

Neptune NPT-1050

Converged Metro Access Transport

Neptune (NPT) is a family of carrier-class MPLS-based multiservice packet-optical transport platforms, offering best-in-class Carrier Ethernet and packet transport solutions for the metro. Neptune streamlines end-to-end metro service delivery by combining carrier-grade service assurance, visibility, and control, with packet efficiency and unparalleled L1 to L3 multiservice support. Neptune offers converged support for Ethernet, MPLS, OTN, and WDM to provide a powerful, flexible solution for high-performance services and Elastic MPLS. SDN and NFV capabilities allow Neptune to evolve to meet the rapidly-changing metro environment.



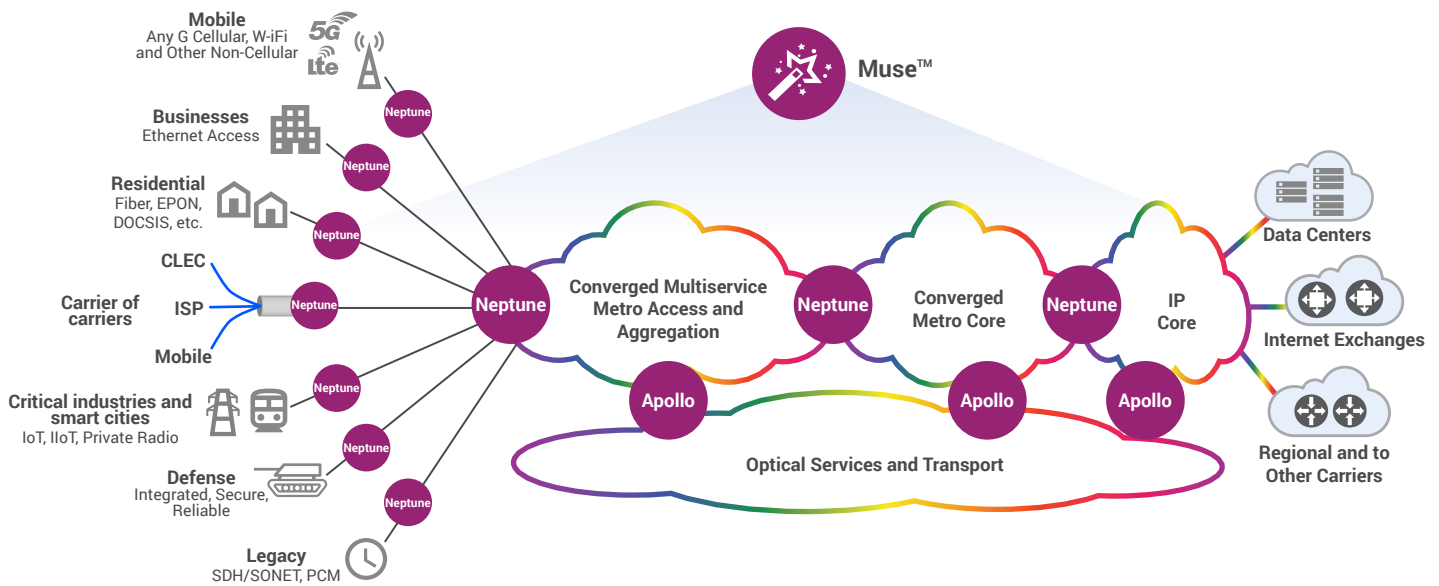
NPT-1050 is a compact, fully-redundant, modular, MPLS-based (IP and TP) multiservice packet transport platform. Equipped with 300Gbps packet switching and 100G interfaces and a port fan-out of 380G in just 1RU, NPT-1050 is optimized for high-capacity metro-access applications. Support for Ethernet, TDM (CES), and MPLS make NPT-1050 ideal for operators wanting a converged transport platform for new and legacy services. With such a rich and robust feature set, NPT-1050 is well-suited for a wide variety of applications and networking scenarios. These include; CES for TDM migration, mobile backhaul, wholesale services, residential multiplay, business VPNs, and mission-critical service delivery. Like all Ribbon's transport products, NPT-1050 is managed by Ribbon's Muse™ software suite.

