

Solution Brief

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**Juniper and EMC  
Smarts: Value-add  
for Next-generation  
Network Deployments**

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## Introduction

Juniper, the industry leader in enabling secure, assured communications over a single IP network and EMC Smarts, the leader in automated IT infrastructure management, are collaborating to deliver next-generation networking solutions to the service provider, enterprise, and government sectors. Together, Juniper and EMC Smarts best-in-class solutions offer organizations new ways to reduce operational costs and complexities, standardize and scale networking solutions across organizations, and improve the reliability and availability of IP, MPLS, protocols, and other critical networking technologies.

## MPLS Overview

MultiProtocol Label Switching is a standards-based technology for speeding up network traffic flow and making it easier to manage. MPLS is becoming widely used for replacing disparate legacy networks with a single, next-generation, converged network layer that provides high reliability and quality of service.

The revenue generation and operational cost savings offered by MPLS are accompanied by significant deployment and management challenges. On the deployment side, these networks require a comprehensive set of products, tools and technologies that support multiple applications, optimize performance, and reduce operational costs while supporting advanced applications and services that require high performance, quality of service, high availability, and robust security.

On the management side, carriers and enterprises implementing MPLS networks need a way to discover and understand all the gear and configurations that are deployed, and visualize them in a unified way. A complex environment also demands automated tools that reduce the time it takes to find and fix problems, and reduce the skill burden on operations staff. The management solution must be able to relate network problems to their impacts on the business, and to integrate into the normal mode of operations as determined by the customer environment.

## Juniper and EMC Smarts MPLS VPN Offers

The Juniper Networks next-generation routing architecture provides the solid, reliable, high-performance foundation for delivering today's real-time, critical networking applications. Juniper Networks offers a comprehensive enterprise routing portfolio consisting of the J-series services routers and the

M-series multiservice routers. The J-series routers are typically deployed at remote offices or branch locations while the M-series enterprise routers are the ideal solution for head office locations where high performance packet processing is required for Internet access gateways, WAN aggregation devices, data center routers or backbone routers. Juniper Networks also offers a complete portfolio of core routing platforms, the T-series family, that carries a wide breadth of services over a common IP/MPLS infrastructure.

EMC Smarts MPLS Manager allows service provider and enterprise organizations to visualize and manage converged networks and the business services that depend on them. Key features include:

- Discovery and management of Layer 2 and 3 devices and circuits, as well as connectivity support for Ethernet, ATM, and Frame Relay devices on the provider edge.
- Correlation of MPLS-related problems with IP connectivity problems.
- Visualization of the MPLS domain and associated elements, allowing operators to understand graphically which elements exist, how they are configured and connected, and how IP failures impact the VPNs and associated customers.
- VPN remote ping, which effectively gauges the health of VPNs. Leveraging on-demand or scheduled remote pings, the solution is able to determine if a customer edge router is affected from an MPLS network failure.

## Smarts-Juniper Integration

The latest release of EMC Smarts MPLS Manager supports Juniper ERX plus M and T Series devices and Virtual Routers on the ERX. EMC Smarts MPLS Manager for Juniper Networks auto-discovers intra- and inter-device topology information of Juniper-based networks, providing the intelligent analysis, automation, and adaptation required for sustaining service delivery. The matrix that follows summarizes the value these integrated offerings deliver to customers.

	<b>Juniper J, M, &amp; T Series</b>	<b>EMC Smarts MPLS Manager</b>
<b>Lower operational costs</b>	<ul style="list-style-type: none"> <li>• A single JUNOS image across all platforms and policy-based control via SDX-300</li> <li>• Reduced operation complexities that occur in networks eases remote support and management</li> <li>• A standard operating system across the routing product line greatly reduces the effort required for software patches and upgrades</li> </ul>	<ul style="list-style-type: none"> <li>• Reduces trouble tickets so expert resources are free to focus on revenue-generating tasks</li> <li>• Eliminates manual alarm analysis for improved productivity</li> <li>• Computers correlation logic automatically, eliminating high-cost rules-writing</li> <li>• Automated discovery of MPLS VPNs, eliminating need for manual upkeep.</li> </ul>
<b>Reliability and Availability</b>	<ul style="list-style-type: none"> <li>• Highly reliable and available for nonstop forwarding and routing</li> <li>• The JUNOS modular and fault-protected software delivers high levels of resiliency and stability</li> <li>• Next-generation CLI for accurate configuration, and a rescue button for fast system recovery</li> </ul>	<ul style="list-style-type: none"> <li>• Wide range of failure diagnosis and analysis across multi-vendor switched and routed networks</li> <li>• Root cause and impact analysis of LSPs, LSPHops, VRFs and VPNs with the underlying physical infrastructure</li> </ul>
<b>Scalability</b>	<ul style="list-style-type: none"> <li>• IP/MPLS services scale with proven stability in the world's largest networks</li> <li>• Three-dimensional scalability, delivering the optimum and most efficient scale</li> </ul>	<ul style="list-style-type: none"> <li>• Proven solution scales to manage the world's largest, most complex distributed environments.</li> </ul>
<b>Customer Satisfaction</b>	<ul style="list-style-type: none"> <li>• High levels of QoS control and throughput when needed for the most demanding periods of network congestion.</li> <li>• Ensures that the most important applications have first priority with networking resources</li> </ul>	<ul style="list-style-type: none"> <li>• Faster mean-time-to-repair improves service delivery and enhances customer satisfaction/ retention</li> <li>• Prioritization of troubleshooting based on problem impact</li> <li>• Automates root cause analysis for faster MTTR</li> <li>• Improves SLA compliance by reducing unplanned downtime for mission-critical services</li> </ul>
<b>End-to-end solution</b>	<ul style="list-style-type: none"> <li>• Unified router platform from core to edge</li> <li>• Single JUNOS image across all platforms and policy-based control via SDX</li> </ul>	<ul style="list-style-type: none"> <li>• Builds a model of the managed environment, including relationships between the MPLS-VPN domain, the underlying infrastructure that supports it and the customers and services that depend on it.</li> <li>• Analysis is based on multiple monitoring sources</li> <li>• Provides visibility across the managed environment</li> </ul>

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