RETHINK IP CORE MANAGEMENT

THE ALCATEL-LUCENT 5620 SAM: MANAGEMENT DESIGNED TO SIMPLIFY OPERATIONS OF EVOLVING CORE NETWORKS

- **Manage expanding Internet backbone and metro cores**
- **Detect impairments early to prevent service degradation**
- **Leverage flexibility to fit existing systems and workflows**
- **Maximize efficiency with unified management of IP core and edge**

The increase in devices, content and applications is impacting core networks. The growth of cloud services and datacenters is driving more traffic through the Internet backbone and massive metro cores are emerging.

A redefined core warrants a rethink of how these networks are managed. To date, command-line interfaces (CLI) have been sufficient to manage and troubleshoot networks. However, as the core evolves, it is essential that service providers have management tools that scale with expanding requirements, proactively assure networks to avoid service interruptions, and integrate visibility across IP core and service edge networks to speed cross-domain resolution.

Alcatel-Lucent has launched the world's most flexible core router – the 7950 Extensible Routing System (XRS) – and is expanding its approach to core network management with the Alcatel-Lucent 5620 Service Aware Manager (SAM). The 5620 SAM dramatically enhances network visibility and operational control so service providers can more efficiently manage growth in the core.

SOLUTION OVERVIEW

The 5620 SAM delivers powerful capabilities that simplify operations of all-IP networks, especially critical as the core expands and requirements change. Advanced monitoring and proactive assurance capabilities across elements, networks, and services rapidly detect and isolate impairments before they impact customers.

Integrated views across multi-domain and multi-technology layers spanning physical, routing, MPLS and service topologies provide valuable insight into the dependencies between these layers. This can simplify and accelerate trouble-shooting as well as inform deployment decisions.

The 5620 SAM manages IP core and service edge networks from a single platform, with the option for integrated or divided responsibilities by distinct groups and systems. Service providers can more easily isolate and resolve cross-domain performance impairments and unify configuration and provisioning processes, decreasing the number of manual touch-points.

The 5620 SAM also provides discovery for third-party equipment, including support for multi-vendor topology display, alarm surveillance, interface statistics collection, configuration and script management.

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AT THE SPEED OF IDEAS™

In addition, operators can assure the multi-vendor IP/MPLS control plane against IGP routing and path issues by extending the 5620 SAM with the 5650 CPAM.
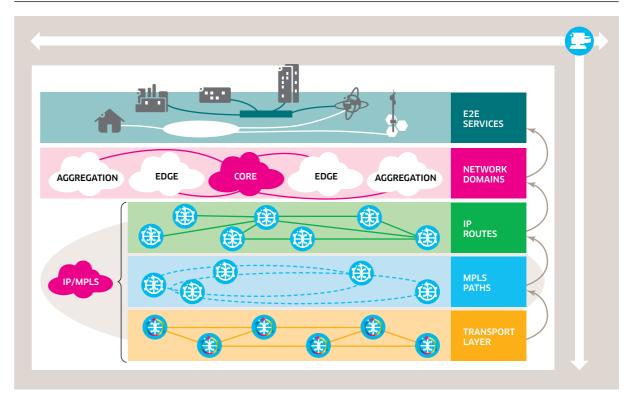
5620 Service Aware Manager (SAM)

The 5620 SAM manages the full Alcatel-Lucent IP/ MPLS equipment portfolio, including the 7950 Extensible Routing System (XRS) and Service Router (SR) portfolio. It provides a modular, extensible and scalable architecture that enables IP/MPLS element, network and service-aware management all from a single platform. Understanding the dependencies between layers is the foundation of service-aware management and this capability enables the 5620 SAM to simplify and accelerate deployment and trouble-shooting, as well as provide a truly integrated view for IP/optics, IP/MPLS and end-to-end services. This is a key differentiator for the 5620 SAM.

5650 Control Plane Assurance Manager (CPAM)

The 5650 CPAM is a multi-vendor route and path analytics solution that is tightly integrated within the 5620 SAM to deliver unprecedented real-time visualization, surveillance and troubleshooting for dynamic IP/MPLS networks, including for both IPv4 and IPv6 routing for IS-IS, OSPF, BGP and VPNs.

