

Elastic MPLS

Benefits for Mission-Critical Businesses



Making MPLS Work for Mission-Critical Applications

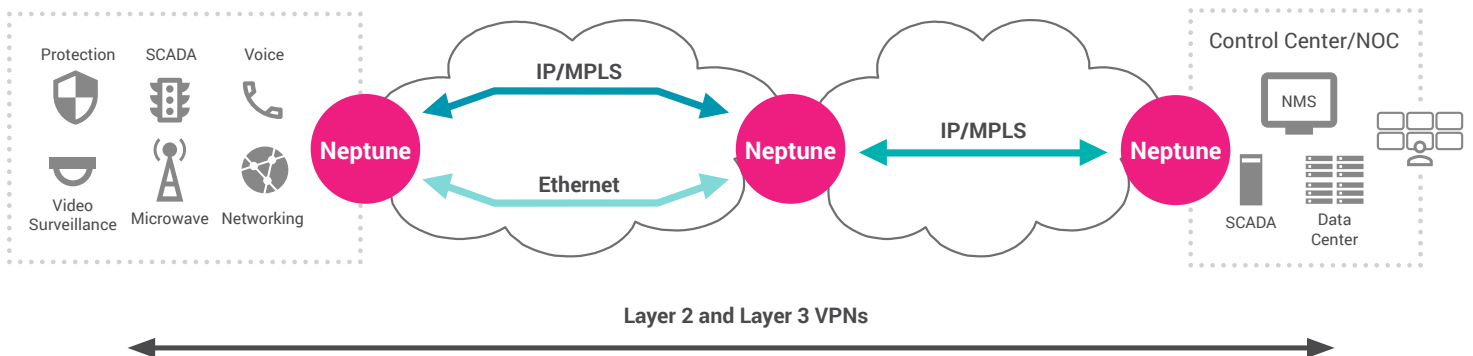
Utilities and infrastructure providers are under ever-increasing pressure from regulators, customers, and governments to improve the performance of their networks. They are expected to improve the safety and security of their networks, make use of the opportunities offered by IoT, provide improved customer satisfaction, and provide increased network efficiency to reduce carbon footprint. This is best achieved by migrating to a secure, always-up packet network, able to deliver the best of both worlds. Core and IT services require a fully-flexible packet network for efficient communications, which is best supported by IP/MPLS technology. However, mission-critical operations technologies (OT), like SCADA and teleprotection, require deterministic behavior from the telecoms network to operate correctly, and are best supported by MPLS-TP. Ribbon developed Elastic MPLS to allow operators to support both of these technologies, providing MPLS-TP and IP/MPLS on the same network element, with gateway functionality between them.

Converged Network
supporting both IT
and OT services

Risk-Free Transition
tailor made evolution
for legacy services

Optimized Multiservice
optimizes cost and
performance

Centralized Control
for integrated, intuitive
control of the network



Elastic MPLS - the Best of Both Worlds

Your Challenges	Our Solutions
Supporting IT and OT services from a converged packet network	Elastic MPLS makes a converged packet network for IT and OT services a reality. A dual stack implementation allows IP/MPLS and MPLS-TP to operate in the same network, and an MPLS gateway provides a simple transition between them.
Risk-free transition to packet	Elastic MPLS allows risk-free transition to packet. For example: <ul style="list-style-type: none">• IT services, like corporate voice and data, can be mapped directly to IP/MPLS.• Mission-critical OT services, like teleprotection and SCADA, can be mapped to packet, using Circuit Emulation Services (CES). MPLS-TP is used to provide the determinism and OAM, which is essential for these services to operate.
Optimized support for all service types	Elastic MPLS provides an optimized multiservice platform, allowing the network engineer to choose the optimal technology to maximize performance while minimizing costs for each service and network region: <ul style="list-style-type: none">• MPLS-TP is strictly connection-orientated and hence provides the predictability essential for error-free operation of OT services like teleprotection and SCADA.• IP/MPLS provides optimized, dynamic support for IT services. It is the ubiquitous standard for transporting Layer 3 services and supports all MEF-certified services. Its multicast capabilities make it widely used for video delivery and IP CCTV connectivity.• The IP/MPLS capabilities provided by elastic MPLS also allow easy introduction of commercial services for those companies wishing to evolve to become UTElcos
Controlling the network	A single management platform provides integrated, intuitive, and centralized control of the entire network. This integrated platform allows services to be easily set up and monitored across both IP/MPLS and MPLS-TP network segments with intuitive support for the different OAM, QoS, and protection mechanisms used by IP/MPLS and MPLS-TP. <ul style="list-style-type: none">• IP/MPLS guarantees QoS per application, regardless of the traffic being transported, and rate control and load balancing allow traffic to be prioritized and/or steered away from congested links.• IP/MPLS uses fast reroute (FRR) mechanisms, allowing traffic to be rerouted in the event of single and multiple failures.• MPLS-TP embeds OAM functionality in the data plane, allowing OAM similar to that provided by SDH/SONET. This allows MPLS-TP to enforce the same strict SLAs as those used in SDH/SONET.• MPLS-TP uses predetermined alternative paths for protection, giving sub-50ms protection switching for all network topologies. For services like SCADA and tele-protection to continue to operate correctly, these predetermined paths must meet the same strict requirements for low latency, jitter, and delay as the primary paths.

About Ribbon

Ribbon Communications (Nasdaq: RBBN) delivers communications software, IP and optical networking solutions to service providers, enterprises and critical infrastructure sectors globally. We engage deeply with our customers, helping them modernize their networks for improved competitive positioning and business outcomes in today's smart, always-on and data-hungry world. Our innovative, end-to-end solutions portfolio delivers unparalleled scale, performance, and agility, including core to edge software-centric solutions, cloud-native offers, leading-edge security and analytics tools, along with IP and optical networking solutions for 5G. We maintain a keen focus on our commitments to Environmental, Social and Governance (ESG) matters, offering an annual Sustainability Report to our stakeholders. To learn more about Ribbon visit rbbn.com.

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