

Case Study

Enterprise LAN

FS Scalable 10G Network Solution for
Expanding Aerospace Tech Firm

FS 10G network solution helps an aerospace tech firm implement a scalable 10G network upgrade, ensuring robust performance for their expanding operations.



FS Scalable 10G Network Solution for Expanding Aerospadte Tech Firm


Country

 United States

Industry

 Aerospace

Network Type

 Large and Midsize Campus Network

Solutions

 Enterprise LAN

Highlights

- Implemented a cost-effective 10G network upgrade, using FS S5850-48T4Q 10GBase-T switches to save costs on SFP+ modules.
- Utilized 40G QSFP+ DAC and 10G SFP+ DAC for efficient and low-cost connections, ensuring high performance and reliability.
- Successfully connected 2 buildings with high-performance 10G OM3 bend-insensitive fiber (BIF), enhancing network stability and scalability.

Key Stats

- Upgraded network capacity to handle increasing business demands with a 10G backbone.
- Connected 2 buildings over a distance of less than 500 feet with reliable fiber optic channels.
- Implemented a scalable solution, allowing future expansion with stackable switch configurations.



Overview

The advancement of autonomous driving technology has led to a surge in data processing needs, particularly in perception, decision-making, and control. These processes rely on high-performance computing and real-time data processing, making a data center specifically designed for autonomous driving technology critical.

Our client, a startup company specializing in autonomous vehicle technology, plans to build a high-performance computing network within its data center to support the development of self-driving technology.

Challenges

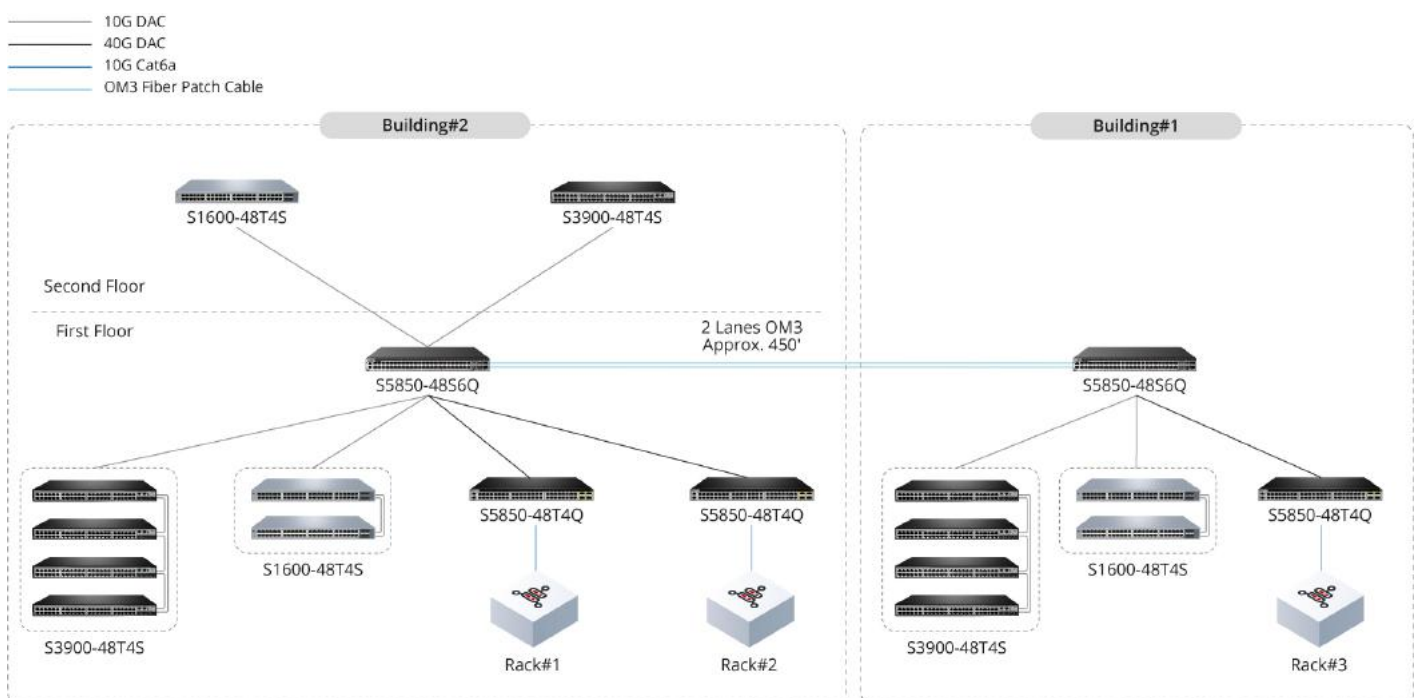
The client faced significant challenges with their existing network infrastructure. Their data room in one building had approximately 256 active ports, while the other building had about 100 ports.

They expected to set up 3 to 4 PoE switches and 8 stackable S3900-48T4S switches as access switches. Both buildings required a core 10G network switch like the S5850-48S6Q to serve as the backbone for high-speed data transfer. Thus, a cost-effective solution was essential to manage current network traffic and allow for future scalability.

Solution

After several consultations with the client, FS proposed a comprehensive and economical solution to meet the client's needs:

- Replaced the S5850-48S6Q 10G SFP+ switch with the more cost-efficient S5850-48T4Q 10GBase-T switch as the Top-of-Rack (ToR) switch. This setup connects to servers via 10G Cat6a Ethernet cables, eliminating the need for expensive SFP+ modules.
- Used 40G QSFP+ DACs for aggregation layer uplinks to the S5850-48S6Q switch.



- Integrated S1600-48T4S PoE switches and stackable S3900-48T4S switches into the network, connecting them to the core switch using low-cost 10G SFP+ DACs.
- Stacked four S3900-48T4S switches to form a single entity, using 10G SFP+ DACs to minimize costs. This setup can scale up to six stacked switches if needed.
- Connected the 2 buildings with two lanes of high-performance 10G OM3 bend-insensitive fibers (BIFs) to ensure reliable and high-speed connectivity.

Results

The FS tech team successfully upgraded the client's network, ensuring stable and reliable service delivery. This tailored, cost-effective 10G network solution delivers several key benefits:

- Enhanced network speed and capacity to support the growing demands of the client's business.
- Significant cost savings by utilizing 10GBase-T switches and DACs instead of more expensive fiber modules.
- High availability and reliability of the network, achieved through robust fiber connections and stackable switch configurations.
- Scalable infrastructure, allowing easy expansion and adaptability to future business growth needs.
- Improved overall system performance, leading to more stable and reliable services for the client's operations.



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