Any Transport over MPLS

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Any Transport over MPLS (AToM) allows service providers who offer Layer 2 (L2) connectivity to expand service offerings by connecting Ethernet, ATM, Frame Relay, Serial/PPP and TDM networks through an MPLS backbone. AToM is Cisco's implementation of Virtual Private Wire Service (VPWS) for IP/MPLS networks. AToM is a scalable architecture based on label switching that allows multiplexing of connections. It is also standards-based open architecture and can be extended to other transport types.

Deployment of AToM networks is of interest to customers who:

- Wish to protect network investment by implementing AToM on existing MPLS networks
- Require scaling of Frame Relay and ATM implementations to OC-192 speed and performance
- Provide "Virtual leased line" like services with QoS and MPLS Traffic Engineering
- Simplify provisioning with point-to-point connections of several types in a simple network infrastructure

AToM Supported Transports

Cisco currently supports the following transport mechanisms:

- Ethernet over MPLS
- ATM AAL5 over MPLS
- Frame Relay over MPLS
- ATM Cell Relay over MPLS
- PPP over MPLS
- HDLC over MPLS
- Circuit Emulation over MPLS

Cisco AToM, Ethernet over MPLS

With Cisco AToM Ethernet over MPLS, service providers can offer customers ways to economically create an Ethernet virtual local area network (VLAN) among geographically separated sites. Sites in different cities can operate together transparently over an MPLS network as though they were on a common Ethernet network.

Cisco AToM, ATM AAL5 over MPLS

With Cisco AToM ATM over MPLS, Cisco supports ATM Adaptation Layer Type-5 (AAL5) Transport over an MPLS network. This allows efficient transportation of PVCs across the MPLS backbone. Multiple PVCs can be multiplexed onto a single label switched path between the provider edge routers.

Cisco AToM, Frame Relay over MPLS

With Cisco AToM Frame Relay over MPLS, customers' Frame Relay traffic can be encapsulated in MPLS packets and forwarded over an MPLS backbone to other Frame Relay destinations required by the customer. Service providers can quickly add new sites with less effort than typical Frame Relay provisioning.

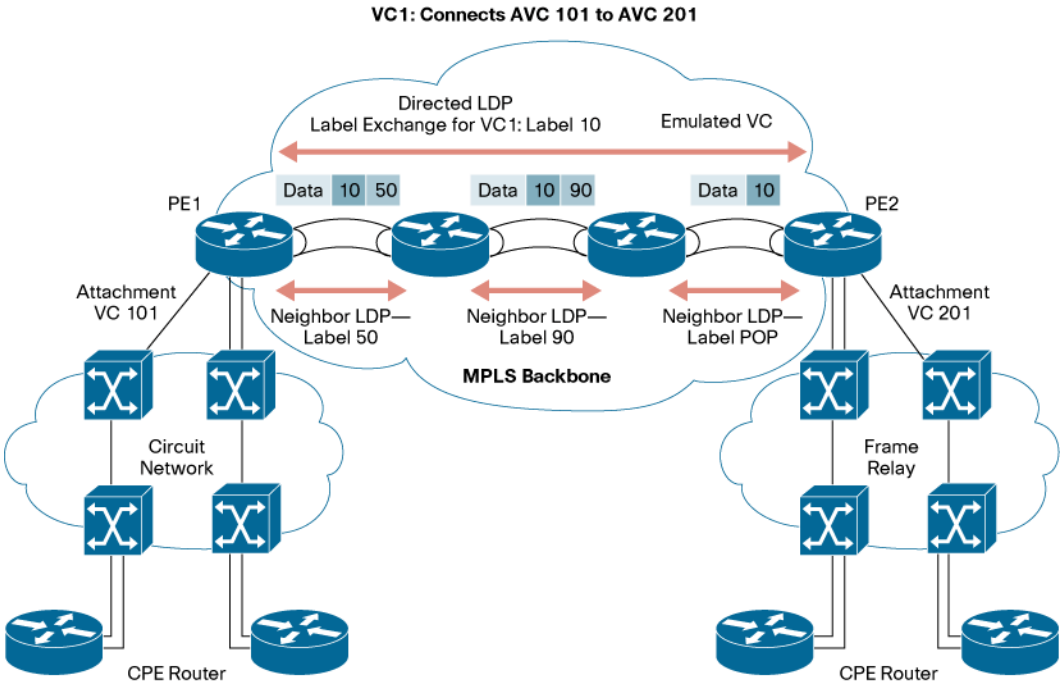
Cisco AToM: ATM Cell Relay over MPLS

With Cisco AToM ATM Cell Relay over MPLS, ATM cells can be transported across MPLS networks in a transparent manner. This allows transportation of ATM signaling and OAM cells across an MPLS network making the packet network invisible to the ATM network. This is a tremendous advantage to service providers as they can continue to use the same tools for provisioning and aggregating existing ATM installations to a high speed packet core based on MPLS.

Cisco AToM: PPP over MPLS

With Cisco AToM, PPP over MPLS, customers' PPP frames are encapsulated across an MPLS core. Using PPP over MPLS on POS links, service providers can create a "multiplexed" subinterface that can then be used to individually peer with other providers via a single POS connection. PPP over MPLS supports transparent pass through in which PPP sessions are between CE routers.

Figure 1. Any Transport over MPLS



Cisco AToM: Cisco HDLC over MPLS

With Cisco AToM HDLC over MPLS, an HDLC connection is emulated from a customer router to another customer router across an MPLS backbone. Similarly to PPP, this technology also allows transportation of Cisco HDLC frames across the packet networks. HDLC over MPLS also works in transparent mode.

Cisco AToM: Circuit Emulation over MPLS

With Cisco AToM Circuit Emulation over MPLS, Time Division Multiplexing (TDM) bit-stream connections (T1, E1, T3, E3) are encapsulated as pseudowires over the MPLS backbone. Both structured and structure-agnostic TDM bit-streams are supported.

Industry Standard Support

AToM supports the following IETF Encapsulation Standards and Internet-Drafts:

Service	RFC	Issued	Reference
Ethernet	RFC 4448	Apr 2006	Encapsulation of Ethernet over MPLS
TDM	RFC 4553	Jun 2006	Structure-Agnostic TDM over Packet (SAToP)
PPP/HDLC	RFC 4618	Sep 2006	Encapsulation for PPP/HDLC over MPLS
Frame Relay	RFC 4619	Sep 2006	Encapsulation for Frame Relay over MPLS
ATM	RFC 4717	Dec 2006	Encapsulation for ATM over MPLS

Internet-Drafts

- TDM: draft-ietf-pwe3-cesopsn, Structure-aware TDM Circuit Emulation Service over Packet Switched Network (CESoPSN)
- TDM: draft-ietf-pwe3-tdm-control-protocol-extensi, Control Protocol Extensions for Setup of TDM Pseudowires

Cisco IOS Release and Platform Support Information

For the latest platform support information refer to Cisco Feature Navigator at http://www.cisco.com/go/fn.

For More Information

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