EMC SMARTS MPLS MANAGER
Providing service assurance on next-generation networks through business-focused management of MPLS VPNs

As service providers and enterprises continue to combine next-generation, packet-based services on a converged network, Multi-Protocol Label Switching (MPLS) has become an integral part of the core network infrastructure. Business VPNs, IPTV, internal services for financial institutions and government entities, and media content are examples of services offered over MPLS infrastructures.

However, managing this kind of advanced networking environment does not come without challenges, which may include:

- The need to see and relate the MPLS infrastructure to the rest of the physical network environment
- Problems (in such a dynamic control plane) that could be due to protocol errors, issues in the transport network, traffic engineering, or a combination thereof can be difficult to diagnose

Managing the availability of critical MPLS-services requires a detailed end-to-end understanding of the infrastructure and its relationship to the services being delivered. Without it, service assurance can’t be provided, and customer satisfaction and service-level agreements are at risk.

EMC Smarts® MPLS Manager provides the industry’s leading MPLS management solution, offering mission-critical fault management of virtual private networks (VPNs) and the underlying Label Switched Paths (LSPs).

MPLS Manager maximizes the availability of IP VPNs based on MPLS and VPLS technology. Leveraging EMC patented Codebook Correlation Technology™ and Common Information Model™, MPLS Manager provides automated discovery and monitoring, root-cause and impact analysis, and network visualization. MPLS Manager also supports MPLS traffic engineering discovery and analysis, and can operate in networks using equipment from multiple vendors.

AUTO-DISCOVERY
Auto-discovery leverages topology information from SNMP management information bases (MIBs) and other sources to automatically discover logical and physical objects and relationships in MPLS, VPLS, and related domains. This includes LSPs, Layer 2 and Layer 3 VPNs, VPN routing/forwarding elements, LSP segments (hops), and traffic-engineering relationships. Discovery results also can be used to verify and reconcile VPN provisioning.

ROOT-CAUSE AND IMPACT ANALYSIS
Root-cause and impact analysis automatically pinpoints the Authentic Problems™ that can affect services delivered by MPLS VPNs and calculates how underlying
MPLS Manager also supports:

- MPLS L3VPN (including Multi-VRF CE)
- MPLS Point-to-Point L2VPN (VPWS)
- MPLS Multipoint L2VPN (VPLS)
- Load-balanced LSP
- NG-MVPN (Next-Generation Multicast VPN)
- Hub-and-Spoke VPLS
- Multi-tunnel MPLS
- Overlapping IP addresses
- Inter-AS LSP
- LSP ping and VRF ping tools
- Reconciliation of discovered and provisioned databases using an optional Cisco ISC adapter that associates VPNs with customers
- LDP and RSVP Protocol Diagnostics
- Traffic Engineering (TE) Discovery
- Remote Ping/LSP Ping Functionality
- Cross-Domain Correlation of Layer 3 VPNs with BGP
- Discovery and monitoring of targeted LDP sessions
- Discovery of Layer 2 and Layer 3 VPN misconfigurations

TRAFFIC ENGINEERING

MPLS traffic engineering functionality analyzes MPLS network contingency paths (which are used to re-route traffic in the event of a failure or problem in the primary path). By supporting and enabling MPLS traffic engineering, MPLS Manager helps providers ensure SLAs are met by analyzing protection mechanisms, as well as indicating single points of failure and true outages.

NETWORK VISUALIZATION

This solution presents MPLS network topology in a variety of dynamically updated views that show the status of MPLS elements and their relationships within and across technology and service layers. A specialized portal capability enables managed service providers to share defined portions of the network with individual customers.

MPLS MANAGER BENEFITS

- Easy understanding of network configurations using advanced visualization
- Automated root-cause and impact analysis reduces time and cost to repair, and identifies service impacts for prioritization
- Improves customer satisfaction and SLA compliance by mapping infrastructure events to business impacts
- Automatic repository updating following network reconfiguration reduces costs
- Supports ongoing growth by scaling to the most complex environments

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