

Test Scenario

Tests were conducted downloading Apple iOS / OS X upgrades and iTunes from either the Apple App store or Apple website. Downloads took place over a simulated 1.544 Mbps (T1) Internet link with 100 ms latency.

All downloads were asymmetrical (single arm), 'direct-to-net' paths where data was not back-hauled through data center.

- > First Pass, starting condition: No traffic has passed through the Blue Coat appliances.
- > Same Object, starting condition: The same object has already passed through the Blue Coat appliances. (Access to the same file by multiple employees in the same office)

Performance Summary

- > Time to download iPhone iOS 4.3 update reduced by 94.7%. Bandwidth reduction of 99.9%
- > Time to download Mac OS X (Lion) upgrade reduced by 95.2%. Bandwidth reduction of 99.9%
- > Time to download iTunes 10.4 install package reduced by 97%. Bandwidth reduction of 99.9%

Blue Coat 'Direct-to-Net' Capability Optimizes Downloads of iOS, MAC OS X and iTunes

Since introduction, Apple's iPhone and iPads have experienced exponential growth driven by consumers worldwide. Many consumers use their iPhones and iPads for both personal and business and this has led to acceptance and support by IT departments the world over. Adoption of iPhones and iPads has also led to expanded Mac laptop and desktop sales as consumers consolidate their computing needs to a single vendor – Apple Inc. With tens of thousands of low-cost applications developed for the iPhone and iPad, users are unleashed to be continuously productive. Businesses have developed iOS-based applications and tailored web apps to maximize the capabilities of iPhones and iPads to ensure connectivity and productivity.

While iPhone, iPad and Mac laptops/desktops are computing platforms that drive productivity, issues such as latency and large file sizes can impact updating and upgrading OS or application releases to maintain security and user effectiveness. Blue Coat Systems provides an end-to-end WAN optimization solution based on MACH5 technology to significantly reduce download time and minimize bandwidth usage to complete software download operations so employees are productive.

Apple Downloads over the Internet

Acceptance of iPhones and iPads and their ease of use have enabled businesses to improved productivity and responsiveness. Untethered by wireless connectivity, iPhone and iPad users are free to be at the right place at the right time, while maintaining access to the applications that drive business revenues. Accessing email and calendar planning along with tens of thousands of web-based applications enable even the most remote employees to be driving business activity.

Keeping iPhones, iPads, and Mac laptops/desktops secure and updated can be demanding with periodic updates and upgrades. iOS and Mac OS X updates and upgrades can range from a few Megabytes to several Gigabytes in size. With many businesses having a multitude of iPhone or iPad users and in some cases, users with both, these software downloads can easily overwhelm network resources and impact critical applications. Minimizing impact of these software downloads on business resources is paramount.

How Blue Coat Accelerates and Optimizes Apple Software Downloads

Blue Coat's MACH5 WAN optimization technology improves transfer times and reduces the bandwidth consumed by software downloads for iPhones, iPads, and Mac laptop and desktop computers.

- Object Caching allows repeated downloads of the apple Mac OS X or iOS files from Microsoft SharePoint to be served from the local WAN optimization appliance.
- Industry leading quality-of-service, bandwidth management, and visibility ensure that Apple software download files are transferred with the right priority and sufficient bandwidth, and not in competition with unwanted or unproductive traffic.

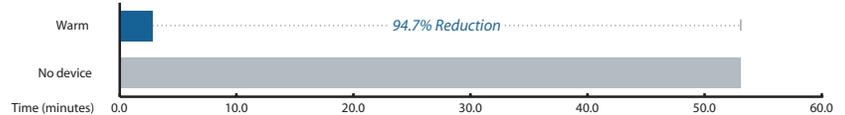
Performance Results

Using a simulated 1.544 Mbps (T1) Internet link with 100ms latency. Internet to Data Center or Branch, unless otherwise noted.

Apple iPhone iOS 4.3 (666MB) update download (Internet to Data Center or Branch Office)

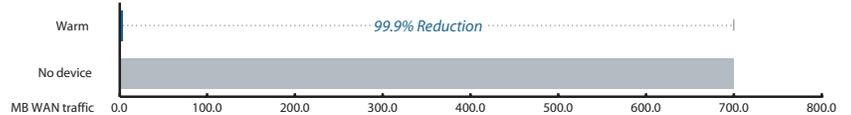
Time required to complete downloads via Internet from Apple.com website.

Download iPhone iOS 4.3 update over T1 WAN with 100ms latency (666MB iOS IPSW, no device = 53.1 minutes, warm = 2.8 minutes)



Bandwidth reduction when subsequent users download via Internet from Apple website.

Download iPhone iOS 4.3 update over T1 WAN with 100ms latency (666MB iOS IPSW, no device = 698.6MB, warm = 0.65MB)



Blue Coat Benefits

Improve User Productivity

Object caching significantly reduce the time required to complete the software downloads from Apple and the App store.

Reduce Bandwidth Usage

Object caching significantly reduce the amount of file data over the Internet.

Secure and Easy Deployment

Integrate securely with your IT infrastructure, even offloading user access authentication.

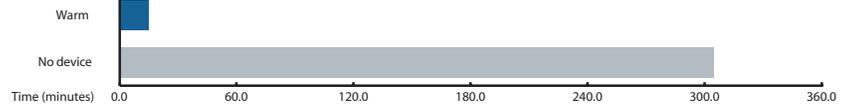
QoS and Bandwidth Management

Deploy Blue Coat to intelligently prioritize and bandwidth-shape Microsoft application file and video traffic from non-essential traffic to ensure business operations run smoothly.

