

Apollo 9603

Powerful and Versatile Access-to-Metro Optical Transport Platform

Apollo 9603 is a powerful and versatile 2RU transport platform ideal for Enterprise, access, and metro edge sites, low degree ROADM nodes, and inline amplification. It accommodates the entire range of Apollo transponder, muxponder, ROADM, and amplification blades. Each of its three slots supports dual 400G density-power-cost-optimized blades, for a total client plus line



platform capacity of 4.8T. It also supports double-slot blades that delivers two performance-optimized 800G lines, for the most demanding transport applications.

Apollo optical transport and switching platforms combine to deliver high-performance access-to-core optical networking solutions at the lowest cost per bit. Highly modular, they are tailorable into solutions that precisely meet current needs, and can evolve economically to accommodate traffic growth and new technologies. All Apollo platforms support multiservice client interfaces including 400GbE, as well as alien wavelengths, shared spectrum, and packet services. They are controllable through Muse Domain Orchestrator, or directly, via open industry-standard interfaces, and can stand by themselves in disaggregated networks such as for Open Optical Line Systems.

Programmable for SDN

applications

Open

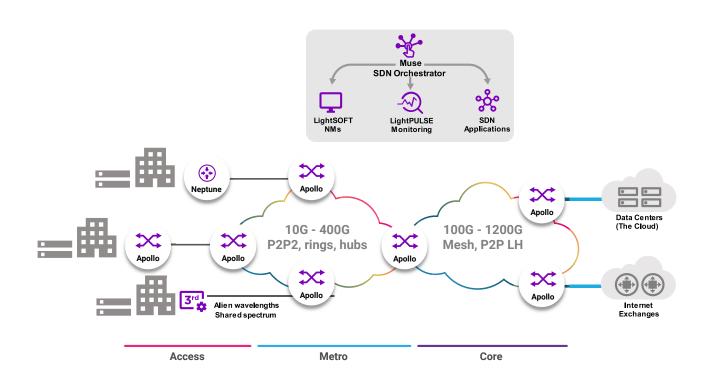
for modular disaggregated solutions

Self-aware

for E2E visibility and operability

Efficient

low power and high density





Technical Specifications

Extended C-band Flexible grid at 6.25GHz resolution Super-Channel up to 128 channels 3 alots for blades, interchangeable across Apollo family of transport platforms Max platform capacity 4.8T (2.4T client capacity) lus 2.4T line capacity) Ethernet (16bE, 106bE, 4060bE, 4006bE, 4006bE, 50HxSONET (STM-1.4, 16, 84/0C-3, 12, 48, 192) SAN (FC-1, 2, 4, 8, 10, 16, 32, 64) Video (DVB-AS), SDI 270, HD-SDI 1.5G/3G) OTU 1, 2, 2e, 3.4; FlexO MEF Carrier Ethernet 2.0 virtual LAN services: E-Line, E-LAN, E-Tree, and E-Access Statistical multiplexing transport aggregation Security and Encryption AES256-GCM encryption; Diffle-Hellman key exchange with X.509 node authentication, enhanceable with external QKD keys and with PQC algorithms; FIPS 140-3, level 3; CC EAL2 OTU (2.6 Gbps) OTUC2 (200 Gbps) OTUC2 (200 Gbps) OTUC2 (200 Gbps) OTUC4 (100 Gbps) OTUC6 (600 Gbps) OTUC6	Topologies	Mesh, hub, ring, linear, point-to-point
Super-channel up to 128 channels 3 slots for blades, interchangeable across Apollo family of transport platforms Max platform capacity A8T (2.4T client capacity plus 2.4T line capacity) Ethernet (1GbE, 10GbE, 40GbE, 10GbE, 40GbE) SDH/SONET (STM-1, 4, 16, 64/GC-3, 12, 48, 192) Service (client) interfaces SAN (Fc-1, 2, 4, 8, 10, 16, 32, 64) Video (DVB-ASI, SDI 270, HD-SDI 1.5G/3G) OTU 1, 2, 2e, 3, 4; FlexO MEF Carrier Ethernet 2.0 virtual LAN services: E-Line, E-LAN, E-Tree, and E-Access Statistical multiplexing transport aggregation AES256-GCM encryption; Diffie-Hellman key exchange with X.509 node authentication, enhanceable with external QKD keys and with PQC algorithms; FIPS 140-3, level 3; CC EAL2 OTU (2.5 Gbps) OTU2/2e (10 Gbps) OTU2/2e (10 Gbps) OTU3/2e (10 Gbps)		Extended C-band
Service (client) interfaces	Spectrum	
Ethernet (16bE, 10GbE, 40GbE, 100GbE, 40GbE) SPH/SONET (STM-I, 4, 16, 64/0C-3, 12, 48, 192) Service (client) interfaces Service (client) interfaces SAN (FC-1, 2, 4, 8, 10, 16, 32, 64) Video (DVB-ASI, SDI 270, HD-SDI 1.5G/3G) OTU 1, 2, 2e, 3, 4; FlexO MEF Carrier Ethernet 2.0 virtual LAN services: F-Line, F-LAN, F-Tree, and F-Access Statistical multiplexing transport aggregation Security and Encryption AES256-GCM encryption; Diffie-Hellman key exchange with X.509 node authentication, enhanceable with external QKD keys and with PQC algorithms; FIPS 140-3, level 3; CC EAL2 OTU (2.5 Gbps) OTUC2 (200 Gbps) OTUC2 (200 Gbps) OTUC4 (400 Gbps) OTUC4 (400 Gbps) OTUC4 (400 Gbps) OTUC4 (600 Gbps) OTUC4 (100 Gbps) OTUC6 (600 Gbps) OTUC6 (600 Gbps) OTUC6 (600 Gbps) OTUC7 (100 to 800Gbps, in 50Gbps increments) 2, 4, 9, and 20-degree ROADMs (flexible and fixed grid) with OCM and automatic power equalization and Colorless, pirectionless, and Contentionless (CDC) wavelength routing Fixed OADM 100% add/drop capacity EDFA, Raman, Hybrid EDFA/Raman, with embedded optical leveling and control Output power: 16 dBm to 26 dBm Gain: up to 40 dB with/without 10 dB midstage Protection OCH 1+1, OLP, OMSP, Y Protection, DRI/DNI Restoration Restoration All common units/cards: power supply, controllers, fan units Dimensions 19* width, 88 mm height, 240 mm depth, 3 service slots Power input 40.5 VDC to -75 VDC, AC mains Operating temperature: -5C to +55C (short term) 5C to +45C (long term) Relative humidity: 5% to 90% (non-condensing) SDN Muse Optical Domain Controller and Applications Network management LightPULSE* integrated real-time OSNR and other parameters, and integrated OTDR Netcontrol interfaces Netcontrol interfaces Netcontrol interfaces		·
