



# Transforming Branch Services with Cisco WAVE

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***Consulting System Engineer  
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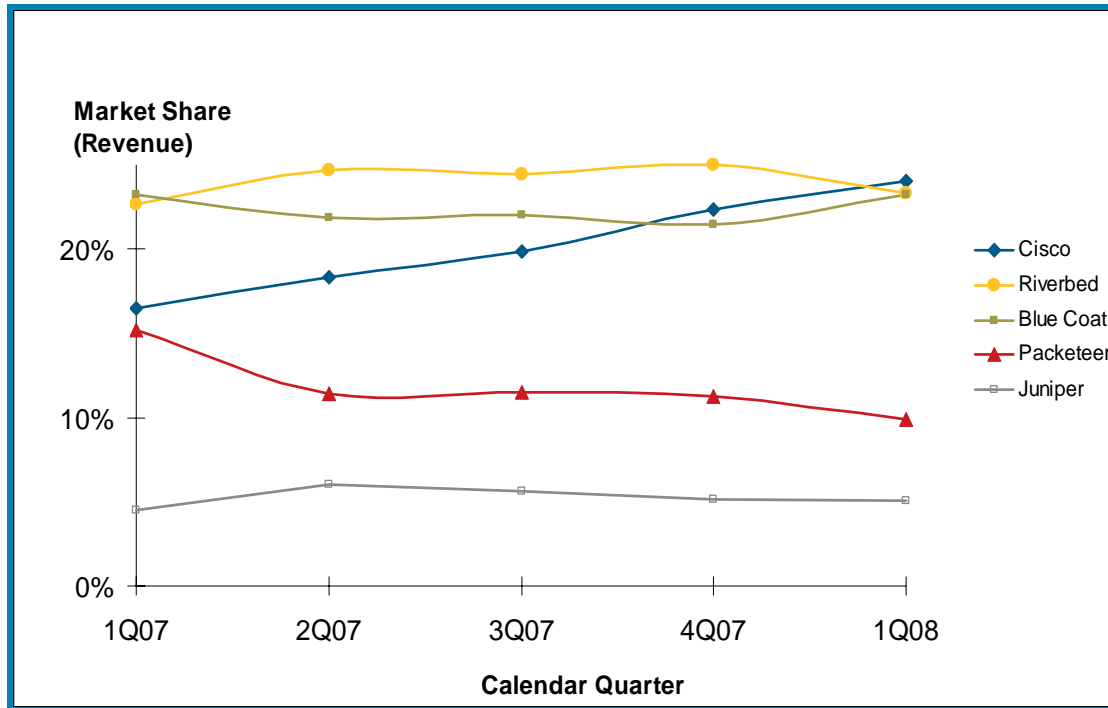


# Agenda

- **Market Update**
- **Product Update**
  - WAAS 4.1 Release
  - WAVE
- **Reasons Why Customers Choose Cisco**



# Cisco WAAS Market and Product Leadership



Source: Infonetics Research, Inc

- #1 WAN Optimization Vendor Worldwide
- Growing 2x faster than leading competitors
- Install base exceeds 25,000 units



2008 Gold Award by  
Search Networking for  
*WAN Optimization*



2008 Best of InterOp for  
*Network and Application  
Performance Optimization*



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# Introducing Cisco WAAS v4.1



## Ease of Deployment

- Transparency maintained for ease of ongoing operations

## Improved Application Performance

- MAPI, SSL, HTTP, NFS, Print-specific acceleration
- Developed and **validated with application vendors**

## Live video to the branch

- Eliminates complex configuration
- Eliminates bandwidth upgrades



## Flexible Branch Services Delivery

- Locally hosted core services (e.g. Windows Server 2008)