Apple MAC OS X (Lion) download (3.76GB) (Internet to Data Center or Branch Office)

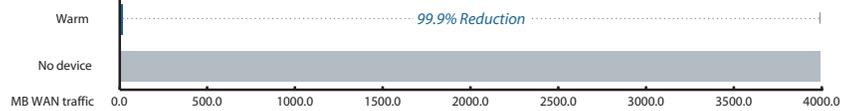
Time required to complete downloads via Internet from Apple App store.

Download Mac OS X Lion over T1 WAN with 100ms latency (3.78GB LionInstaller.app, no device = 304.9 minutes, warm = 14.6 minutes)



Bandwidth reduction when subsequent users download via Internet from Apple App store.

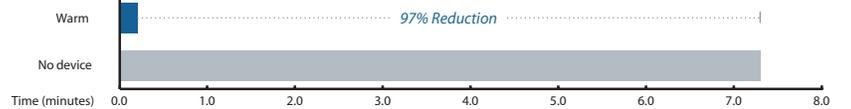
Download Mac OS X Lion over T1 WAN with 100ms latency (3.78GB LionInstaller.app, no device = 3963.0MB, warm = 4.1MB)



Apple iTunes Installation package (77.7MB) download (Apple.com to Data Center or Branch Office)

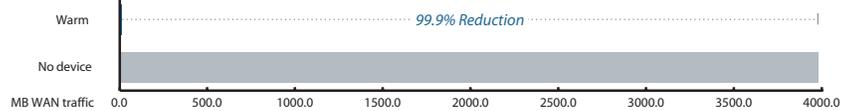
Time required to complete downloads via Internet from Apple.com website

Download iTunes 10.4 install package over T1 WAN with 100ms latency (77.7MB iTunesSetup.exe, no device = 7.3 minutes, warm = 0.2 minutes)



Bandwidth reduction when subsequent users download via Internet from Apple website.

Download Mac OS X Lion over T1 WAN with 100ms latency (3.78GB LionInstaller.app, no device = 3963.0MB, warm = 4.1MB)



## About Blue Coat MACH5 Acceleration Technology

Blue Coat MACH5 technology is a patent-pending combination of five separate application management and tuning technologies that provide unrivaled improvements in application performance and bandwidth utilization. Whether at the edge of your network, or right in the heart of it, MACH5 technology provides a powerful toolkit for meeting any application delivery challenge.

These technologies include:

### Bandwidth Management

Assign priority and network resources based not only on port or device, but on users, applications and content to more accurately reflect your corporate policies on the network. Works by itself, or integrates with your infrastructure QoS to provide application intelligence to the packet switching network.

### Protocol Optimization

Improves the performance of protocols that are inefficient over the WAN through specific enhancements that make them more tolerant to the higher latencies typically found there. Blue Coat has been optimizing network protocols for over a decade, and offers multiple improvements for TCP, CIFS, HTTP, HTTPS, MAPI and most streaming video and IM protocols.

### Byte Caching

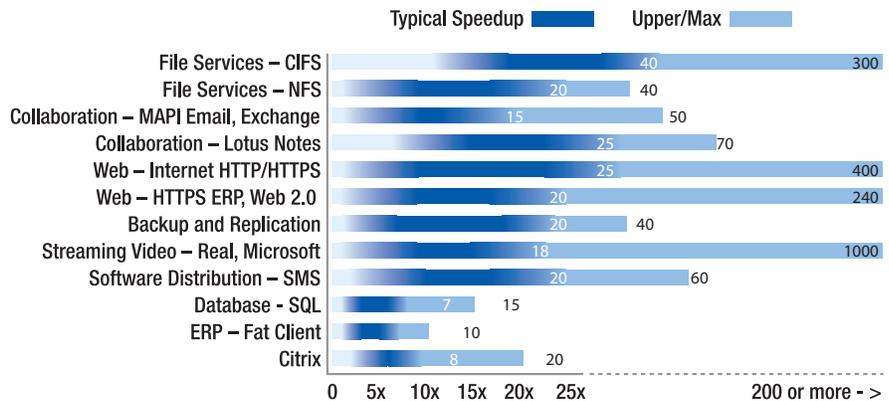
Cache repetitive traffic found in the byte stream and serve it locally to reduce the amount of traffic that actually uses the WAN at all. Works like a customized compression algorithm for your network traffic, and leads to dramatic bandwidth savings.

### Object Caching

Store files, videos and web content locally, providing LAN-like performance for WAN users, without the overhead and risk of traditional wide area file services. For content delivery, no technology does more to reduce latency and bandwidth to improve the end user experience.

### Compression

Inline compression can reduce predictable patterns even on the first pass, making it an ideal complement to byte caching technology.



## About the Blue Coat ProxyClient

ProxyClient builds on Blue Coat's Secure Web Gateway and acceleration technologies to extend application delivery to the desktop. Using MACH5 technology, including caching, compression and protocol optimization, ProxyClient accelerates web and office applications for roaming and small branch users. ProxyClient delivers LAN-like user experience and Blue Coat web filtering with a simple and easy footprint for installation, configuration, deployment and ongoing maintenance.