

Joint Architecture: IPoDWDM in Practice

Collapse IP and optical into one open network

IP Infusion At a Glance

26 Years of Network Innovation

HQ: Silicon Valley
With Global Presence

R&D Centers
Bengaluru, Ottawa, Montreal, Israel

400+ Employees

2.4M
Ports Shipped

600+
Global Customers

10,000s
Service Provider Deployments

15
of Top 88 Global Telecoms

Technology Leadership
Telecom Infra Project, GigaOm, O-RAN Plugfest

Scaling Into Three Key Market Segments



Metro Transport and
Aggregation



Data Center
Interconnect



Data Center
Networking Fabric

IP Infusion OcNOS-powered IPoDWDM Routers and Switches

AGG + 400G ZR/ZR+ Ufispaces S9510-28DC  Qumran2A (800Gbps) 2x400G 2x100G 24x25G 1RU	AGG + 400G ZR/ZR+ Edgecore CSR440  Qumran2A (800Gbps) 2x400G 2x100G 24x25G 1RU	CORE + 400G ZR/ZR+ Ufispaces S9600-28DX  Qumran2C (2.4Tbps) 4x400G 24x100G 4x25G 2RU	CORE + 400G ZR/ZR+ Edgecore AGR400  Qumran2C (2.4Tbps) 4x400G 22x100G 4x25G 2RU
CORE + 400G ZR/ZR+ Ufispaces S9600-56DX  Qumran2C (4.8Tbps) 8x400G 48x100G 4x25G 2RU	CORE + 400G ZR/ZR+ Ufispaces S9610-46DX  Qumran2C+ (7.2Tbps) 6x400G 40x100G 4x25G 2RU	CORE + 400G ZR/ZR+ Edgecore AGR560  Jericho2C+ (7.2Tbps) 12x400G 24x100G 4x10G 2RU	CORE + 400G ZR/ZR+ Ufispaces S9610-36D  Jericho2C+ (14.4Tbps) 36x400G 2RU
AI FABRIC + 400/800G ZR/ZR+ Ufispaces S9321-64E  Tomahawk5 (51.2Tbps) 64x800G 2RU	AI FABRIC + 400/800G ZR/ZR+ Ufispaces S9321-64EO  Tomahawk5 (51.2Tbps) 64x800G 2RU	AI FABRIC + 400/800GZR/ZR+ Edgecore AIS800-64D  Tomahawk5 (51.2Tbps) 64x800G 2RU	AI FABRIC + 400G ZR Edgecore DCS520  Tomahawk4 (25.6Tbps) 64x400G 2RU

12

Validated platforms

1G to 800G

Interface speed range

6

ASIC families (Q2A, Q2C, Q2C+, Jericho2C+, TH4, TH5)

2

Temp-hardened, -40C to 65C

Coherent optics move into the box

Fewer boxes, less power, one team

The coherent optic moves into the router port as a 400ZR or OpenZR+ pluggable. The transponder shelf goes away; the open line system stays.

LEGACY: separate IP and optical layers



Grey optics handoff to external transponder and muxponder shelves. Separate IP and optical teams mean fragmented management.

IPoDWDM: coherent in the OcNOS router



Embedded coherent pluggables: 400ZR, OpenZR+, ZR+ (QPSK / 8QAM / 16QAM). Single pane of glass · 1RU per degree · 800G roadmap.

25 to 30% lower CAPEX and OPEX · 55 to 65W open line system

3x less power per wavelength · faster fault isolation

From router to wavelength

Hardware-level integration: the OcNOS router plus the Smartoptics open line system



ROUTING CORE

UfiSpace S9600-56DX

4.8 Tbps, dual Broadcom Qumran2c
Integrated 400G ZR/ZR+ pluggables
2RU chassis running OcNOS

OPTICAL LINE SYSTEM

Smartoptics DCP-R-34D-CS

34-degree | 34 LC add-drop / cross-connect ports
Dedicated line input / output ports