**Best of breed WAN optimization with integrated Video & Virtualization**

**Note: SSL encrypted traffic acceleration will be a beta/limited availability feature till Q4 CY08**

# Ease of Deployment

Faster install while preserving existing network services

## ■ New WAAS GUI features

Intuitive Configuration

Highly Customizable Reports

Real-Time Connection Monitoring

Diagnostic & Troubleshooting Tools

Virtual Blade Management

## ■ Quickstart wizard

Focused for inline deployment of appliances

Deploy WAAS in 30 minutes

## ■ Automation eliminates configuration

TCP Buffer Auto-tuning

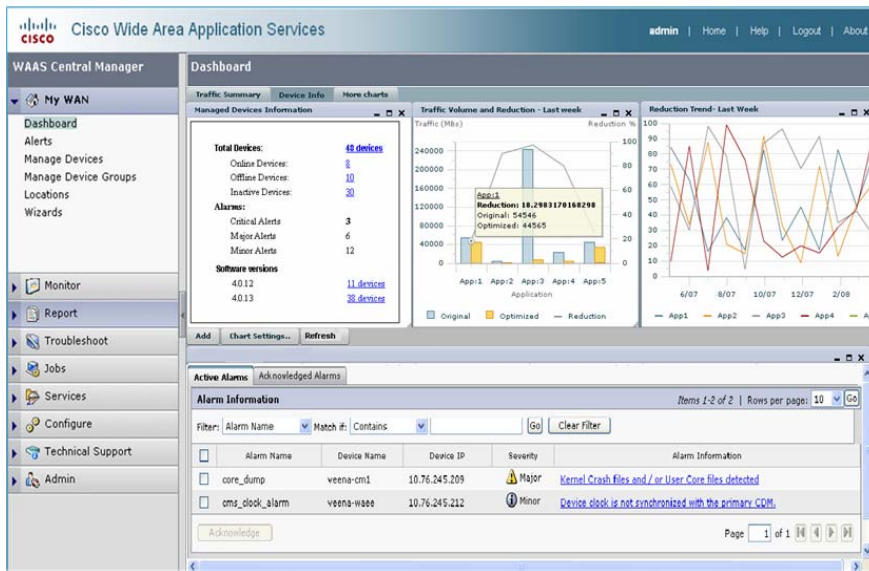
CIFS code/edge directives eliminated

Auto-Detection and optimization for Video Streams

Improved default settings & default policies

## ■ XML API for monitoring

For easy integration with network management systems



# Improve user-experience: Email (MSFT Exchange)

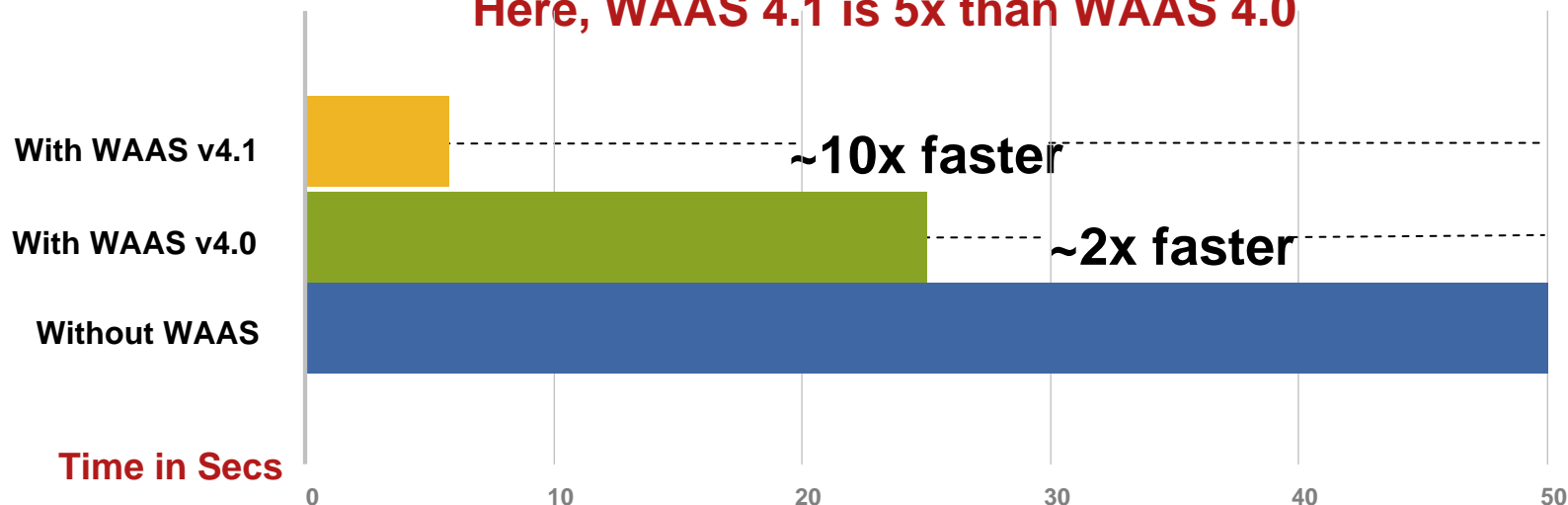
## Developed and Validated with Microsoft

### Benefits for Exchange 2000, 2003 and 2007 Users:

- Improved employee productivity due to faster transactions  
e.g. Accelerated send/receive/address book helps “morning rush” scenarios.
- Improved bandwidth savings when compared to native MAPI compression
- **Our advantages:** Optimal performance, best interoperability, and operational coverage provided by protocol licensing and escalation support agreement with Microsoft

5MB email attachment over 1.5Mbps WAN & 80 msec latency

**Here, WAAS 4.1 is 5x than WAAS 4.0**



# Improve User Experience: HTTP & HTTPS Applications

## Validated with Oracle, SAP & MSFT SharePoint

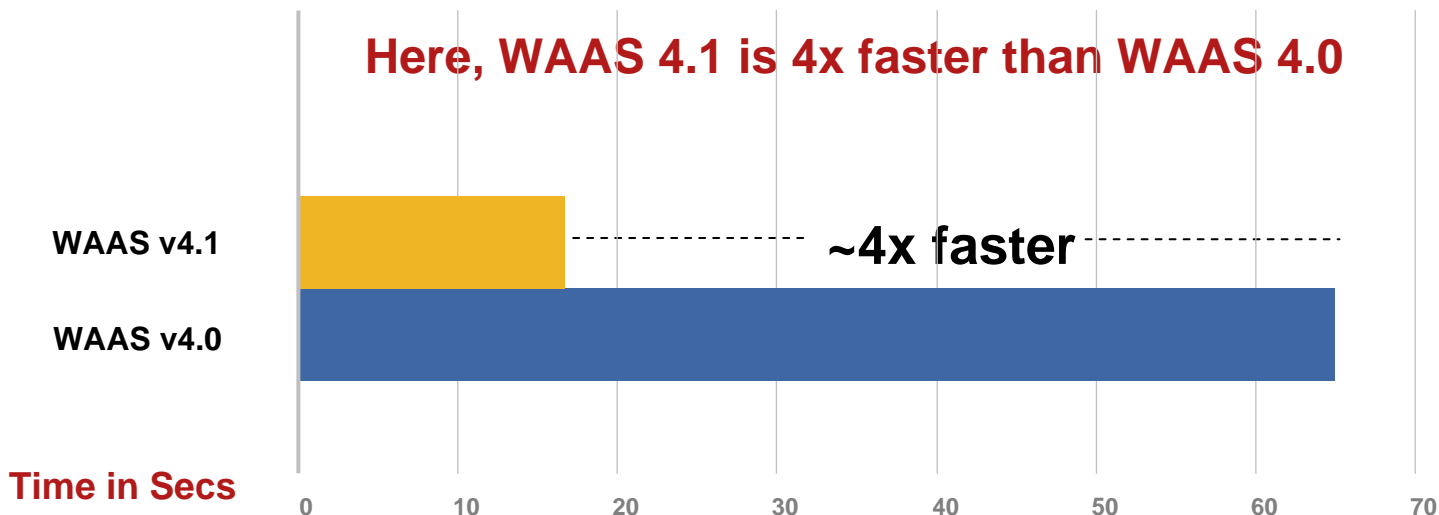
### Benefits for Web-Based Application Users:

