

# FS 100G Portfolio



## Overview

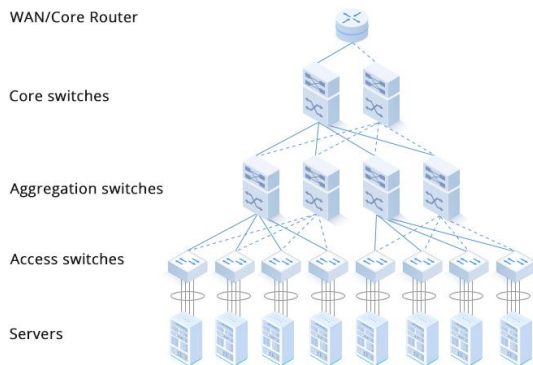
With the continuous development of data center networks, high-performance computing, and Internet service providers, the demand for high-density and low-power 100G Ethernet solutions is becoming more and more significant. Since the rapid development of 100G, FS has launched a series of high-performance 100G optical products, such as 100G QSFP28, 100G CWDM4, 100G CFP/CXP, and 100G DAC/AOC, etc. They all support various short-distance and long-distance solutions, helping enterprises to upgrade the 100G network.

## Networking Trends

The traditional three-layer network architecture mainly focuses on north-south traffic, and the network speed is mostly 10G/25G/40G backbone data center network. In recent years, the exponential growth of Internet data has increased the requirements for network bandwidth and low latency, which also makes the three-tier architecture gradually fade out of the network industry, followed by the rise of [spine-leaf network topology](#). The arrival of the 5G era has also promoted the explosive growth of cloud drives. The 100G network has become the mainstream to meet the demand for massive data and will be replaced by 400G networks in the future.

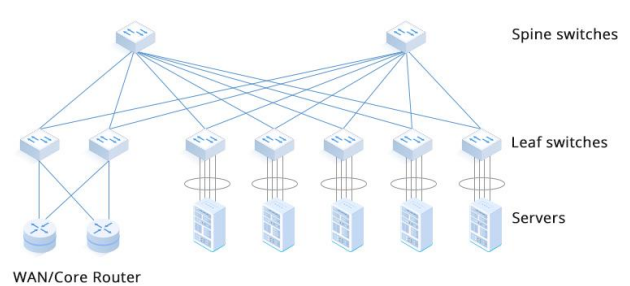
### Traditional 3-Tier

Traditional Three-Tier Data Center Network Architecture



### Spine-Leaf

Spine/Leaf Data Center Network Architecture



With the in-depth development of 100G networks, 100G optical technology has also made breakthroughs. The 100G data center network can be built through MTP fiber jumpers to achieve high-performance networking, and the specified distance on [OM3/OM4/OM5](#) can reach 70/100/150 meters. Access layer networks within short distances can directly choose 100G QSFP28 DAC/AOC cables to build connection solutions.