SDH/SONET (STM-1, 4, 16, 64/OC-3, 12, 48, 192) SAN (FC-1, 2, 4, 8, 10, 16, 32, 64) Video (DVB-ASI, SDI 270, HD-SDI 1.5G/3G) OTU 1, 2, 2e, 3, 4; FlexO MEF Carrier Ethernet 2.0 virtual LAN services: F-Line, F-LAN, E-Tree, and E-Access Statistical multiplexing transport aggregation AES256-GCM encryption; Diffie-Hellman key exchange with X.509 node authentication, enhanceable with external QKD keys and with PQC algorithms; FIPS 140-3, level 3; CC EAL2 OTU 1 (2.5 Gbps) OTUC2 (200 Gbps) OTUZ2 (10 Gbps) OTUC4 (400 Gbps) OTUZ4 (400 Gbps) OTUC4 (600 Gbps) OTUZ4 (400 Gbps) OTUC4 (600 Gbps) OTUZ4 (100 Gbps) OTUC4 (600 Gbps) OTUZ4 (100 Gbps) OTUZ4 (100 to 800Gbps, in 50Gbps increments) 2-, 4-, 9-, and 20-degree ROADMs (flexible and fixed grid) with OCM and automatic power equalization and Colorless, Directionless, and Contentionless (CDC) wavelength routing Fixed OADM 100% add/drop capacity EDFA, Raman, Hybrid EDFA/Raman, with embedded optical leveling and control Output power: 16 dBm to 26 dBm Gain: up to 40 dB with/without 10 dB midstage Protection Protection OCH 1+1, OLP, OMSP, Y Protection, DRI/DNI Spectrum Switched Optical Network (SSON) - spectrum level Wavelength Switched Optical Network (MSON) - service level 1+1, 1+1 forever, preplanned/dynamic protection HW redundancy All common units/cards: power supply, controllers, fan units Dimensions 19* width, 88 mm height, 240 mm depth, 3 service slots Power input 40.5 VDC to -75 VDC, AC mains Operating temperature: -5C to +55C (short term) 5C to +45C (long term) Relative humidity: 5% to 90% (non-condensing) SDN Muse Optical Domain Controller and Applications Network management LightSOFT® end-to-end, point-and-click network management LightSOFT® end-to-end, point-and-click network management LightSOFT® end-to-end, point-and-click network wand integrated OTDR	Capacity	
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Network (DWDM) interfaces OTU1 (2.5 Gbps) OTUC2 (200 Gbps) OTU2/2e (10 Gbps) OTUC4 (400 Gbps) OTU3e (40 Gbps) OTUC6 (600 Gbps) OTU3e (40 Gbps) OTUA (100 to 800Gbps, in 50Gbps increments) 2-, 4-, 9-, and 20-degree ROADMs (flexible and fixed grid) with OCM and automatic power equalization and Colorless, Directionless, and Contentionless (CDC) wavelength routing Fixed OADM 100% add/drop capacity EDFA, Raman, Hybrid EDFA/Raman, with embedded optical leveling and control Output power: 16 dBm to 26 dBm Gain: up to 40 dB with/without 10 dB midstage Protection OCH 1+1, OLP, OMSP, Y Protection, DRI/DNI Spectrum Switched Optical Network (SSON) - spectrum level Wavelength Switched Optical Network (WSON) - wavelength level Automatic Switched Optical Network (WSON) - service level 1+1, 1+1 forever, preplanned/dynamic protection HW redundancy All common units/cards: power supply, controllers, fan units Dimensions 19" width, 88 mm height, 240 mm depth, 3 service slots Power input -40.5 VDC to -75 VDC, AC mains Operating temperature: -5C to +55C (short term) 5C to +45C (long term) Relative humidity: 5% to 90% (non-condensing) SDN Muse Optical Domain Controller and Applications Network management Light/SUCSE* integrated real-time OSNR and other parameters, and integrated OTDR Control interfaces Netconf/Yang open interface	Security and Encryption	
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Performance monitoring LightPULSE™ integrated real-time OSNR and other parameters, and integrated OTDR Control interfaces Netconf/Yang open interface	SDN	Muse Optical Domain Controller and Applications
Control interfaces Netconf/Yang open interface	Network management	LightSOFT® end-to-end, point-and-click network management
<u> </u>	Performance monitoring	LightPULSE™ integrated real-time OSNR and other parameters, and integrated OTDR
Management Ports One IMG port, two multi-shelf ports	Control interfaces	Netconf/Yang open interface
	Management Ports	One IMG port, two multi-shelf ports

Specifications subject to change without notice

Contact Us We are here to help. Contact us about our IP Wave Solutions.

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