Apollo 9932

Ultra-High Capacity OTN/Packet Switching

Apollo 9932 switching and grooming provides future-proof capability to address changing mixes of Layer 1 transparent transport and Layer 2 packet switching traffic, while ensuring a maximum fill of premium 100G, 200G, and 400G network interfaces. It also delivers the highest level of network availability through service-specific ASON restoration, using either centralized SDN or peer GMPLS signaling.

With an enormous 16T switching capacity compressed into a single energy-efficient rack, Apollo 9932 excels at large-scale applications. Apollo 9932 interworks seamlessly with the other members of the Apollo family to construct basic to complex optical networks, for the broadest range of clients at the lowest cost per bit.
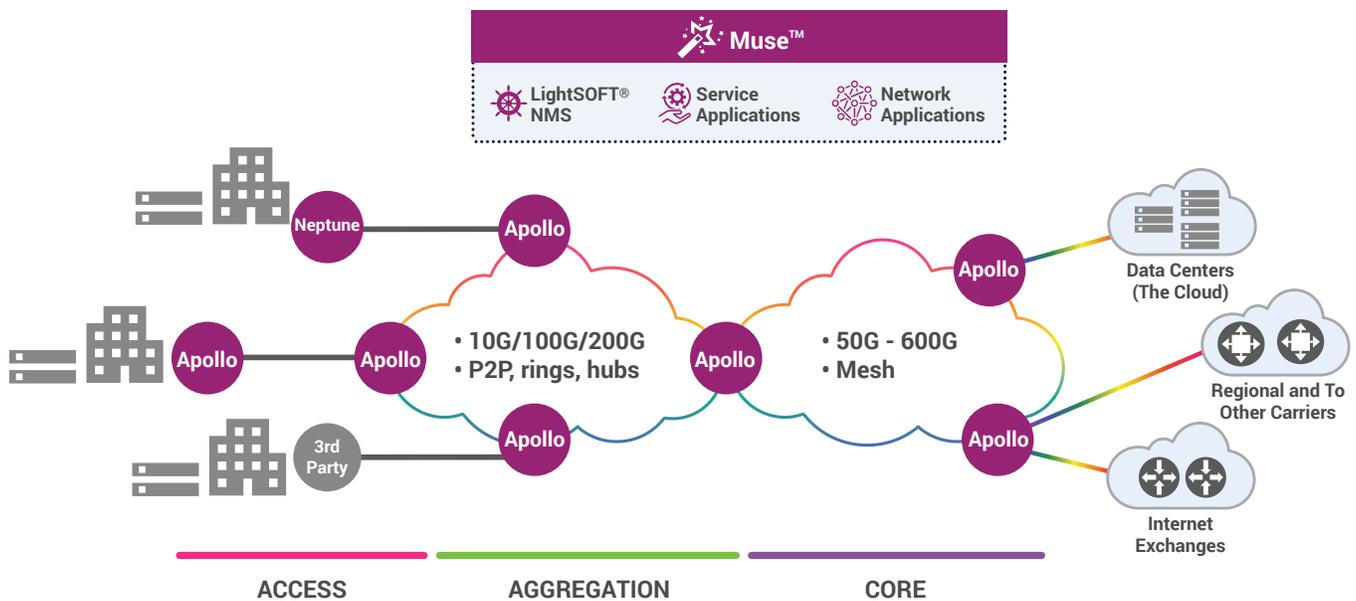
| **Grooming and restoration** of OTN services | **Integrated** packet services | **Self-aware** for E2E visibility and operability | **Open** for modular disaggregated solutions |

Technical Specifications

Topologies	Mesh, hub, ring
Spectrum	• Extended C-band • Fixed grid: 50GHz/96ch and 100GHz/48ch • Flexible spectrum at 12.5GHz resolution • Super-channel at 6.25Ghz resolution up to 128 channels
Capacity	• **Shelf**: 32 slots for blades interchangeable across Apollo 99XX platforms • **Card**: 500G/400G single slot density, 1T ready • **Switching**: 16T, ready for 32T, universal fabric for OTN switching • (ODUk cross-connect 0, 1, 2, 2e, 3, 4, Flex) and packet switching (L2 and MPLS-TP)
Hybrid service cards: mix of Layer 1 and Layer 2 services	**HIO500:** 500G capacity • 5 x D-CFP2 supporting 200G/OTUC2 configurable for 16QAM/8QAM/(QPSK future), 100G/OTU4, 100GbE; and L2 ODUflex up to OTU4 **HIO100_2:** 200G capacity • 2 x CFP supporting 100G/OTU4, 100GbE; and L2 ODUflex up to OTU4 **HIO10_40:** 400G capacity • 10 x QSFP+ supporting 100G/OTU4, 100GbE, 40GbE, with MPO fan-out for 10G OTU2e, 10GbE, STM-64/OC-192, and L2 ODUflex up to OTU4 **HIO10_20:** 200G capacity • 20 x SFP+ supporting 10GbE, OTU2/2e, STM-64/OC-192, FC8, FC10, FC1200; and L210GbE/OTU2e • 2 x QSFP+ supporting 40GbE **TIOMR_32:** 80G capacity • 32 x SFP supporting GbE, STM-1/OC-3, STM-4/OC-12, STM-16/OC-48, FC1/2/44
Restoration	• Spectrum Switched Optical Network (SSON) − spectrum level • Wavelength Switched Optical Network (WSON) − wavelength level • Automatic Switched Optical Network (ASON) − service level • ODU SNC-N protection, LAG
HW redundancy	• 8+1/7+2 (500G/400G, respectively) switching fabric redundancy • Power supply and fan module redundancy • High availability RCP main shelf controller
Dimensions	• ETSI 600 x 300 mm, 2000 mm height • Front access to all cards
Power input	-40.5 VDC to -75 VDC
Environmental	• Operating temperature: -5^0C to $+45^0$C • Relative humidity: 5% to 90% (non-condensing)
SDN	Muse™ applications (e.g. Bandwidth on Demand, Scheduled Service)
Network management	LightSOFT® end-to-end, point-and-click network management
Performance monitoring	LightPULSE™ integrated real-time OSNR and other parameters
Control interfaces	Netconf/Yang complying with OpenROADM MSA

Specifications subject to change without notice

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. To learn more about Ribbon visit rbbn.com.

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