- Optimizing latency and bandwidth limited HTTP and HTTPS (SSL) applications
- Easily integrates with several digital certificate infrastructures

### WAAS advantages:

- SSL Security Trust Model maintained - Server private keys remain within datacenter
- Accelerates widest range of enterprise SSL traffic including those that requires client authentication, real-time certificate revocation checks, and HTTP proxy

Encrypted Sharepoint document download 1.5Mbps WAN (80 msec)



Note: SSL encrypted traffic acceleration will be a beta/limited availability feature till Q4 CY08

# Improve User-experience: Centralized Print Service

## Developed and Validated with Microsoft

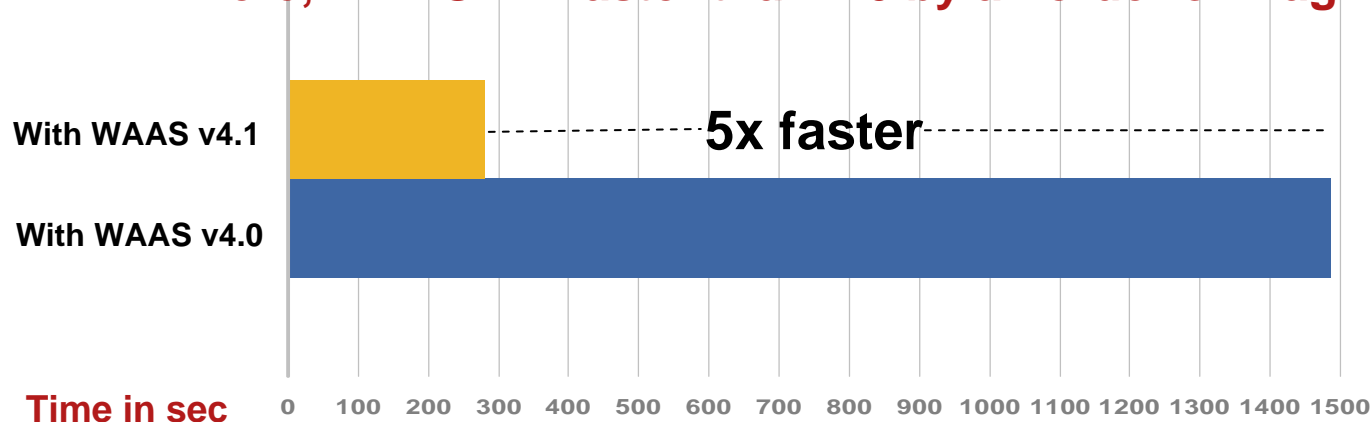
### Benefits for Windows Print Users:

- Enables Print Server consolidation to the datacenter
- Centralized print services with bi-directional LAN-like speeds
- Server offload reduces the number of print servers by up to 10x

**WAAS advantages:** Optimal performance, best interoperability, and operational coverage provided by protocol licensing and escalation support agreement with Microsoft

5MB document printed over 1.5Mbps WAN & 80 msec latency

**Here, WAAS 4.1 faster than 4.0 by an order of magnitude**



# Improve User-experience: Windows & Unix File Sharing

Validated with Microsoft for CIFS and Tested for Compliance for NFS

## Benefits for File Sharing Application Users:

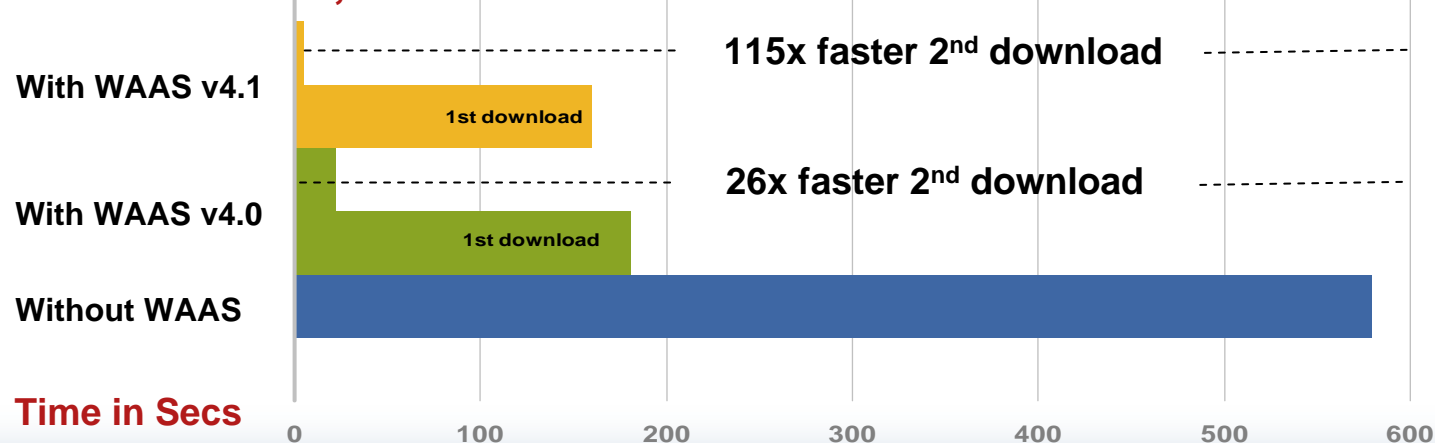
- NFS-specific acceleration for NFS v3 apps, large file transfers, software builds, CAD apps
- CIFS and NFS: fully network transparent, no configuration directives required
- NFS: Tested for Compliance for IBM AIX, Linux and Solaris clients & NAS vendors.

