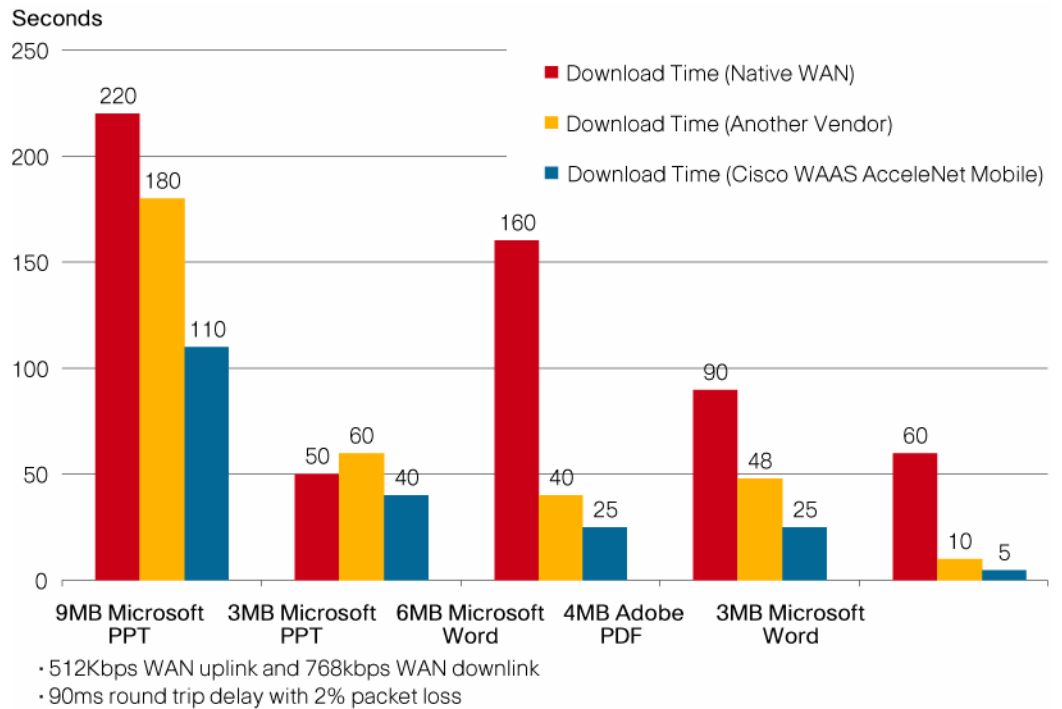
Cisco WAAS Mobile achieves industry-leading performance by extending Cisco WAAS acceleration technologies, including the following:

- Advanced data transfer compression: Cisco WAAS Mobile maintains a persistent and bidirectional history of data on both the mobile PC and the Cisco WAAS Mobile server. This history can be used in current and future transfers, across different VPN sessions, and even after a reboot to minimize bandwidth consumption and improve performance. In addition, instead of using a single algorithm for all file types, Cisco WAAS Mobile uses file-format-specific compression techniques to provide better compression than generic compression for Microsoft Word, Excel, and PowerPoint; Adobe Shockwave Flash (SWF); ZIP files; and JPEG, GIF, and PNG files.
- Application-specific acceleration: Cisco WAAS Mobile reduces application-specific latency for a broad range of applications, including:
  - Microsoft Exchange, with Microsoft Outlook Messaging API (MAPI) Protocol Acceleration
  - IBM Lotus Notes
  - Microsoft Windows file server and network attached server Common Internet File System (CIFS) acceleration
  - Web-based applications, with HTTP acceleration, supporting enterprise intranet and Internet applications
  - Secured web-based applications, with HTTPS acceleration, supporting secure intranet applications without compromising security
- Transport optimization: Cisco WAAS Mobile extends Cisco WAAS technologies to handle the timing variations found in packet-switched wireless networks, the significant bandwidth-latency problems of broadband satellite links, and noisy Wi-Fi and DSL connections. The result is significantly higher link resiliency.

