

MACH⁵ Acceleration Technology

Blue Coat's Application Acceleration Solution with MACH⁵ Technology Enables Organizations to:

Centralize remote office applications
MACH⁵ acceleration technology makes centralizing applications work. Blue Coat's unmatched policy-based controls ensure that MACH⁵ is applied the right way, to the right applications. Thus, organizations can consolidate applications to meet cost and compliance requirements, and still maintain application performance.

Accelerate Business Applications, Limit Non-Business Applications

With MACH⁵, enterprises can accelerate all key business applications – file, e-mail, web, video, secure web (HTTPS), while maintaining complete control over non-business applications (e.g., P2P, IM, Skype) and unwanted network traffic (Spyware, inappropriate Web content, malicious traffic).

Accelerate Encrypted Applications

More and more applications are being "webified," and many of those are hosted (or partially hosted) outside the enterprise. This often means that HTTPS/SSL is a greater portion of overall traffic. Blue Coat's MACH⁵ technology can accelerate this encrypted traffic – even when the application is hosted/owned by a third party.

Accelerate Video Applications

For cost and compliance reasons, more and more organizations are turning to multimedia training (streaming/live video, or video on demand), delivered over enterprise networks. Blue Coat's MACH⁵ technology accelerates these applications, and minimizes network impact.

Anticipate Evolution

Both applications and networks are evolving at a rapid pace. Whether that evolution brings new applications or direct connections to the Internet at remote sites, MACH⁵ technology accelerates enterprise applications, and limits or eliminates undesirable applications, regardless of changes in applications and networks.

Accelerate Productivity and Business Performance

Poor application performance creates inefficiencies for distributed users, as well as for customers and partners. That translates to inefficiencies in internal operations, customer satisfaction, and overall business performance.

Blue Coat appliances optimize application delivery to remote users across the enterprise

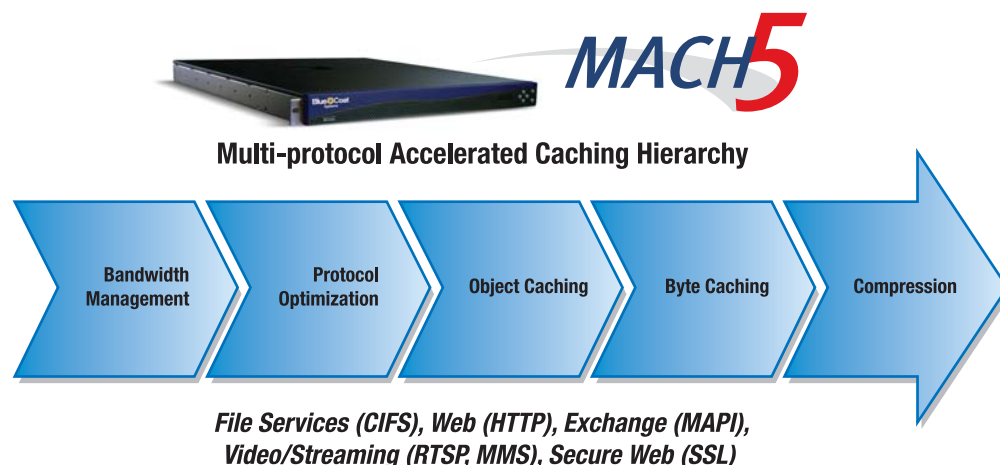
As organizations and employees become more distributed, the productivity of users in branch and remote offices has become increasingly important to the success and growth of the business as a whole. Distributed users, therefore, need fast, secure access to the applications that run the business. However, rather than having these applications distributed to multiple sites, the current trend is to consolidate (or outsource) critical applications and servers to fewer, centralized locations.

This simplifies server and application administration but often creates performance problems for distributed users. In many cases, a consolidated application is a poorly performing application. The combination of long distances between users and applications, narrow-bandwidth/latency-prone network pipes, and applications and protocols stretched beyond their design limits, all conspire to produce poor application performance at remote sites. Applications that are also bandwidth-hungry or response time-sensitive exacerbate the problem.

In response, many IT organizations have begun to evaluate specialized solutions that can accelerate application delivery to branch and remote offices. Such solutions should be examined in light of application mix and evolution, and the way networks are changing. Solutions should support all key enterprise business applications – regardless of whether they are webified or not, rich media or plain text, hosted internally or externally, or encrypted or unencrypted. In addition, it is important to consider support for future WAN architectures – for example, a mix of MPLS VPNs with direct-to-Internet branch office connectivity.

The Blue Coat Solution

Blue Coat's application acceleration solution, featuring MACH⁵ (Multi-protocol Accelerated Caching Hierarchy) technology, enables organizations to accelerate delivery of all key productivity applications to users in branch and remote offices – including file services, e-mail/Exchange, Web applications, video, and secure Web (encrypted SSL) applications. MACH⁵ encompasses five acceleration techniques that work in concert – Bandwidth Management, Protocol Optimization, Object Caching, Byte Caching, and Compression.



Bandwidth Management/Traffic Shaping

This technique assigns a priority to a particular type of application. This priority has an effect both on the order the traffic is sent in, and in the amount of guaranteed bandwidth the application is allocated, regardless of other traffic on the network. This technique ensures that the network is available for the highest priority traffic. Likewise, less important applications can be throttled back and assigned limited bandwidth to help ease network congestion.

Protocol Optimization

Protocol optimization takes protocols that are inefficient over the WAN (e.g., CIFS, MAPI, HTTP, TCP, HTTPS) and makes them more efficient – typically by converting a time-consuming serial communication process into a more efficient parallel process where many communication tasks are handled simultaneously. There are a variety of other optimization techniques, depending on the protocol (e.g., TCP session reuse). While protocol optimization does not reduce the amount of bandwidth an application consumes, it can greatly accelerate delivery of applications and reduce latency in the process.

Byte Caching

Byte caching is as it sounds – a low-level cache of small, sub-application-object bits of information. Byte caching observes repetitive patterns in application traffic, symbolizes those patterns with a token, and sends the token in lieu of the bulky traffic. These tokens are typically only a byte or two, but symbolize blocks of data as large as 64KB. Byte caching is typically not application-specific, and operates at a lower level, optimizing all TCP traffic.

Object Caching

Object caching is very different than byte caching – it is protocol/application specific, and is an all-or-nothing affair. If the cache contains the object, the user is immediately served the object from a local store – virtually eliminating latency and WAN bandwidth consumption. If the cache does not contain the object (or contains an outdated version of the object), then for that particular transaction, a new object must be reloaded into cache and the performance gains are realized the next time the object is requested.

Compression

Compression technology uses a variety of common algorithms to remove extraneous/predictable information from the traffic before it is transmitted. The information is reconstituted at the destination based on the same algorithms. It is effective because performance gains are immediate – the first time something goes through is just as fast as the second. This technique, when applied with byte and object caching as discussed above, helps optimize bandwidth savings and performance.

With MACH⁵, all of these techniques work together to optimize application delivery to remote locations. For example, if the object cache contains an outdated copy of a document, the byte caching capability has patterns and tokens that require only the tokens, plus the changes to be sent. What little is sent is then compressed, and protocol optimized (reducing bandwidth consumed and latency/round trips). All of this is prioritized according to the enterprise's preferences, using bandwidth management, such that the important applications get through first with the bandwidth they need.