



CASE STUDY

Leading Cloud Computing Service Provider Standardizes on Wirewerks' NextSTEP™ Fiber Management System in 14 Data Centers

Project Overview

Our customer is a hybrid multi-cloud managed service provider delivering high-performance cloud computing solutions and professional services to clients in the United States, Canada, Latin America, the United Kingdom and Europe. Currently operating 14 data centers in North America and the UK, our customer recently initiated a comprehensive migration program to increase network speeds and capacities in all data centers.

This study examines the customer's network migration project, and describes how Wirewerks' fiber management solutions helped expedite network deployments, reduce costs, and create solid foundations for efficient network operations and future growth in all data centers.

AT A GLANCE

Customer: Cloud Computing Service Provider

Industry: Cloud Data Center Operator

Location: 14 Data Centers in US, Canada, UK

Application: Fiber Management in spine-leaf DC network

Project: Increase data center fiber bandwidth, capacity, speeds

Challenges:

- Standardize on a fiber management system across all company DCs
- Simplify fiber deployment, management and operations
- Repeatable in both existing and new DCs

Wirewerks Solution: NextSTEP™ Fiber Management System (FMS)

Benefits:

- NextSTEP System establishes company-wide standard for FMS, yet configures easily for the specific requirements of each DC
- Modular FMS with plug-and-play pre-term fiber modules simplifies deployment, maintenance and operations
- Pre-term fiber ensures superior optical performance and network reliability
- High fiber capacity/high-density NextSTEP System saves space and maximizes ROI
- Significant CAPEX and OPEX savings

Customer's Challenges

The customer's network migration program was designed to achieve two strategic objectives. First, increase network bandwidth and capacity to provide higher speeds and throughput for their customers. Second, ensure their fiber networks were optimized to provide the many inherent benefits of spine-leaf architecture in cloud data center operations.

The migration program began with a pilot project to validate design assumptions and identify implementation challenges. The pilot demonstrated that their **legacy fiber solution was heavily dependent on field fusion splicing** -- a technique that requires specialized techs, drives up costs, introduces the potential for optical performance impairments, and extends project completion times.

The pilot also identified fill/congestion issues in cable trays and fiber managers when adding new fiber media for the network migration, and exposed **inefficient use of existing fiber assets when migrating from Base-12 to Base-8 MPO cabling** for 10G/25G/40G/100G parallel optic transmission.

Finally, the pilot reinforced the need for a scalable fiber management system to leverage the inherent scalability of spine-leaf data center architecture, and clearly established the economic and operational benefits of standardizing on an advanced fiber management solution across all company data centers.



Wirewerks' NextSTEP™ Solution for Cloud Data Centers

To maximize network connectivity, availability and scalability while minimizing latency in their cloud data centers, the customer adopted a two-tier spine-leaf architecture with top-of-rack (ToR) network access switches connected to aggregation switches for routing and network core functions.

To optimize the spine-leaf architecture in each of their 14 data centers, the customer selected Wirewerks' NextSTEP™ Fiber Management Systems. The wide selection of NextSTEP patch panels and fiber modules provided the functionality and flexibility needed in each data center, and allowed the customer to realize the financial and operational benefits of a standardized fiber management solution.

To simplify network operations and reduce costs, the customer deployed NextSTEP factory-terminated fiber modules and fiber cable assemblies to create 'plug-and-play' connections whenever possible. NextSTEP 'plug-and-play' products reduce installation and maintenance times while increasing optical performance and reliability; all without the need for specialized fiber technicians.

The star of the NextSTEP 'plug-and-play' solution was the 3S-FLEX Module. By combining 12/24F LC distribution cassette with an MPO fiber trunk cable stored on an onboard spool, the 3S-FLEX Module allowed technicians to complete multi-fiber trunk connections by simply pulling the spooled MPO trunk cable to the exact length required and plugging the MPO connector.

The Outcome

Spine-leaf architecture in cloud data centers optimizes server-to-server communications, reduces latency, and scales efficiently. The meshed connections between switches enable any-to-any connectivity with predictable performance and inherent redundancy.

Wirewerks' NextSTEP System provides a high-density, plug-and-play fiber management solution that deploys faster, simplifies operations, scales easily and reduces costs.

