



Core Transport Optimization for Mobile Networks

Improves Inter-Data Center Capacity Utilization

Mobile Core Network Challenges

Subscriber growth and increased data consumption are straining core infrastructure more than ever before. Broadband wireless technologies such as HSPA and EVDO, combined with powerful new handsets, now enable mobile subscribers to surf the web and consume multimedia content (e.g., streaming video) while on the move.

As traffic levels grow, adding new regional data centers and interconnects closer to the network edge relieves congestion but also requires core upgrades – when CapEx constraints compel operators to maximize existing capacity and minimize new investment. And despite the universal focus on IP/Ethernet, legacy traffic (e.g., TDM, ATM) will still exist for the foreseeable future. Faced with all these challenges, mobile operators want core transport network solutions that are not only scalable and cost-effective, but also vastly more flexible – incorporating support for both existing and emerging services.

Simplify Core Network Evolution

Intelligent optical switches from Sycamore Networks transform mobile core networks by simplifying network architectures (both Planning and Operations), optimizing inter-data center capacity, and empowering multiservice aggregation and hierarchical protection options. A flexible infrastructure that is easy to scale and reconfigure enables mobile operators to optimize the network as traffic levels increase, adjust quickly to service mix changes, and gracefully evolve their core transport networks.

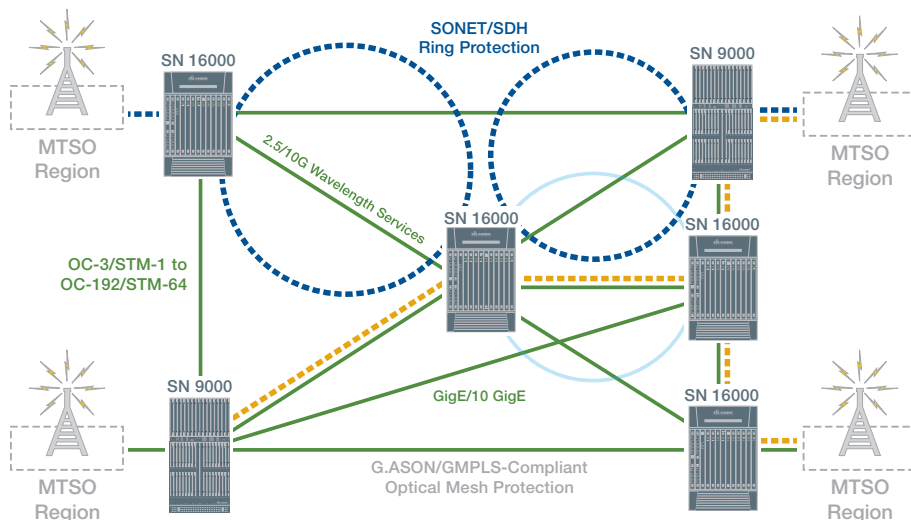


Figure 1: Sycamore Mobile Core Network

Features and Benefits

- Streamlines Architecture and Reduces Costs
- Simplifies Delivery of IP/Ethernet Services
- Conserves Router Ports and DWDM Capacity
- Supports Multiple Protection Options and Mesh Restoration