**Elastic
Multiservice**

**Carrier-Grade
Service Assurance**

**Fully-Managed with
Simplified Operations**

**Elastic
Scalability**



Technical Specifications

Packet	Switch: 100 Gbps/300 Gbps Services: MEF CE2.0 (E-Line, E-LAN, E-Tree, E-Access) PN and VPN based Ethernet and IP, MPLS (TP and IP), multicast and IPTV Max. Interfaces (100 Gbps configuration): 20 x 10/100/1000 Base-T, 40 x 100/1000 Base-X, 10 x 10GE Max. Interfaces (300 Gbps configuration): 23 x 10/100/1000 Base-T, 38 x 100/1000 Base-X, 20 x 10G or 12 x 10G OTN, 3 x 100G
TDM	Services: CES (SATO, CESoPSN and CEP) Max. Interfaces: 96 x E1/T1, 12 x STM-1/OC-3, 3 x STM-4/OC-12
WDM	CWDM, DWDM, muxponder, amplifiers
Timing and Synchronization	SyncE with ESMC, 1588v2, External timing 1PPS and TOD, Internal Stratum 3 clock (holdover state), Primary and secondary sources (supports SSM bits), ACR, DCR, loop timing on SAToP, TDM bits (T3/T4), and SNTP
Protection and restoration	Hardware redundancy for common units, IO Hardware protection (IOP), RSTP/MSTP, G.8032 Ethernet Ring Protection (ERP), MPLS-TP FRR, Dual FRR, 1:1 Linear protection, FRR with LFA (local and remote), PW Redundancy (PWR), Virtual Router Redundancy Protocol (VRRP), Multisegment-PW, IEEE 802.3ad Ethernet Link, Link Aggregation (LAG) with LACP, Multi Chassis LAG (MC-LAG) Aggregation (LAG) with LACP, Multi Chassis LAG (MC-LAG)
OAM	Ethernet OAM (IEEE802.3ah, IEEE 802.1ag and ITU-T Y.1731 PM), IP/MPLS OAM (link BFD, Ping, Trace-route), MPLS-TP OAM (G8113.2, RFC5860, Bidirectional Forwarding Detection (BFD), LDI, LSP ping, LSP trace route), RFC 2544 Generator, Y.1564 -Ethernet service activation (SLA), RFC 5357 Two-Way Active Measurement Protocol (TWAMP)
Traffic management	Traffic classification (based on Port, VLAN, Port+VLAN, IEEE 802.1p, IPv4/IPv6 TOS and DSCP), Diffserv based TM, network Connection Admission Control (CAC), 8 Classes of Service (CoS)
Topologies	Mesh, dual homing, multiring, ring, star, linear
Security	RADIUS (client authentication), SSH 2 SW integrity checking (SHA-2), SFTP, Access Control List (ACL), IEEE802.1x, control channel HMAC-256, Public key authentication, port blocked by default, MACsec
Management	MUSE software suite (SDN orchestration and control), MUSE LightSOFT® NMS, EMS-NPT, SNMPv2/v3, LCT, CLI, NETCONF/YANG, PCEP, BGP-LS NETCONF/YANG
Power over Ethernet (PoE+)	Up to 30W
Pluggable SFP/CSFP/SFP+ support	Electrical, Colored C/DWDM, Tunable, non-colored, Compact SFP (CSFP), SFP+, bidirectional SFPs/SFP+ and QSFP28
Power input	-40 VDC to -72 VDC, 110 VAC to 230 VAC
Power dissipation	Typical: 150W
Operating temperature range	100G/300G configuration: -25°C to +70°C (-13°F to 158°F)
Operating RH range	5% to 95%
Environmental standards	ETS 300 019-1-3 Class 3.3, ETS 300 019-2-3 Class 3.3, IEEE 1613 (electric utility substations), IEC 61850-3 (electric utility substations), EN 61000-6-5 (Immunity for substations)
Safety	EN 60950/2000, according to LVD Directive 72/23/EEC, EN 60825-1&2
EMS	EN 300 386-2, FTZ 1TR9, EN55032 radiation
Physical dimensions	H x W x D: 1.7" x 18.3" x 10.4" / 44 x 465 x 263 mm

Expansion Unit

OTN	Services: Ethernet, storage, video, SDH/SONET Max. service interfaces: <ul style="list-style-type: none"> • 48 x 1GE, STM-1/4/OC-3/12/FC-1 • 24 x STM-16/OC-48/FC-2 • 12 x FC-4 • 3 x 10GbE/FC-8/FC-12/STM-64/OC-192 • 30/24/12 x SDI/HD-SDI/HD-SDI3G Max. transport interfaces: 24 x OTU-1, 3 x OTU-2/e
Packet	Max. service interfaces: 36 x 10/100base-T, 36 x 100 base-X
TDM	Max. service interfaces: CES: 96 x E1 72 x (n x 64kbps, FXO, FXS, 2/4W E&M, V24 (RS232), V35, V36, V11, RS422, RS449, C37.94, OMNI, CODIR, G.703 64k) over packet
Physical dimensions	H x W x D: 3.5" x 17.4" x 9.6" / 88 x 443 x 243 mm

Specifications subject to change without notice

Corning Services GmbH

Ahrensburger Straße 8
30659 Hanover
Germany

Tel: (+49)0511/740192-0
Fax: (+49)0511/740192-100
www.Corning-Services.de