## **WAAS advantages:**

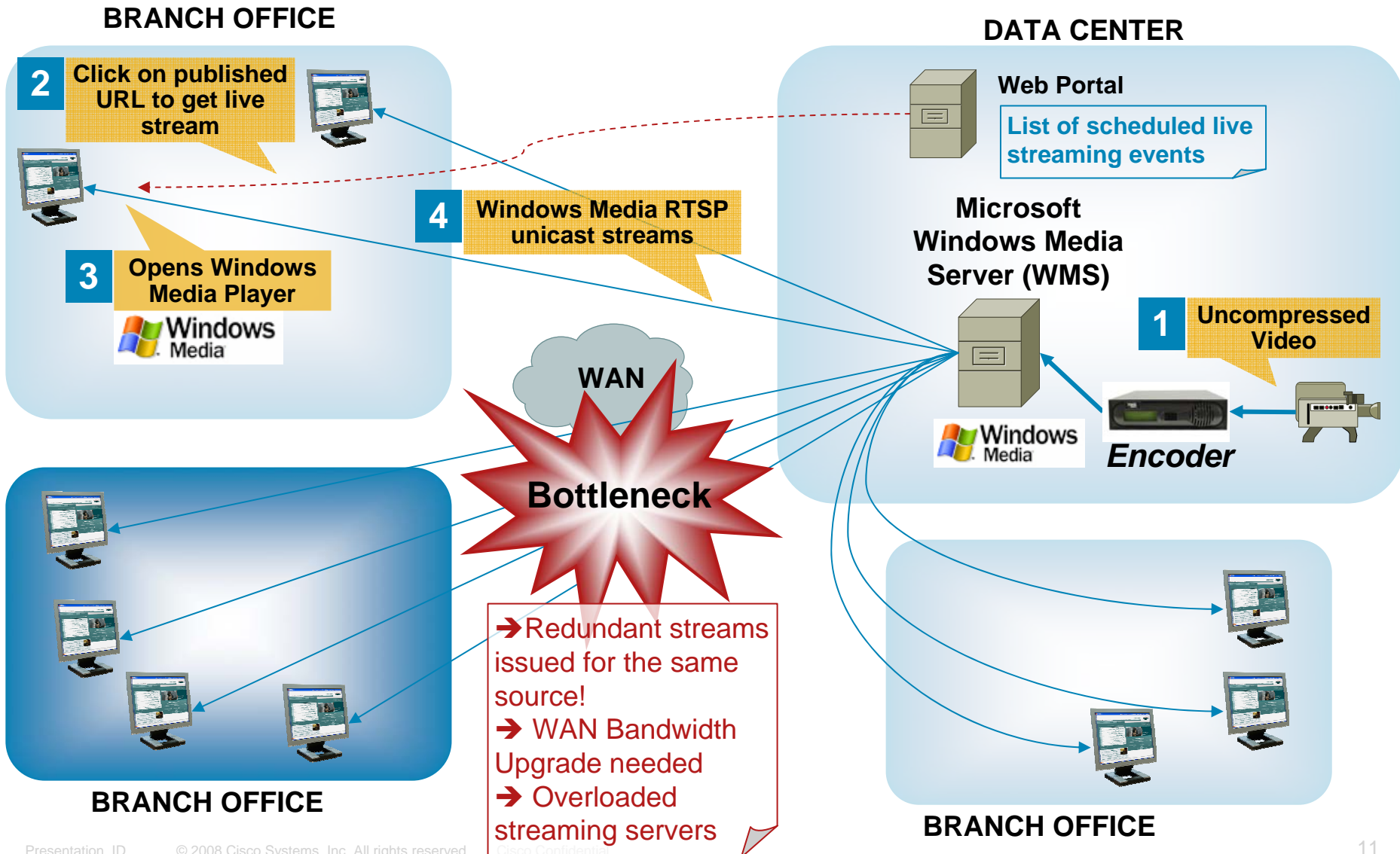
- CIFS: Optimal performance due to file pre-positioning and server offload capabilities
- CIFS: Best interoperability, and operational coverage provided by protocol licensing and escalation support agreement with Microsoft

5MB file over NFS over 1.5Mbps WAN (80 msec latency)

