

# An Overview on MPLS: Providing Connectivity When and Where You Need It

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Combine any-to-any connectivity with high performance, security, flexibility and scalability. Strategically integrate disparate networks into a single, seamless global solution. Leverage the favorable return on investment and total cost of ownership characteristics associated with IP Virtual Private Networks (IP VPNs).

What makes all of this possible? Multiprotocol Label Switching (MPLS). MPLS is a standardized protocol and comprehensive networking technology that blends the best of IP routing and ATM switching. In AT&T's view, no other single network architecture offers all of the properties of MPLS. In short, MPLS represents a new and important generation in wide area networking.

## Did you know?

- The demand for MPLS keeps accelerating. Furthermore, analysts project MPLS deployments to continue experiencing significant growth through 2007. They project that MPLS will serve as the dominant approach to network-based IP VPNs.
- MPLS offers numerous benefits: advanced application support with Class of Service (CoS) and Quality of Service (QoS) mechanisms, network scalability through any-to-any connectivity and communications flexibility through its support of secure IP VPNs.
- AT&T was the major first networking provider to deliver MPLS services with the initial customer implementation in early 1999. Today, most major carriers have either deployed or announced plans to deploy MPLS.
- AT&T has recently invested over \$300 million in its global expansion and continues to invest in both expansion and underlying operational infrastructure.
- "Leaders" category for Managed IP VPN Services, Source; Evaluating Managed IP VPN Services (Forrester Research, September, 2004).
- AT&T BusinessDirect® Portal has won four major award in fourth quarter 2004.

- Seven key analysts have rated AT&T as a leader in IP VPN. The AT&T VPN portfolio has been recognized first in performance, functionality, international coverage and breadth of services.

## Frequently Asked Questions

### Q. How does MPLS Work?

A. MPLS is a standardized protocol and comprehensive networking architecture. MPLS enables data to be transmitted efficiently across a network infrastructure utilizing a technique known as "label switching." In short, a "label" is appended to each data packet as it enters the network from your environment. This tag uniquely identifies that packet as belonging to your specific IP VPN. Upon reaching its destination, the tag is removed, thereby returning the data packet to its original, unaltered state – the process is seamless and unnoticeable to your end-users.

### Q. Is MPLS secure?

A. MPLS security is similar to that provided by Frame Relay/ATM. It is designed to provide a highly secure networking environment, while minimizing the risks associated with many potential threats. For example, MPLS "tunnels" – called label-switched paths (LSPs) – are not subject to spoofing, a common technique used by Internet hackers. Although MPLS-based services are securely provisioned across the carrier's network, some enterprises may prefer to employ additional security measures as a complement to MPLS, such as encrypted tunnels utilizing technologies such as IPsec or SSL.

### Q. Why is MPLS the technology of choice?

A. In order to replicate the characteristics inherent in MPLS, service providers must adopt a "patchwork" approach that utilizes a variety of disparate protocols

MPLS serves as a key component of AT&T's IP VPN portfolio, a comprehensive suite of services designed to address a broad range of enterprise-class networking

needs. AT&T's approach to delivering services improves your networking experience by helping to design, deploy, manage and evolve with your complex networking

requirements. Dependent upon your unique requirements and objectives, MPLS may well serve a primary role in your enterprise's network solution.

and techniques. Such an approach lacks the scalability, reliability and simplicity afforded by MPLS. Industry analysts suggest that providers will fund investment in MPLS will enable their

ability to provide enterprise class VPNs, which realize a return on investment. AT&T is an industry leader in managed IPVPNs and has the portfolio to meet the needs of global businesses.