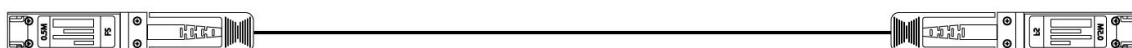
100G AOC-100G



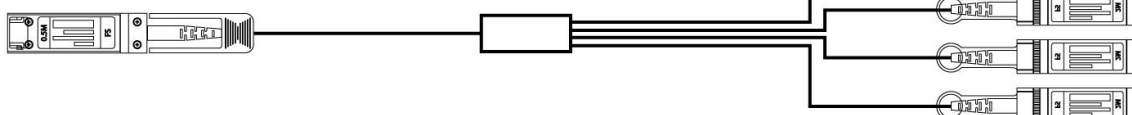
100G AOC-4\*25G



100G DAC-100G

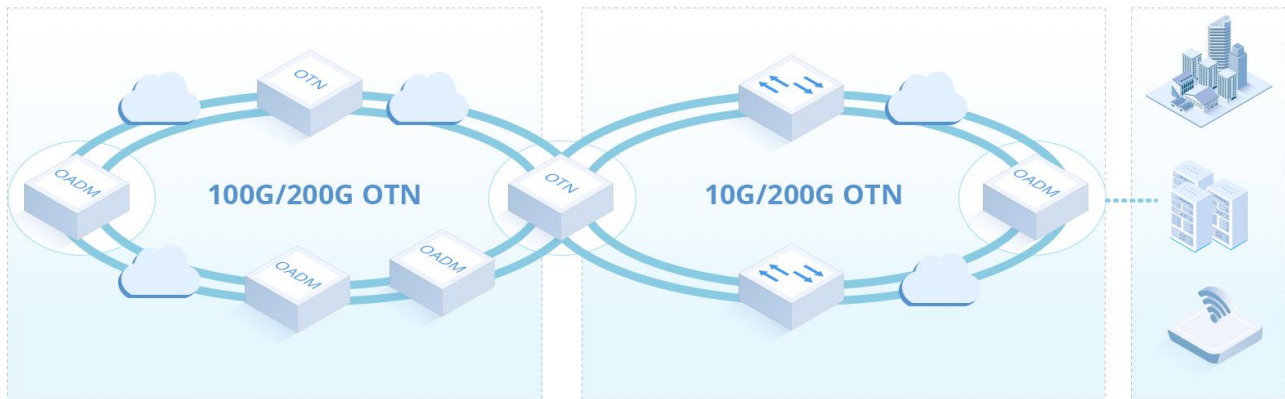


100G DAC-4\*25G



As we all know, data center interconnection is a relatively complex process, so 100G high-speed Ethernet must make breakthroughs in long-distance data transmission, not just limited to small area networks. Over the years, 100G network standards have been continuously developed and improved, and breakthroughs have been made in DWDM and coherent technologies, addressing the needs of long-distance transmission. 100G DWDM technology supports flexible combination and aggregation of services such as multi-protocol multi-rate 10/40Gb Ethernet, 8/16/32G Fibre Channel, and OTU2/2e/3 OTN on a single OTN 100G DWDM uplink.

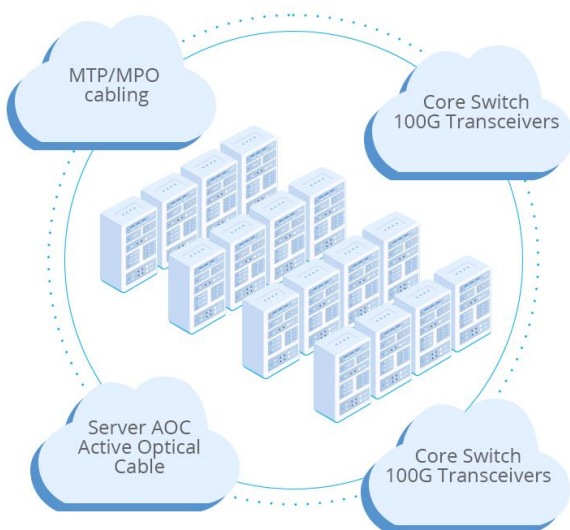
The 100G coherent solution also highlights its performance advantages in long-distance network transmission. Called "the future of high-speed DWDM," coherent optics utilizes QAM/DPSK to carry multiple symbols per bit. Coherent technology can not only achieve ultra-long-distance dispersion compensation but also simplify network wiring, and improve spectral efficiency and internal capacity. It is an ideal choice for DWDM data center interconnection, metro networks, and regional/long-distance applications.



## Explore FS 100G Portfolio

To meet the needs of users, enterprises keep up with the pace of data center network development and continuously upgrade to 100G networks, and 100G networks are still developing. FS 100G transceivers and related products enable a variety of high-density and low-power 100G connectivity options for data center, enterprise, and telecom applications. It includes a 100G QSFP28 module, 100G CFP/CFP2/CFP4 module, CWDM4 modules, 100G DAC/AOC, and its breakout cables. Featured products such as 100G and OTU4 QSFP28 dual-rate modules and 100G QSFP28 single Lambda modules are also available.