**Here, WAAS 4.1 is 4x faster than WAAS 4.0 for NFS v3**

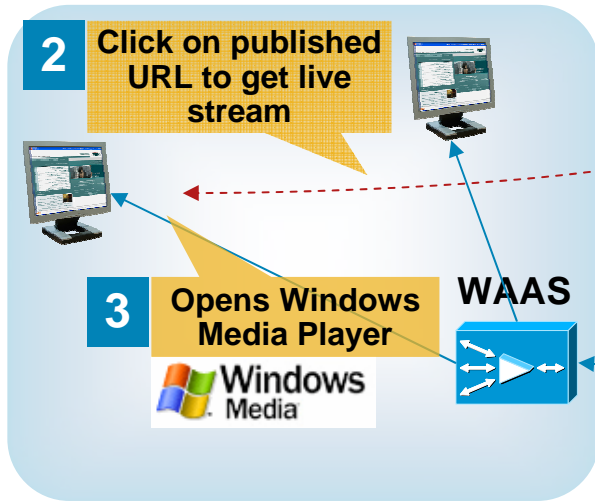


# Challenges with Live Video Delivery to Remote PCs

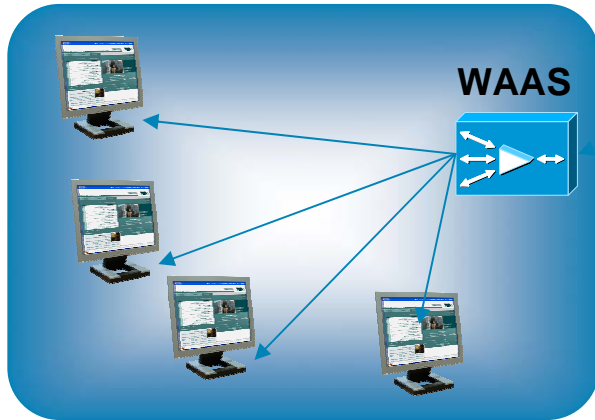
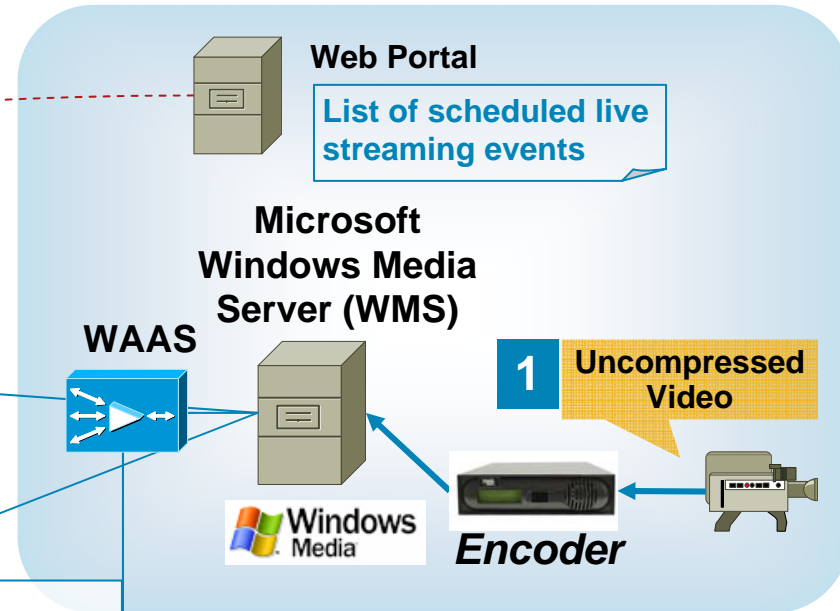


# Live Video Streaming with WAAS

## BRANCH OFFICE



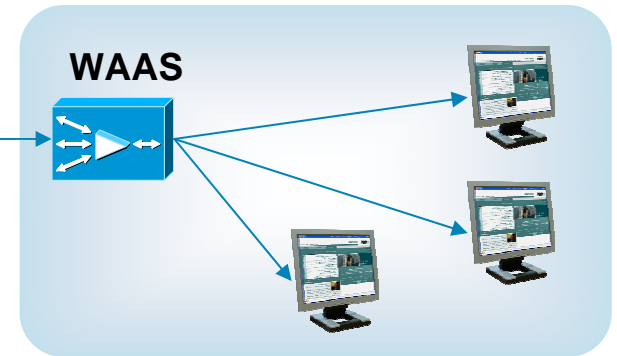
## DATA CENTER



## BRANCH OFFICE

### WAAS 4.1 Enables Wide-Scale Delivery of Live Video to the Branch

- ➔ Only 1 stream per site
- ➔ Eliminates WAN Upgrades
- ➔ Eliminates Complex Configuration (e.g. Multicast WAN)
- ➔ Server Offload reduces video servers by up to 10x



## BRANCH OFFICE

# Cisco DMS & WAAS to enable Video Applications in the Branch

- Q3 CY08 → Video to Branch Desktop

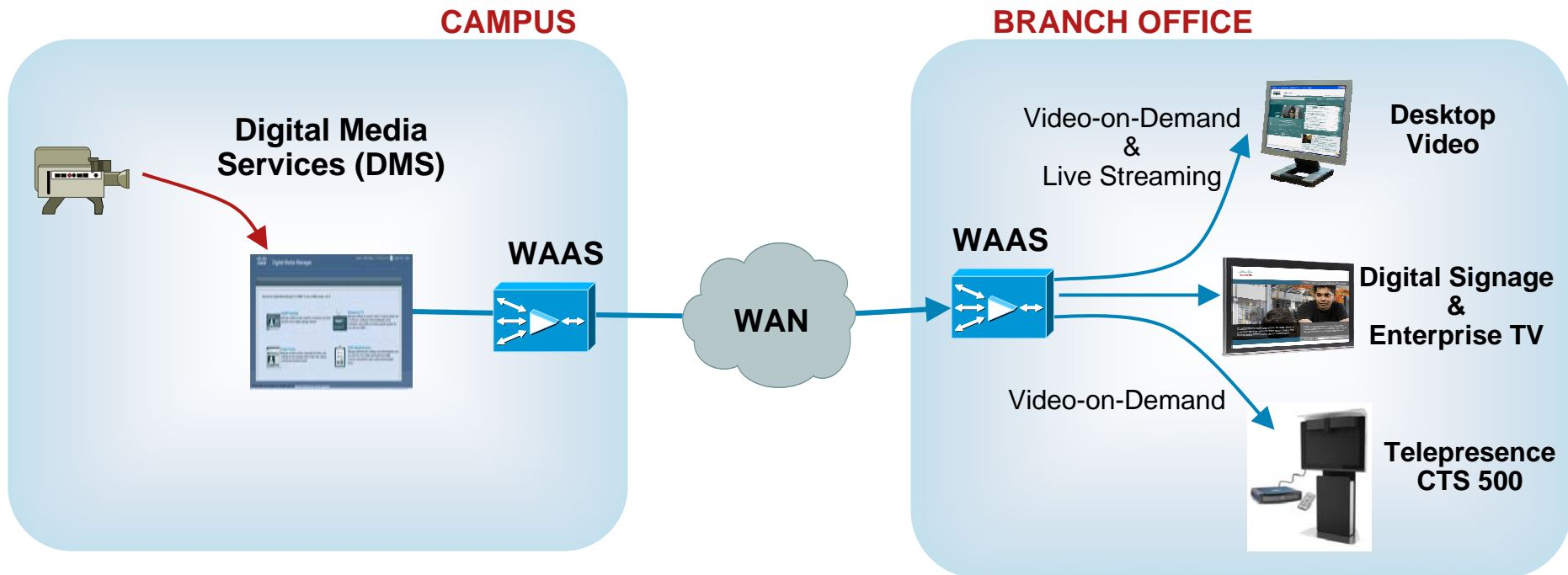
Live streaming and Video-on-Demand (VoD)