These techniques are proving to be highly effective in mobile user environments

Small PC Footprint

Unlike alternatives that are ported from Linux-based branch-office WAN optimization devices and requiring significant CPU, memory, and disk resources, Cisco WAAS Mobile is purpose-built from the start for Windows-based PCs. As a result, it is highly efficient and requires a 40 percent smaller footprint and fewer computing resources than competing solutions. This lean architecture helps ensure the best possible performance while reducing resource consumption.

Low TCO

Cisco WAAS Mobile reduces the IT support requirements normally associated with PC software loaded on mass-user PCs and laptops by offering the following features:

- Administrator toolkit to customize client deployment packages for self-installation and integration with standard software distribution systems
- Centralized client policy management by application type and version
- Centralized patch management for zero-touch updates
- Automated detection of incompabilities with installed software and agents on the PC or laptop
- User-accessible diagnostics and one-click detailed problem reports for troubleshooting
- Centralized real-time session management and monitoring

These features are provided in addition to extensive interoperability testing with a wide range of operating systems, browsers, end-point security software, VPN client software, software distribution tools, and desktop application software including the Microsoft Office suite and IBM Lotus Notes.

Ease of Deployment

Cisco WAAS Mobile is a purpose-built, ready-to-use software solution consisting of client software for end users and software deployed on servers near existing VPN concentrators and extends the Cisco WAAS deployment (Figure 3).

The client-side software is transparent and requires no user maintenance or local configuration changes:

- Remote client configuration and installation: The Cisco WAAS Mobile client configuration is established by the system administrator, and the client software image can be loaded directly to remote devices using standard software distribution products including Microsoft, LANDesk, Altiris, and BigFix system management programs. The software client can also become part of the standard enterprise desktop image.
- End-user self-installation: Although the Cisco WAAS Mobile client software can be installed and configured by the end user, standard enterprise configurations can be used to help ensure that the client software is operational without any user interaction.
- No reconfiguration of applications: Cisco WAAS Mobile redirects data transparently to help ensure that no configuration changes are required for any application.
- No requirement to open incoming ports on client firewall or other local security software: Existing desktop security is fully preserved.
- Autodetection of high-speed networks: Autodetection allows users to automatically transition to the office network.

Cisco WAAS Mobile server software can be deployed easily as well:

- No changes are required to the application or file servers.
- No changes are required in network resources such as routers, switches, and WAN accelerators.
- No changes to IP network topologies are required because the traffic is directed to the Cisco WAAS Mobile server through the client software.
- In the event of a server failure, the only effect is loss of optimization, not loss of connectivity.
- Cisco WAAS Mobile is fully compatible with standard load-balancing solutions such as the Cisco ACE Application Control Engine for high-availability configurations.
- Cisco WAAS Mobile can be deployed with or without a Cisco Wide Area Application Engine (WAE) device, which provides branch-office user acceleration, enabling flexible deployment in enterprise environments:
  - Acceleration of mobile and home-office users only: Cisco WAAS Mobile only
  - Acceleration of mobile and branch-office users: Cisco WAAS Mobile and Cisco WAE