## FS 100G Products



### Transceivers



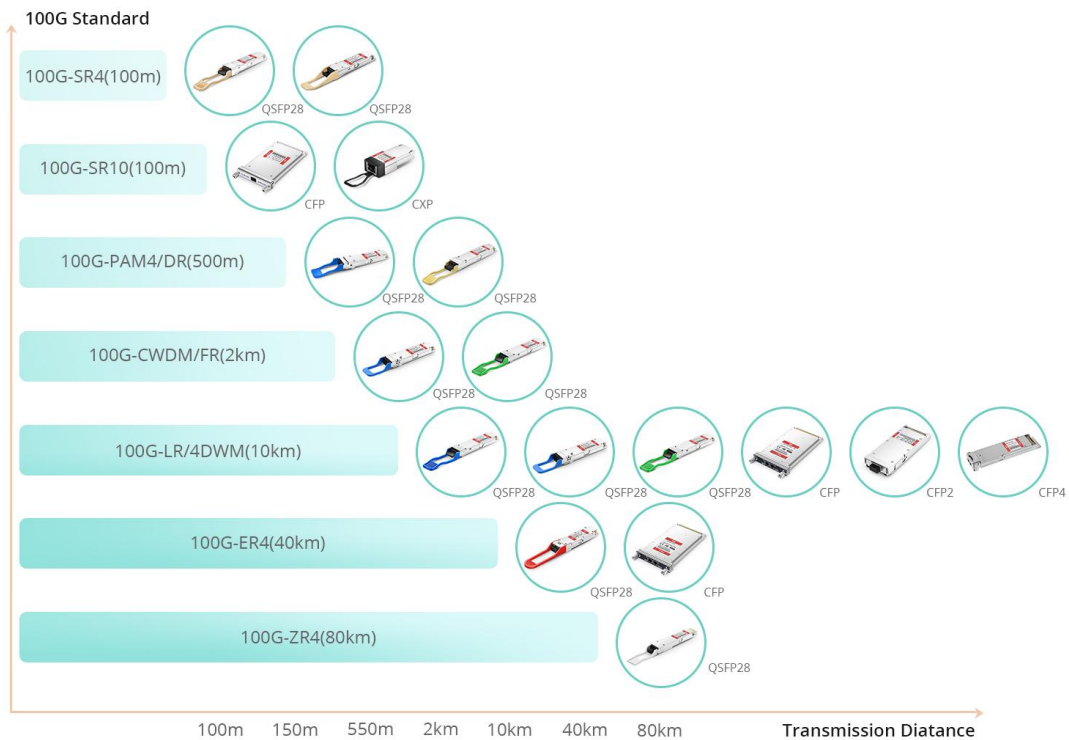
### DAC/AOC



### MTP Cables



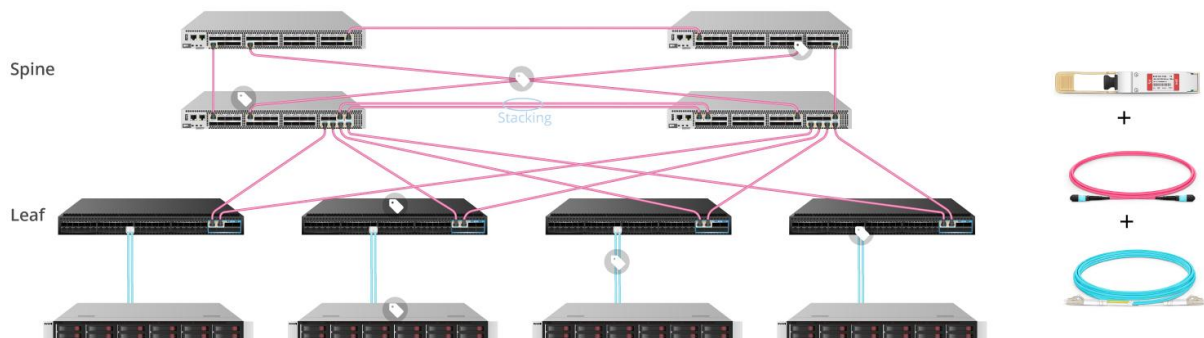
The following figure shows the selection of transceiver types under different network transmission requirements. Short-range transceivers can choose 100G QSFP28 SR4 or CXP, long-range transceivers can choose 100G QSFP28 LR4/ER4 or CFP.



