

NEC Network Operating System for Driving Openness and Value



Communication service providers (CSPs) have been facing major network migration in response to changing critical demands. This migration has had a major impact on their business and the overall ecosystem. That's why it's more critical than ever for CSPs to have flexible and affordable network solutions such as agile service provision and architectures to meet new demands.

NEC Network Operating System (NEC NOS) – part of our NEC Open Networks solution suite – is designed to meet CSPs' evolving needs and leverage an open ecosystem of industry leading network and software suppliers.

Other industries have proved the value of the Openness approach. NEC believes it is the best solution – both economically and technologically – for CSPs to achieve optical network disruption.

Deploying an NEC Open Networks solution will give you the ability to:

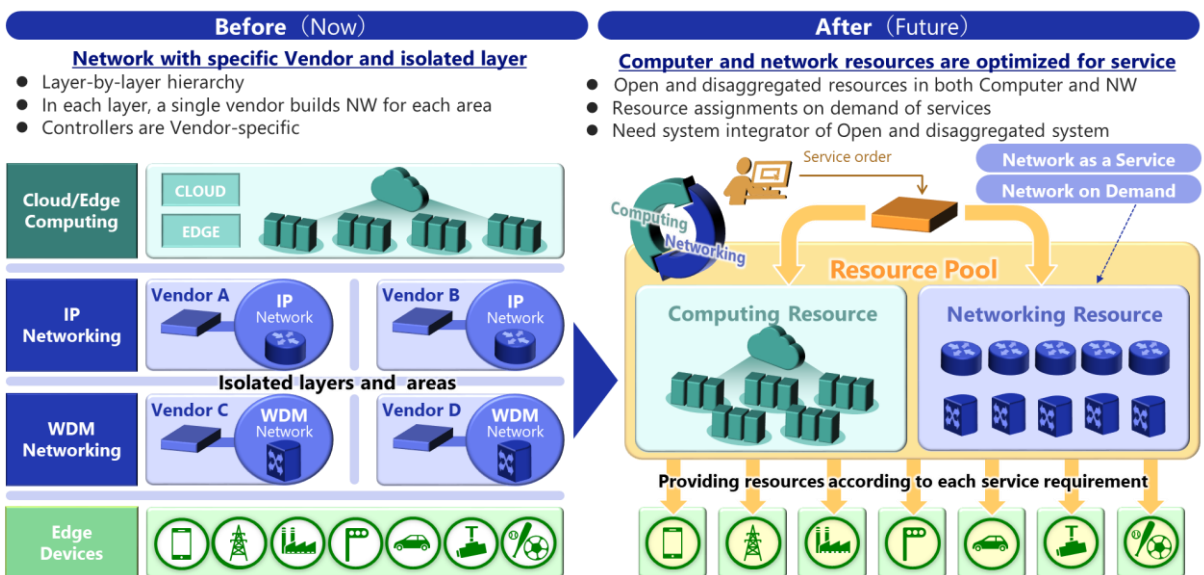
- Scale your communications on demand to meet your changing network needs
- Accelerate innovation with intelligence
- Uncover new revenue opportunities

Overview

As the market expects, the future networks will become open and disaggregated systems that allow for rapid service providing. Consequently, the challenges such as vendor lock-in faced by many CSPs will be resolved by this approach and making the network more manageable.

If networks progress to become open, they can be treated as resource pools similar to the current computing world. This facilitates CSPs to seamlessly scale their resources on demand to accommodate their evolving network requirements. This means that end-to-end optical paths can be constructed in a short time.

NEC is a leader in the integration of open and disaggregated system which are composed of multi-vendor ecosystems.



Benefits of NEC NOS & Openness

- **High Availability**
CSPs can install their choice of application and software on ODM-supplied White Boxes and build a system to operate continuously and seamlessly.
- **Cloud-Native**
CSPs can manage customers' needs with a cloud-native approach, enabling them to increase or decrease bandwidth and add applications and hardware on demand.
- **Automation**
Thanks to Open API, CSPs can deploy automation on their network, lowering OPEX and energy consumption, and improving their sustainability with Life Cycle Management.

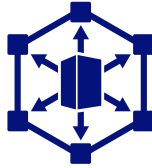
Solutions

NEC has extensive experience providing system integration in multi-vendor environments to large-scale carrier networks – from the development to the operational phases – using open optical transmission devices.

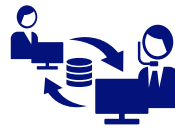
With cutting-edge solutions and best-in-class products from leading industry partners, we can help you build a competitive, flexible and affordable network.