Figure 3. Cisco WAAS Mobile Extends Cisco WAAS Deployment
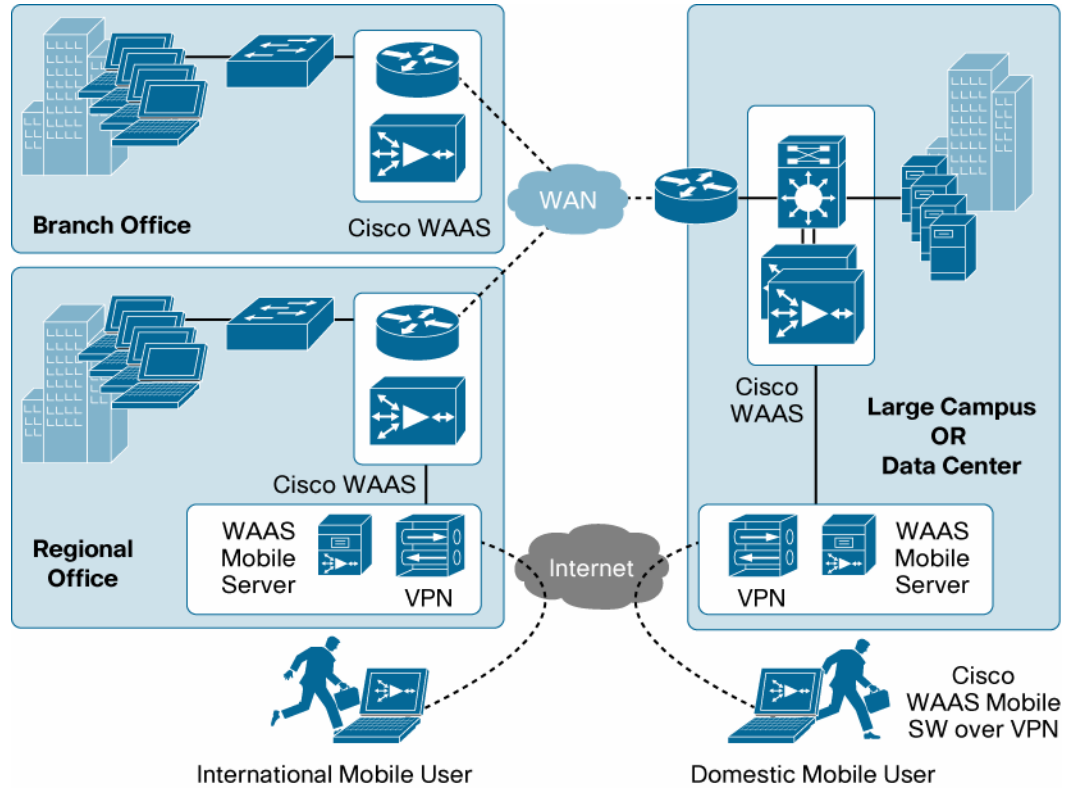
Cisco WAAS Mobile System Requirements

Table 1 lists client system requirements for Cisco WAAS Mobile, and Table 2 lists server requirements.

Table 1. Client System Requirements

Client System Requirements	Minimum	Recommended
Operating System	Microsoft Windows 2000 or later	Microsoft Windows XP or later
CPU	750 GHz	1.5 GHz
System Memory (RAM)	256 MB	512 MB
Disk Space Available	80 MB	1 GB

Table 2. Minimum Server System Requirements*

Client System Requirements	
Operating System	• Microsoft Windows 2003 Release 2 (SP1 and SP2) Standard • Microsoft Internet Information Server (IIS) Version 6 or later • Microsoft ASP.NET Version 2.0 framework (included in installation package) • SQLite (included in installation package)
CPU	Dual core 1.8 GHz
System Memory (RAM)	2 GB
Hard Drive	80 GB; 7.2-Kbps RPM
Interface	Dual Gigabit Ethernet network interface card (NIC)

* Refer to the Cisco WAAS Mobile sizing guides for sizing the server.

Ordering Information

Table 3 provides ordering information for Cisco WAAS Mobile.

Table 3.   Ordering Information

Product Name	Part Number
Cisco WAAS Mobile Server Software	WAAS-MBL-SRV-SW
Cisco WAAS Mobile 25 Concurrent User License	WAAS-MBL-LIC25
Cisco WAAS Mobile 100 Concurrent User License	WAAS-MBL-LIC100
Cisco WAAS Mobile 500 Concurrent User License	WAAS-MBL-LIC500

Cisco Service and Support

Cisco offers a wide range of services programs to accelerate customer success. These innovative services programs are delivered through a unique combination of people, processes, tools, and partners, resulting in high levels of customer satisfaction. Cisco services help you protect your network investment, optimize network operations, and prepare your network for new applications to extend network intelligence and the power of your business. For more information about Cisco services, refer to Cisco Technical Support Services or Cisco Advanced Services.

For More Information

For more information about Cisco WAAS Mobile, visit http://www.cisco.com/go/waas or contact your local account representative.

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