The 5650 CPAM also gives operators the ability to analyze the impact of routing topology changes on the IP and MPLS paths in an off-line simulation before the actual changes are made to the live network. This includes the ability to simulate the creation of new RSVP LSPs to determine if a routing topology can accommodate new services.

Figure 1. End-to-end service aware management for IP/MPLS

Pre-certified interoperability with market-leading capacity management and traffic engineering OSS applications reduce OSS integration effort and cost.

Unify management of 7950 XRS IP core and 7750 SR IP edge networks

With the 5620 SAM, operators can manage both the IP core and service edge from a single platform. It offers the flexibility to provision and maintain these domains together or separately while operating in a manner consistent with the service provider's operational infrastructure. User profiles may be enabled to protect network

access based on an operator's responsibilities, enabling secure collaboration between IP edge and core network engineers.

Cross-domain visibility and monitoring across the all-IP network will deliver proactive assurance and more comprehensive fault and performance analysis tools.

With the 5650 CPAM, operators gain end-to-end visibility of their IP network from edge to core. For example, the 5650 CPAM provides passive monitoring for the immense number of BGP

messages that typically flow between IP core and edge networks, enabling troubleshooting for emerging cross-ASN routing issues that often go undetected until services are affected.

The comprehensive 5620 SAM north-bound interface enables rapid and cost-effective integration with leading industry OSS/BSS applications that address multi-vendor service activation, fault management, performance reporting, SLA management, billing, traffic engineering and network capacity planning in the all-IP network from edge to core.

THE ALCATEL-LUCENT ADVANTAGE

The Alcatel-Lucent 5620 SAM provides a powerful end-to-end view of service provider IP/MPLS networks across the IP core, service edge and optical transport domains. Advanced capabilities optimize network operations, provisioning and troubleshooting at the network, service and control plane levels.

The 5620 SAM has the advantage of almost a decade of experience managing IP/MPLS networks deployed at more than 400 service providers around the world.

Independently shown to deliver quick and lasting return on investment, the 5620 SAM is a proven solution that sets the standard for service-aware management.

With the 5620 SAM service providers can address core network challenges today and leverage its innovation and efficiency to also support evolving requirements well into the future.

SOLUTION BENEFITS

SERVICE PROVIDER CHALLENGES	HOW THE 5620 SAM ADDRESSES THE CHALLENGE
• Rigid domain-specific tools not designed for end-to-end network operations and do not enable collaboration between teams	• Integrated management end-to-end, across multiple IP domains , with the option for integrated or divided responsibilities by distinct groups and systems • User security profiles allow the flexibility to limit span of control based on network domain, network equipment, services or operational responsibilities
• Reactive detection of network impairments and cumbersome troubleshooting tools delay problem resolution	• Powerful fault correlation and extensive troubleshooting capabilities easily pin-point root cause to enable quick problem resolution – lowering MTTR • Proactive assurance identifies problems before they affect customers
• Performance and SLA monitoring setup can be slow, time-consuming and difficult to maintain	• Automated setup for Y.1731 and 802.1ag test validation and CFM enable fast and simple maintenance of proactive performance and SLA monitoring across network
• Lack of visibility into dynamic network control plane makes complex routing issues difficult to isolate	• Integrated multi-vendor route analytics through the 5650 CPAM enables operators to visualize, monitor and troubleshoot the dynamic IP/MPLS control plane in real-time, including for both IPv4 and IPv6 routing for IS-IS, OSPF, BGP and VPNs
• Manual configuration and provisioning introduces risk of human error and can be slow, resource intensive process	• Fast provisioning through easy-to-use GUIs, rules-based automation and multi-vendor script management reduce manual effort and minimize errors
• Introduction of network management tools can be expensive and slow if processes and workflows need to be changed and new interfaces between systems need to be introduced	• Easy-to-use service templates and light-weight GUI builders deliver workflow customization, enabling usage by staff with less training • Comprehensive north-bound interface further enhances fit into even the most customized operational workflows and processes • OSS partner application interoperability pre-certified through Alcatel-Lucent OSS Connected Partner Program speeds introduction by enabling rapid and cost-effective OSS/BSS integration

LEARN MORE

Visit the Alcatel-Lucent website for more information:
www.alcatel-lucent.com/products/ ip-core-management/

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