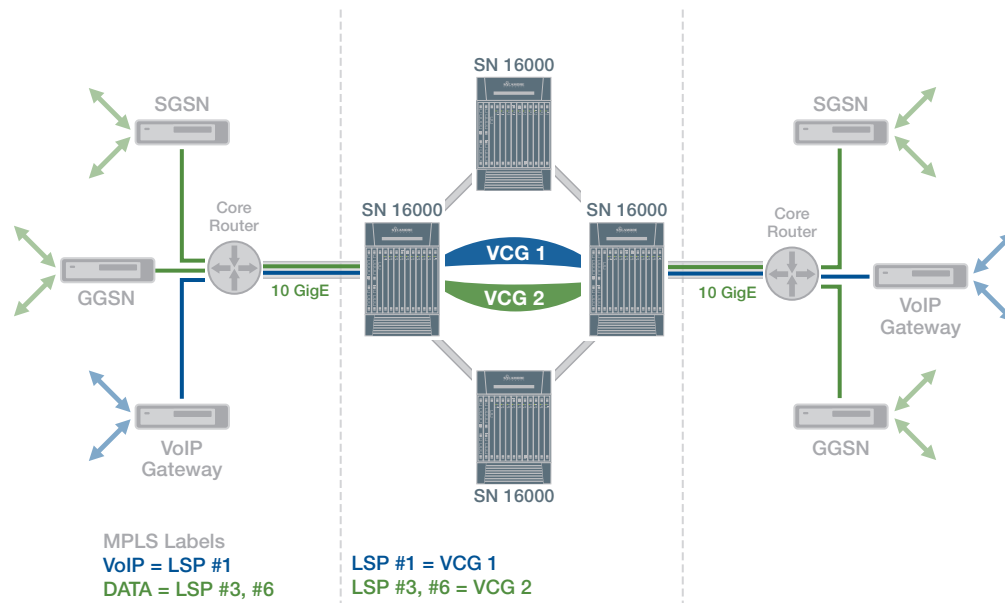


Figure 2: Ethernet Packet Intelligence with Flow-Based Mapping

Sycamore switches scale seamlessly – and cost-effectively – to support hundreds of service interfaces, including low-speed electrical interfaces, OC-3/STM-1 to OC-192/STM-64, and multirate Ethernet, from 10/100/1000 Mbps to 10 Gigabit Ethernet (Figure 1). They also support a full range of SONET/SDH ring and optical mesh protection schemes, including the unique ability to interoperate 2- and 4-fiber BLSR/MS-SPRing and ASON/GMPLS-compliant mesh restoration within the same network. Moreover, protection schemes can be implemented in a hierarchical fashion, to allow multiple layers of protection.

Integrated BB-DCS and ADM functionality and optical layer intelligence combine to produce considerable CapEx and OpEx savings by enabling operators to groom traffic and consolidate backbone and metro rings with one network element. And, in a mesh topology, operators can add capacity on a link-by-link basis rather than upgrading an entire ring.

Efficient Ethernet Aggregation

Sycamore solutions enable Ethernet service delivery over existing networks, supporting a broad mix of SONET/SDH and Ethernet interfaces. Sycamore's advanced Ethernet Packet Intelligence tightly integrates the optical and packet layers, bringing the benefits of intelligent optical networking (e.g., robust OAM, rapid provisioning, and resilient mesh restoration) to Ethernet transport. Ethernet Packet Intelligence enables Sycamore switches to map Ethernet traffic to the appropriate Virtual Concatenation Group (VCG) based on Layer 2 IP identifiers (e.g., MPLS label, VLAN tag, MAC address, IP Address).

Combined with support for ITU-T VCAT, GFP, and LCAS standards, Sycamore's enhanced provisioning, flow control, and protection mechanisms simplify the management and customization of Ethernet services. In practical application, as shown in Figure 2, this means that inter-MSC VoIP traffic can use the same multiservice infrastructure as data traffic between SGSNs and GGSNs; the intelligence in the optical network ensures efficient utilization and quality of service for Ethernet connections across the underlying transmission systems.

Optimizing Inter-MTSO Data Capacity

A Sycamore intelligent optical core eliminates the need to over-allocate IP/MPLS trunks, which effectively optimizes expensive router ports and DWDM capacity, and minimizes requirements for complex Layer 3 protection schemes. Packet-to-circuit mapping on the optical switch replaces expensive PoS interfaces and enables mobile operators to efficiently provision, fill, and optimize MPLS trunks. The unique ability of Sycamore switches to precisely police and map an Ethernet service to right-sized optical transport, with customized protection options, ensures optimal use of network capacity, alleviates chokepoints, and improves service resiliency.

For mobile operators, deploying an intelligent optical architecture is the best assurance that the core network will be able to adjust – quickly, non-disruptively, and cost-effectively – as market requirements and network needs continue to evolve.

For more information about our intelligent networking products and solutions, please contact your Sycamore Sales Representative.

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Sycamore Networks, Inc. (NASDAQ: SCMR) is a leading provider of intelligent bandwidth management solutions for fixed line and mobile network operators worldwide. From multiservice access networks to the optical core, Sycamore products enable network operators to lower overall network costs, increase operational efficiencies, and rapidly deploy new revenue-generating services.

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