## Application Scenarios

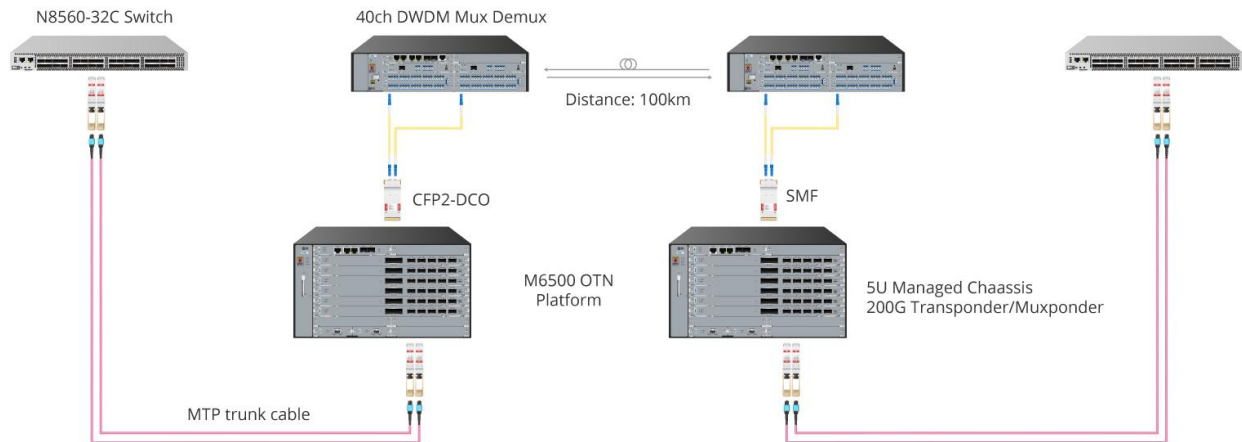
### Data Center Network Connectivity

Most data centers are spine-leaf architecture, with each spine switch connected to the leaf switches, which in turn connect to servers and forward traffic to the spine switch. The spine-leaf architecture reduces data center network latency and effectively improves network performance. The FS N8560-32C spine switch has 32 x 100G QSFP28 ports paired with 100GBASE SR4 QSFP28 transceivers. The N5860-48SC leaf switch is equipped with SFP 10G SR transceivers to build a high-performance and high-reliability 100G network. 100GBASE-SR4 QSFP28 optical transceiver modules are commonly used for 100GBASE Ethernet, using 850nm wavelength over OM4 multi-mode fiber (MMF) through MTP/MPO-12 connectors.



