FSP 3000 OpenFabric™ Series

Innovative switchponders for flexible metro and OTN aggregation networks

Multi-service ODU grooming is essential to leverage the power of coherent technology and lower cost per Gbit/s. However, traditional OTN switches, with a closed architecture and fixed slot capacity assignments, are not well suited for open and flexible metro and OTN aggregation networks. Our FSP 3000 OpenFabric™ Series of switchponders has an entirely new design concept that offers maximum openness, flexibility and scalability, while minimizing cost and footprint.

Our FSP 3000 OpenFabric™ Series is a family of switchponders designed to meet the most stringent metro and aggregation networks demands. It provides an open, flexible and compact OTN grooming layer for the efficient transport of low-speed services in coherent-only networks, empowering operators to get the maximum profit from their network. The OpenFabric™ Series can be integrated in any network and can work in multiple operation modes. Several card variants are available to address a wide range of applications demands. The OpenFabric™ module offers 400Gbit/s switching capacity and supports a flexible mix of services up to 100Gbit/s within a one-slot module. The OpenFabric+™ offers service aggregation into a 200Gbit/s coherent DWDM line interface supporting multiple types of modulation formats. In addition, the card variants CryptoMux™ and CryptoMux+™ offer ConnectGuard™ Layer 1 AES encryption of OTN payload. For 400Gbit/s optical layers, the OpenFabric1200™ offers Terabit interface capacity and the latest 400Gbit/s pluggable coherent technology. It supports OTN and Ethernet services from 10Gbit/s up to 400Gbit/s with a wide range of pluggable types and switching options from ODU0 to ODU4. Furthermore, it can work as DWDM multiplexer, add/drop multiplexer (ADM) and OTN cross-connect.

Your benefits

- ✓ **Open and disaggregated design**
  Flexible and standardized open front plane; no proprietary adapters; no fixed slot capacity

- ✓ **Flexible mix of services up to 400Gbit/s**
  Including OTN, Ethernet, SDH/SONET and Fibre Channel, from 8Gbit/s to 400Gbit/s

- ✓ **Multi-functional cards**
  Configurable to operate as dual multiplexer, add/drop multiplexer (ADM) or ODU switch; card variants supporting Layer 1 encryption

- ✓ **Efficient OTN grooming for metro networks**
  Ease of use and scalability with no wasted capacity and unnecessary costs

- ✓ **Leverage coherent pluggable innovation**
  Use of latest high-speed DWDM coherent pluggable technology

- ✓ **Compact and cost-efficient design**
  400Gbit/s or 1.2Tbit/s interface capacity on a card with multi-functional cages that support different pluggable types

High-level specifications

General information

- 400Gbit/s (OpenFabric™ / OpenFabric+™) or 1.2Tbit/s (OpenFabric1200™) interface capacity on a card
- Pluggable coherent optics up to 200Gbit/s (OpenFabric+™) or 400Gbit/s (OpenFabric1200™)
- Traffic protection options

Modes of operation

- Add/drop multiplexing (ADM), multi-service aggregation (muxponder) and OTN switching
- Traffic flow: client to network, client to client (OTN services) and network to network

OTN switching

- ODU0, ODU1, ODU2, ODU3, ODU4, ODUflex layer
- Non-blocking
- Efficient service grooming
- Two-card fabric interconnection option, increasing switch and interface capacity (OpenFabric1200™)

Supported services

- OpenFabric™ / OpenFabric+™:
  - 10 to 100Gbit/s Ethernet
  - OTU2/2e, OTU4
  - 8/16/32 Gbit/s Fibre Channel
  - STM64/OC192 SDH/SONET
- OpenFabric1200™:
  - 10 to 400Gbit/s Ethernet
  - OTU2/2e, OTU4

Data encryption

- CryptoMux™ and CryptoMux+™ card variants supporting our ConnectGuard™ encryption technology on OTN payload
- Design according to FIPS 140-3 requirements
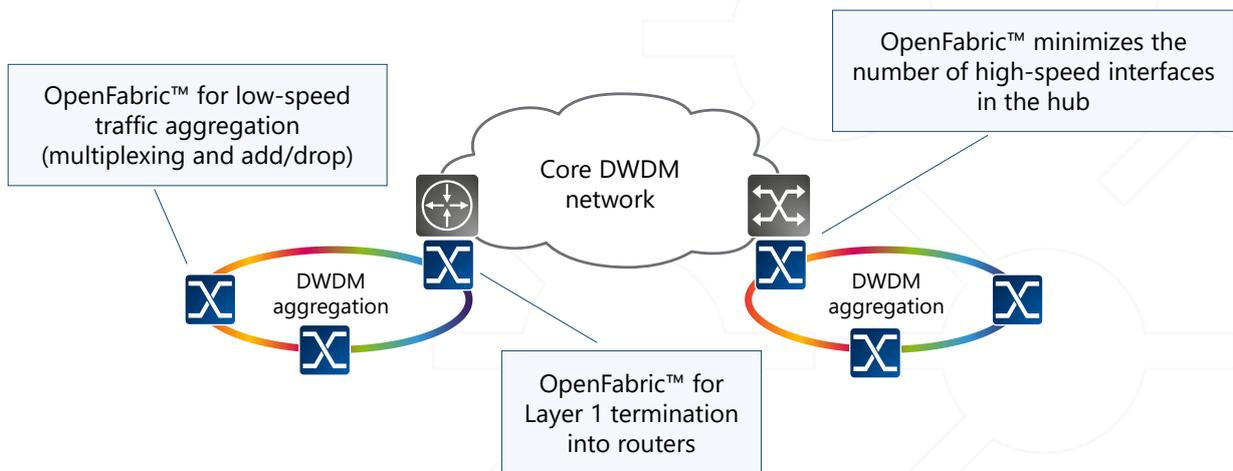- AES-GCM and AES-CTR modes
- 256-bit key

Chassis options

- Fits in multiple chassis sizes (1RU to 12RU)
- 19", ETSI and 23" ANSI/NEBS rack-mountable chassis
- ETSI 300mm and 600mm depth options
- Line degrees can be equipped in different shelves

Applications in your network

Open and flexible OTN grooming in a card engineered to meet metro network demands

- Lowering cost per Gbit/s through:
  - Multi-service aggregation of client services into 100Gbit/s, 200Gbit/s, 300Gbit/s and 400Gbit/s coherent wavelengths
  - Add/drop multiplexing of client services into two coherent wavelengths (east/west)
  - OTN switching of client services up to 1.2Tbit/s total capacity
- Smooth upgrade of existing network infrastructure to coherent technology
- High-capacity, open and disaggregated metro and core optical network infrastructure
- Efficient use of fiber capacity

OpenFabric™ for low-speed traffic aggregation (multiplexing and add/drop)

OpenFabric™ minimizes the number of high-speed interfaces in the hub

Core DWDM network

DWDM aggregation

DWDM aggregation

OpenFabric™ for Layer 1 termination into routers

ADVA™