

Case Study

DCI Solution

FS All-In-One 100G DWDM PAM4
Solution Simplifies Network
Architecture

With FS's 100G DWDM PAM4 solution to build an all-in-one and automatic configuration Data Center Interconnect, achieving lower costs and easy deployment.

FS All-In-One 100G DWDM PAM4 Solution Simplifies Network Architecture

Country

 Singapore

Industry

 Internet Service Provider

Network Type

 Data Center Interconnect

Solutions

 Optical Networking

Highlights

- The 100G DWDM PAM4 solution features an all-in-one design, integrating 100G PAM4 modules, Mux Demux, EDFAs, DCMs, VOAs, and Red/Blue filters in a 1U platform for a simplified DCI Network.
- FS experts provided the customer with a demo experience and conducted online training to assist them in understanding the products and solutions.

Key Stats

- Achieved a 30% reduction in costs with the implementation of the all-in-one solution.
- Enabled seamless transmission of 8x 100G services across three Data Centers over a single fiber for 80km transmission.
- Deliver up to 800G high capacity in a 1U form factor with 0.44 W/G low power consumption.



Overview

The client is an Internet Service Provider, committed to serving innovative and efficient Internet service, such as Data Center Interconnect and Disaster Recovery. Headquartered in Singapore with regional offices in Malaysia, Hong Kong, Indonesia, Vietnam and the United States, the client has established a strong presence and extensive network infrastructure in Southeast Asia, the United States, Europe and Latin America.

Our partner, who has an extensive network of over 90 data centers, has recently planned to implement 100G services at three sites. They emphasized the need for a solution featuring user-friendly products, seamless configuration, and easy maintenance. In response, FS technical experts recommended the 100G DWDM PAM4 Solution, which offers automated configuration and zero-touch provisioning.

Challenges

The expansion of network infrastructures brings challenges in effectively managing the increasing volume of devices and interconnections. Moreover, the deployment of the DCI Network across three sites with the mainstream 100G DWDM Solution necessitates six equipment sets of EDFAs, Mux Demux, Transponder/Muxponder, DCMs, etc., which means the installation and configuration is not easy and needs professional technicians. With technical demands and a shortage of skilled professionals, the customer's network operations and maintenance efficiency will be impacted, which may cause service disruptions, prolonged downtime, and heightened data security vulnerabilities. With the limited budget, we must provide a user-friendly DCI solution that nonprofessional workers can easily operate on.

Solutions

To address the specific requirements of the customer's 100G Data Center Interconnect, FS has recommended a cutting-edge point-to-point 100G PAM4 solution as the perfect fit for connecting their three sites seamlessly. At the heart of this solution lies the DCP920 Series, a compact 1U platform that integrates all the essential components needed for a robust infrastructure.

The DCP920 Series incorporates 100G DWDM PAM4 modules, Mux Demux, EDFAs, DCMs, Red/Blue filters, and VOAs into a single and unified system. This intelligent integration eliminates the need for complex installations and the requirement for additional purchases of cards or DWDM modules. The result is a more streamlined and cost-effective deployment process, saving both time and financial resources for our customer.

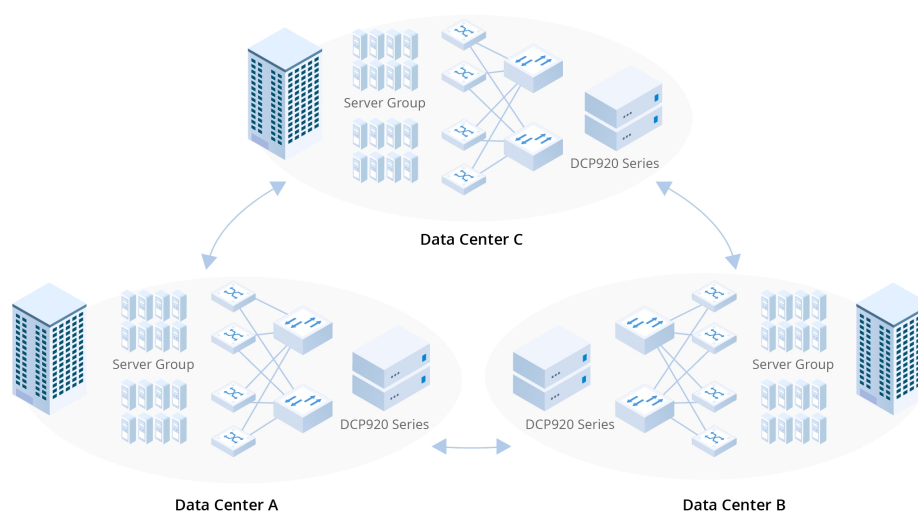
One of the standout features of this solution is its support for automatic configuration and zero-touch deployment. It possesses the ability to automatically adjust the parameters of EDFAs (BA, PA) and DCMs based on the current link conditions, all without manual intervention. This means that even staff without specialized knowledge of optical transmission services can easily operate and manage the system, ensuring a hassle-free experience.

To provide customer with utmost confidence, FS offered them a comprehensive demo experience. Additionally, technicians conducted online training sessions to address any questions or concerns the customer had regarding the OSC port, product features, and related matters. FS believes in empowering customers through knowledge and support.

Results

The highly integrated 100G DCI DWDM PAM4 Solution enables customers to insert 100G SR4/LR4/IR4 modules and transmit 100G PAM4 signals, transporting 8x 100 services for 80KM transmission. Moreover, the solution is applied for single-fiber transmission, delivering 800 capacity over a single fiber, which minimizes fiber resource

usage. Compared to 100G coherent solutions, this solution saves approximately 30% in costs. The automatic configuration reduces the workload on staff and improves operational efficiency. With the assistance of our professional technical support, the customer completed the deployment and implementation of the solution.



Product List

Product	ID	FS P/N	Description
Open Line System	201571	DCP920-D08PA	8 Channels 100G DWDM PAM4 Open Line System, C45-C60, 8 x 100G QSFP28, Single Fiber, Side-A
Open Line System	201573	DCP920-D08PB	8 Channels 100G DWDM PAM4 Open Line System, C21-C36, 8 x 100G QSFP28, Single Fiber, Side-B
100G Data Center Switch	110480	N8560-32C	N8560-32C, 32-Port Ethernet L3 Data Center Switch, 32 x 100Gb QSFP28, Support MLAG/Stacking
100G QSFP28 Module	104860	QSFP-LR4-100G	100GBASE-LR4 QSFP28 1310nm 10km OS2 Duplex LC SMF Transceiver Module for FS Switches
OS2 Single Mode Fiber	40191	SMLCDX	1m (3ft) LC UPC to LC UPC Duplex OS2 Single Mode PVC (OFNR) 2.0mm Fiber Optic Patch Cable



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