DMS in Data Center, WAAS 4.1 in Branch

- Q4 CY08 → Video to Branch Digital Signage

Cisco Digital Media Player (DMP) to pull video from WAAS (New DMP Feature)

WAAS can also deliver video to signage enabled Telepresence

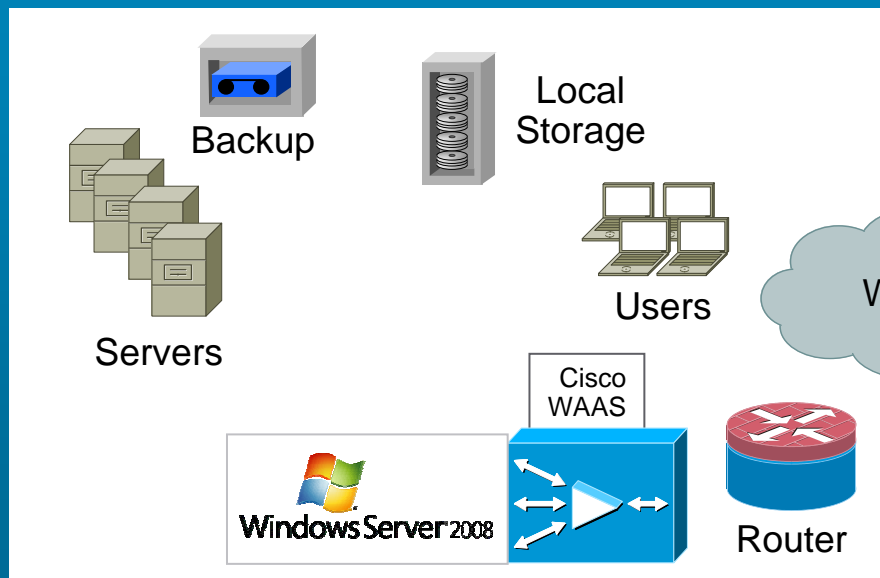


# Virtualized App Delivery for Branch Office

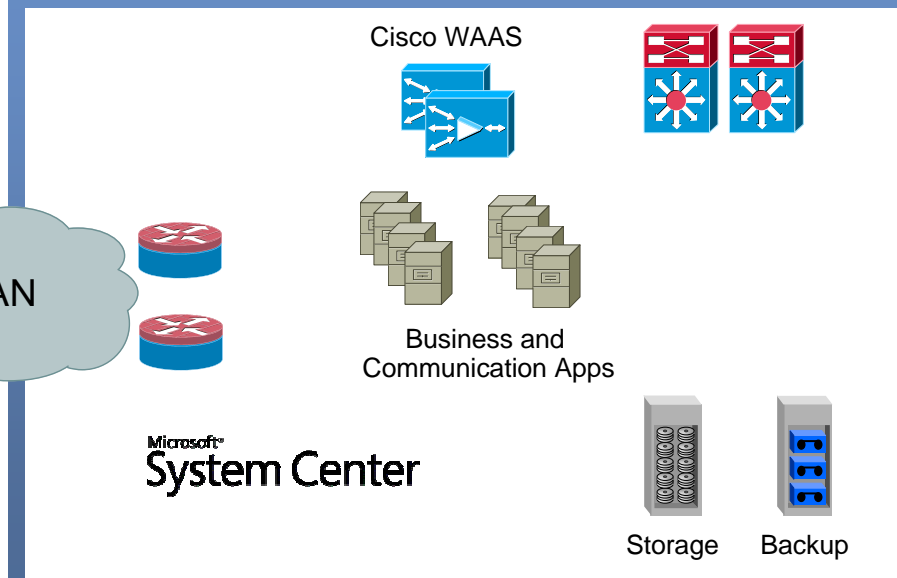
## Cisco WAAS 4.1 with Virtual Blade Technology

- Centralize what you can with WAAS
- Locally host services (e.g. Windows Server) on same WAAS device