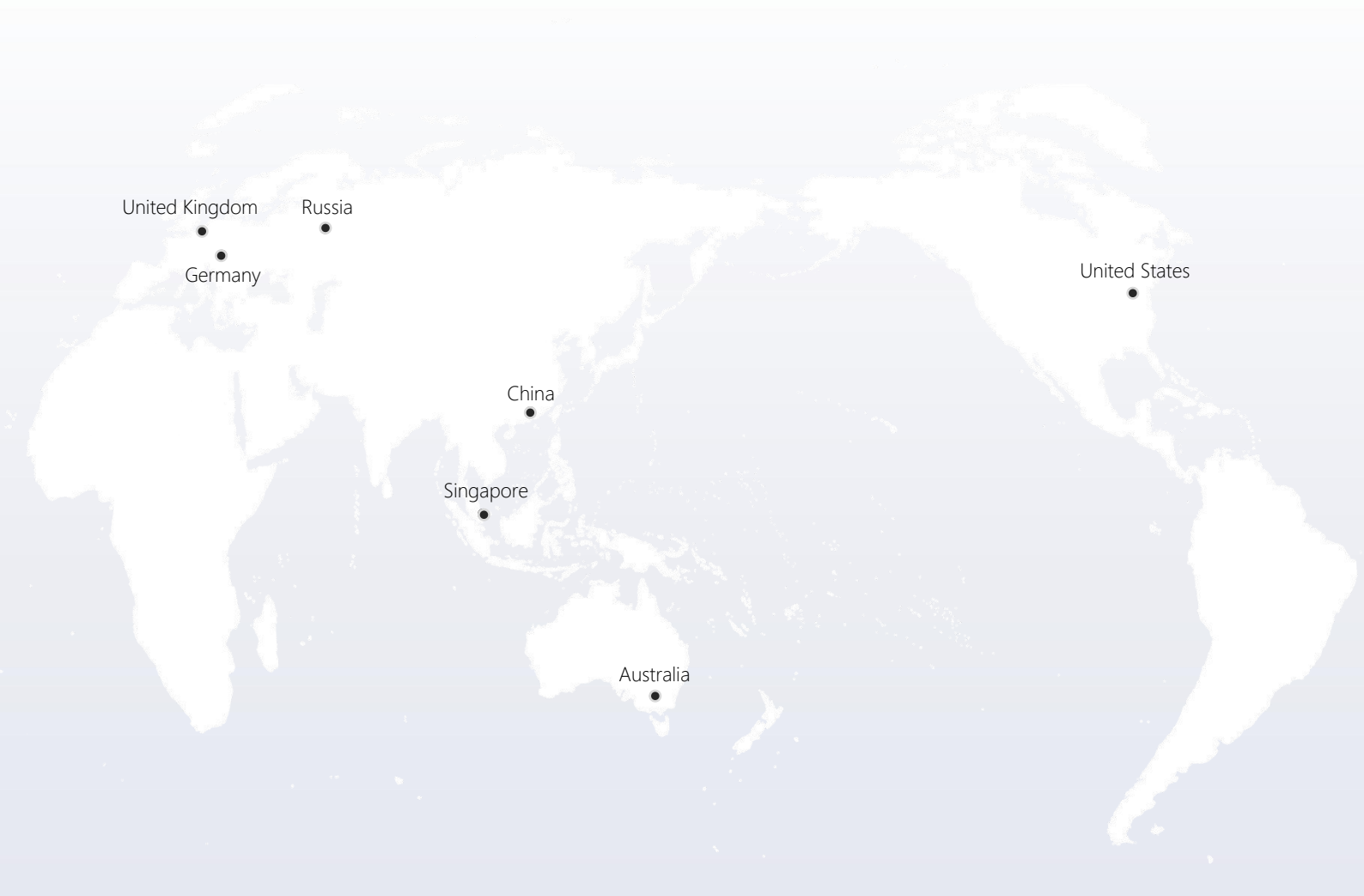
## Data Center Interconnection

The 100G coherent DWDM solution supports the transmission of 100G capacity over long distances, even up to 1000 kilometers, for data center interconnection needs and metro networks. FS offers OTN platforms and 100G coherent transceivers that utilize DWDM MUX as well as single-mode fiber and MTP patch cords to provide flexibility and scalability for long-distance connections. 100G CFP coherent transceiver series with single-mode fiber can realize a 10km or 40km data transmission solution.



## Summary

FS offers a unique set of high-performance, reliable and cost-effective optical transceivers, like 100G QSFP28, to help enterprises and service providers achieve their goals and meet the challenges of various data center network topologies. FS uses the industry's most advanced tools and instrumentation to test transceivers to ensure that optical products provide the right mix of functionality and performance when combined with other products. Each fiber optic transceiver is field-tested on host equipment in the FS Assured Program, which guarantees full compatibility with over 200 suppliers.



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