Your Partner



Integration Service



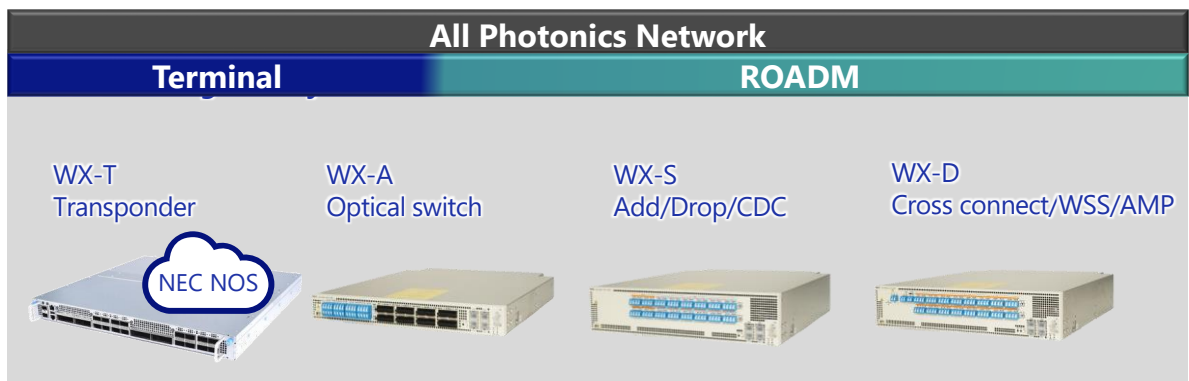
Technical Support



Value-Added Consulting

Our NEC NOS features include:

- Application Hosting
- Disaggregated Open Optical Transport
- Multi-Vendor Interoperability



Integration

With NEC NOS, it is possible to integrate various services, ranging from small ones within the user's management scope to large ones demanded by CSPs. Cloud-native container-based software running on Linux offers a high flexibility and can implement various OSS solutions and applications.

To give an example, Open Source Software (OSS) configuration management and monitoring visualization tools can collaborate with NEC NOS to solve user issues at a low cost. The end-to-end optimization of the optical path desired by CSPs can be achieved quickly through agent applications.



Features

Network and device management

- Alarm management
- Performance monitoring
- Notification
- Streaming telemetry
- Line interface configuration
- Client interface configuration
- Datapath configuration
- Loopback and PRBS
- Out-band management
- In-band management†
- Multi-chassis, cascade management†
- Zero-touch provisioning (ZTP)
- In-service software upgrade (ISSU)

Resiliency

- 1+1 line-side protection
- Link pass through

Synchronization

- SyncE†
- NTP client

FlexE

- Line-side FlexE termination
- FlexE-unaware transport

Software compatibility

- Linux distribution based on TIP OOPT Goldstone NOS
- TIP OOPT Transponder Abstraction interface (TAI)

Line interface

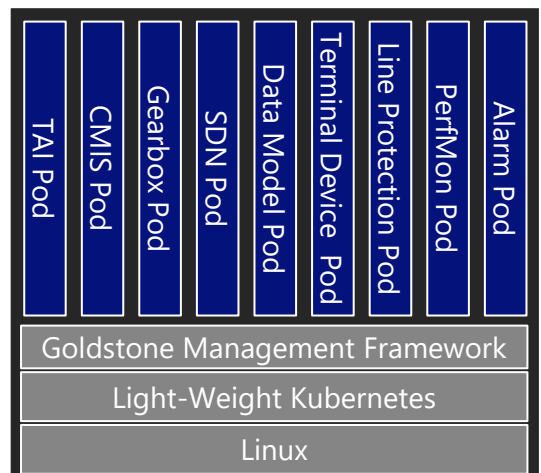
- Support for CFP2-DCO
- Support for Open ROADM specifications

Client interface

- Support for client breakout
- Support for QSFP28
- Support for QSFP-DD*‡

Management and SDN interfaces

- NEC NOS CLI
- Community-based SNMPv2 trap
- NETCONF
- gRPC/gNMI and gNOI†
- OpenConfig data models*
- Open ROADM data models†*
- NEC native data models and API†
- JSON, XML, protobuf† data serialization formats



† Planned feature

‡ With supported platform

* Support for TIP OOPT MUST

NEC Telecom Services Business Unit

Learn more at www.nec.com/en/global/solutions/open-opt/

Copyright © 2023 NEC Corporation.
All rights reserved. All trademarks are the property of respective companies.
Information in this document is subject to change without notice.