### Flexible, Optimized Branch IT



### Data Center

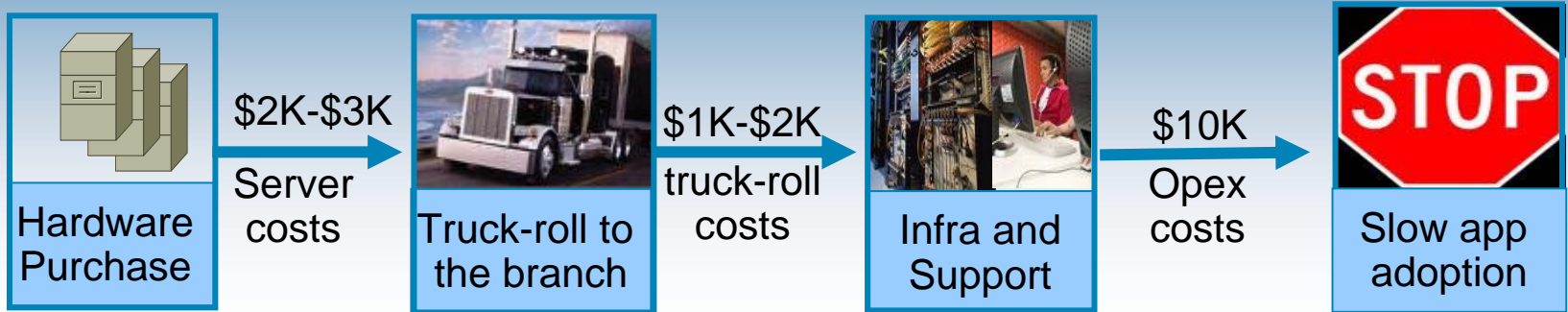


## Cisco WAAS Virtual Blade Technology

Providing Best Mix of Distributed and Centralized IT Services  
Validated by Microsoft for Windows Services

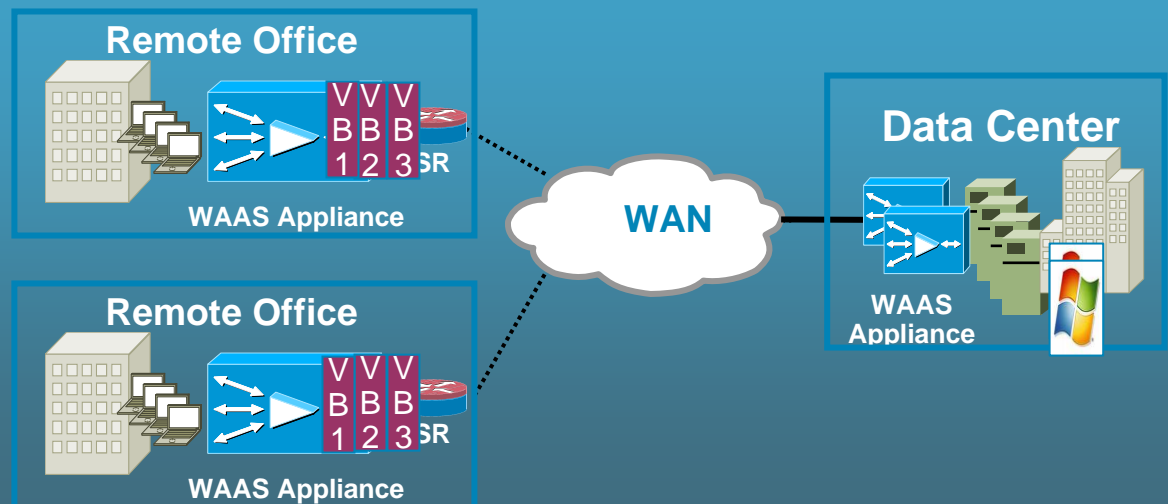
# WAAS Virtual Blades Simplify Services Rollout

- Traditional application roll-out to the remote office



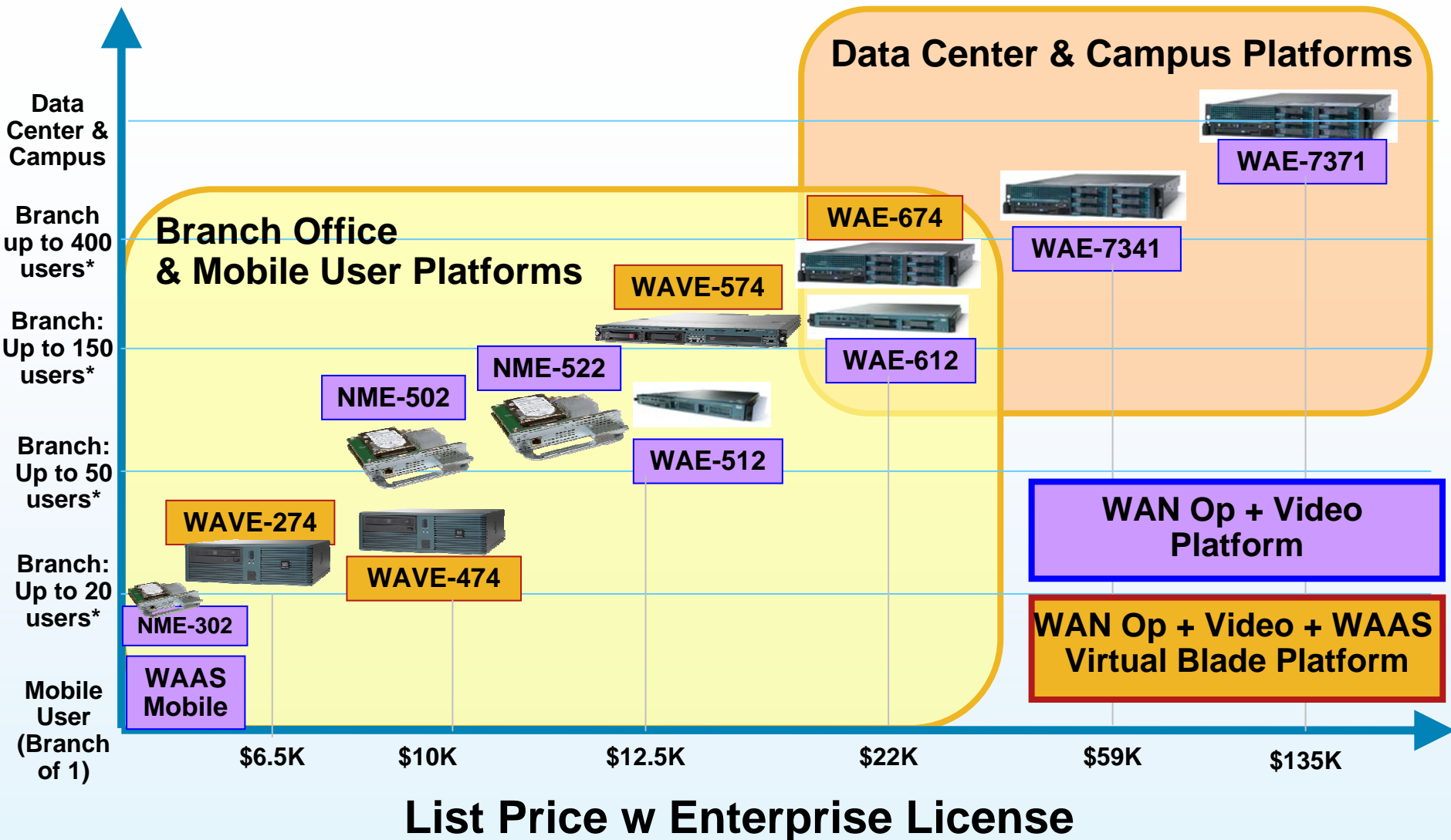
- Application rollout using WAAS Virtual Blades (VB)