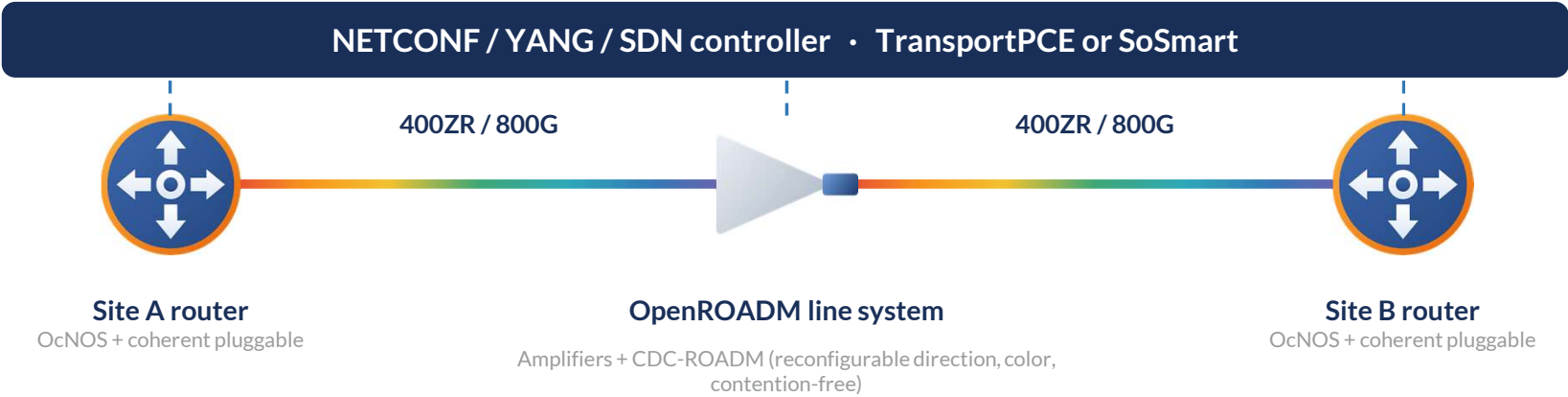
OPTICAL LINE SYSTEM

Smartoptics DCP-R-9D-CS

9-degree | 3 LC add-drop / cross-connect ports
40 DWDM client channels

Standardized LC connectivity: all ROADM add-drop and line ports use industry-standard LC connectors.

Disaggregated IPoDWDM: unified control



Coherent pluggable optics (400ZR / 800G) convert electrical signals directly to DWDM, with no dedicated transponder hardware.

Unified SDN controller

Centralized orchestration with TransportPCE or SoSmart.

NETCONF / YANG integration

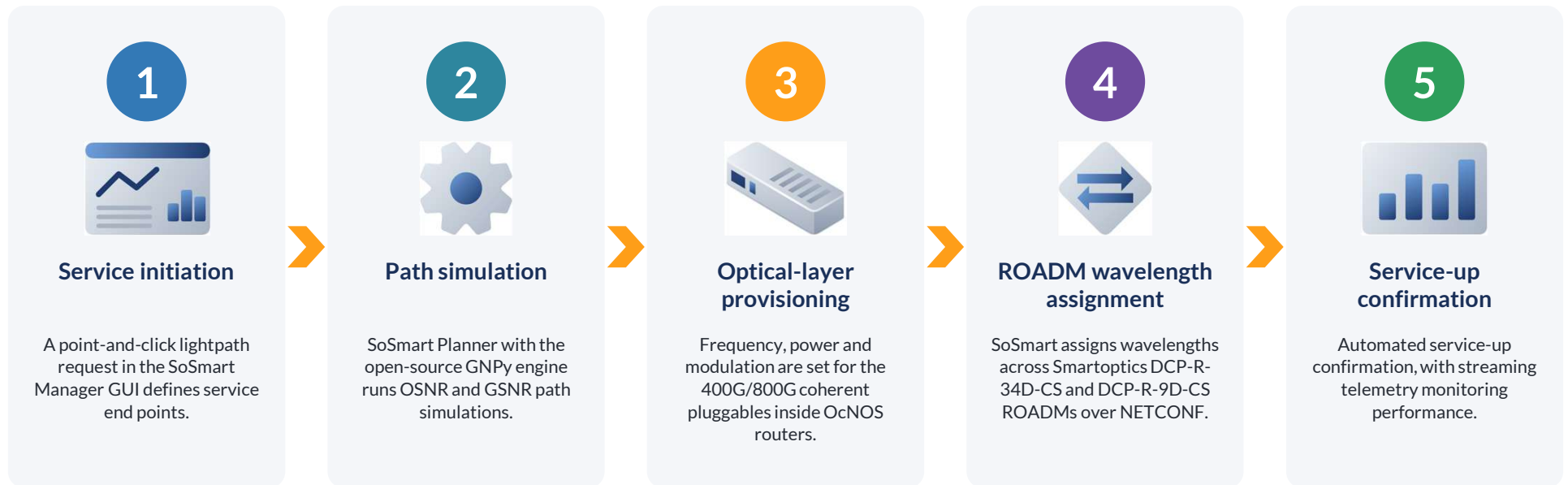
Open YANG data models across the router and the optical layer.

Point-and-click provisioning

Provision capacity and isolate faults from a single interface.

Turning up a wavelength

Disaggregated IPoDWDM: automated provisioning and management



What this means for your network

Segment solutions for open, high-performance networking

Metro / Regional SP



Scalable open line systems

Ring and mesh topologies with up to 12-degree ROADM capability.



Unified IP over DWDM management

Manage IP and optical layers from a single CLI or SDN controller.



Lower TCO for broadband backhaul

Up to 65 to 75% cost savings versus traditional Tier-1 vendors.

Distributed Enterprise



High-capacity DCI up to 26 Tbps

Ultra-high-throughput interconnect between data centers on a single fiber pair.



Point-and-click provisioning

Software-defined automation for rapid service deployment.



Fibre Channel and Ethernet integration

Mix storage protocols with high-speed Ethernet on one infrastructure.

Multi-vendor flexibility at every layer. No single company owns your refresh cycle.

Deployment successes

Open, OcNOS-driven 400G IPoDWDM backbones, in production today

“

“The shift to an open, OcNOS-driven 400G IPoDWDM backbone gives us the control, visibility and operational efficiency we need to keep our services consistently stable and ahead of demand.”

Christoph Ehmayr

Team Lead Network / System Engineer, eww ITandTEL

“

“The disaggregated solution lets us break free from the locked-in approach of traditional systems and pick best-of-breed elements for every layer. IP Infusion complements Smartoptics well, improving cost efficiency with a compact form factor and highly efficient 400G ZR+ pluggable technology.”

Kristian Pedersen

System Architect, ASOM-Net

Open. Proven.
Carrier-Grade.

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