- Create VB centrally
- Deploy applications



# WAAS Product Line Overview

## Location & Size\*





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# Reason #1 – Application Vendor Validated

- Best practices developed and validated with Microsoft, Oracle, SAP and other leading ISVs ([www.cisco.com/go/optimizemyapp](http://www.cisco.com/go/optimizemyapp))
- Vendor-specific protocols licensed, no reverse engineering
- Optimized branch architecture jointly developed with Microsoft
- Escalation Support Agreements with Application vendors



“We can quickly deploy Windows Services to remote offices and -- more importantly -- better service our remote users.”

— **Dwight Wheeler, Architect**



“Cisco WAAS has accelerated our SAP response time for up to 75% across WAN, and given us the best compatibility and lowest TCO.”

— **Jim Ward, CIO**



“On average we experienced 300 percent in download improvement for Oracle 10g and our customized web-based commodity trading applications.”

— **Thomas Mendez, Supervisor of Network Operations**

## Reason #2 – Network Integrated

- Network Transparency preserves network services to ease operations
- Auto-discovery that works across the full range of enterprise topologies
- Only solution that can provide full firewall security with WAN optimization
- Better with Voice on WAN due to integration with Router QoS

**nano**metrics

“Cisco WAAS accelerated the Microsoft Dynamics CRM better than our current solution, **while offering better performance and interoperability with VoIP.**”

— **Dave Kizer, Director of IT**



“The tunnel-less Cisco WAAS design makes it very easy for me to network-based services so I can remain focused on projects that contribute to the company’s success.”

— **Abraham Madha, CIO**



"The latest version of Cisco’s WAAS product line includes security features of special interest to us, including disk encryption and support for stateful firewall protection."

— **Barth Bailey, VP**

## Reason #3 – Lowest TCO

- Lower capex and opex with WAAS Module in Branch Router
- Eliminate bandwidth upgrades and automate wide-scale delivery of live video
- Minimize branch device footprint through WAAS Virtual Blades
- Server offload reduces centralized file, video and software distribution servers by up to 10x



“We were able to increase the network performance without having to actually increase the network bandwidth.”

“Network Module lowers total cost of ownership (TCO), because it is covered under Cisco maintenance service for the router, and it saves space and power”

— **David Gula**



“WAAS clearly met our needs and is the most cost-effective solution among all alternatives that we evaluated.”

— **Paul Babcock, Manager of Network & Computer Operations**



“The three-month return on investment for WAAS has been met with great approval by ADC. Likewise, our Juarez staff is elated with the 500 percent increase in application acceleration.”

— **Dave Brady, vice president of IT, ADC**

# Cisco's Commitment to Technology Leadership in WAN Optimization

## 6 Feature Releases 2 years + WAAS Mobile

Sep 2006	<ul style="list-style-type: none"> <li>▪ <b>WAAS 4.0 on Appliances</b></li> </ul>
Dec 2006	<ul style="list-style-type: none"> <li>▪ <b>WAAS on Router Network Module</b></li> </ul>
April 2007	<ul style="list-style-type: none"> <li>▪ <b>“Quick Deployment” for WAAS</b> Transparent Inline Mode &amp; CIFS Server Auto-Discovery</li> </ul>
Aug 2007	<ul style="list-style-type: none"> <li>▪ <b>Differentiators on Security, Scalability, Application SLA</b> Including a new GUI w real-time connection monitoring</li> </ul>
Jan 2008	<ul style="list-style-type: none"> <li>▪ <b>WAAS certified by Microsoft, Oracle, SAP other major ISVs</b></li> <li>▪ <b>WAAS Mobile</b> WAN Acceleration for Laptop users on a VPN connection</li> </ul>
June 2008	<b>WAAS for DC to DC Storage Replication</b>
Aug 2008	<b>WAAS 4.1 Release</b> <b>Best in class GUI and Ease of Deployment</b> <b>Improved optimizations for Web, File-share, Exchange, SSL and Print</b> <b>Live Video Streaming &amp; integration with Cisco DMS</b> <b>Windows on WAAS, Virtual Blades</b>

