

Centre Network

Case Study

HPC Data Centre Solution



Highlights Country (2) United States

FS Helps an Autonomous Vehicle Startup to Build a Data

Industry

Autonomous Driving

Network Type

Enterprise Data Centres

Key Stats

CPU servers • Two 100G switches with MLAG for network

redundancy. • 7 global warehouses and a robust supply chain ensure a 100% on-time delivery rate.

A server cluster with six 4U GPU servers and three 2U

- 24H post-sale technical support and maintenance services cut client workload by 70%.
- Solutions HPC Networking
- high-performance computing networks. • The S3900-48T6S-T connects to the IPMI interfaces on servers and the management ports on core switches, allowing for separating business and management traffic.

• The N8560-32C 100G switch combines high

PFC, DCBX, and ECN to meet the demands of

performance and density with features like MLAG,

• Firewalls and routers ensure the stability and privacy of network egress portions and external connections. • FS equips GPU servers with the Ubuntu 22 system in

California, facilitating remote testing for fast

verification and delivery.

- FS provides a comprehensive suite of customised solutions for GPU, CPU and storage servers that meet customer budgets and needs.



Overview

The advancement of autonomous driving technology

data centre specifically designed for autonomous

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

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driving technology critical. Our client, a startup company specialising in autonomous vehicle technology, plans to build a high-performance computing network within its data centre to support the development of self-driving technology. The client aims to establish a high-performance computing network that connects the data centre

providing employees with basic office conditions. Moreover, the client requires internet access, necessitating the use of firewalls and security gateways to ensure data security. Challenges The client, a startup, requires a cost-effective

solution that can deliver switches, servers, and other

accessories by early December 2023 for their

with their office and warehouse, deploying GPU and

needs. Additionally, they plan to lay out an enterprise

CPU servers and 100G switches for computational

office network in their offices and warehouses,

year-end project launch. With limited supply chain integration and unfamiliarity with switch CLI configuration, they need a solution provider to ensure equipment compatibility and offer technical support, including real-time operational assistance and training. Furthermore, they need server software (Ubuntu 22) installed at the FS integration centre in California to facilitate remote testing of GPU server parameters and performance.

The client seeks a network solution provider that

offers comprehensive services, including equipment

technology ensures data safety while employees remotely access the internal network servers.

interfaces and the core switch's management port to

facilitates unified device management for the client.

In terms of product delivery and technical support, FS

ensures rapid stock deployment and on-time delivery

Additionally, FS has set up an S3900-48T6S-R

management switch, connecting server IPMI

create an isolated management network. This

separation of business and management traffic

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Tailored to the client's environment and business requirements, FS provides a full suite of customised services for GPU, CPU, and storage servers, delivering a robust hardware foundation for the client's R&D business.

and product selection of their networking solution.

The client has partnered with FS for the network design

procurement, network design, and technical support. They need a partner who can help define the specifics of

technology and products, ensuring the project is

completed on time and with high quality.

In the computational data centre, FS deployed six 4U GPU servers with dual AMD EPYC processors and 8x

Solutions

NVIDIA RTX A6000 Ada GPUs, integrated with NVIDIA Mellanox MCX653106A-HDAT ConnectX®-6 adaptors, offering immense processing power for tasks like big data analytics and autonomous driving research. Meanwhile, the three 2U RS5220 CPU servers utilise 40G Intel XL710-BM2 dual-port network cards to ensure the efficient and stable performance of critical business processes.

To realise core network expansion and connect servers and NAS devices, FS has implemented two N8560-32C

switches that support MLAG technology for hardware-level redundancy, bolstering network stability while increasing the uplink bandwidth. The N8560-32C features 32x 100G interfaces and is equipped with PFC, DCBX, and ECN technologies to deliver high bandwidth with low latency, meeting the demands of high-performance computational networks. For the enterprise office network, an N8550-32C is deployed to interconnect with the computational data centre, and firewalls and routers are installed at the network exit, ensuring stable and secure connectivity to

external networks. Data security between data centres is safeguarded using IPSec technology, and SSL VPN

Results FS offers a one-stop global supply chain service that

delivers highly compatible and stable product solutions,

significantly reducing the risk of product incompatibility.

assistance and training, slashing maintenance efforts by

Committed to on-time delivery, FS prepares remote test

environments and preloads GPU servers with Ubuntu 22

OS at our California integration centre, ensuring quality

and expedited product delivery. By analysing customer

Additionally, with FS's 24H operational maintenance

service, the customer receives end-to-end technical

with 7 global warehouses and a robust supply chain. At the Integration Centre in California, we provide on-site acceptance testing by installing Ubuntu 22 on GPU servers, assuring the quality of delivered

100G Fiber Link 10G Fiber Link

DC A Firewall Router

10G Copper Link 1G Copper Link IPSec VPN

products. The technical team provides online services including solution consultations, VLAN setup, routing configuration, and troubleshooting.

Peer-Link N8560-320 OOB Switch 100 100 100 100 **CPU Server**

SSL VPN

N8560-32C

Storage Server

IPSec VPN

SSL VPN

PC

roughly 70%.

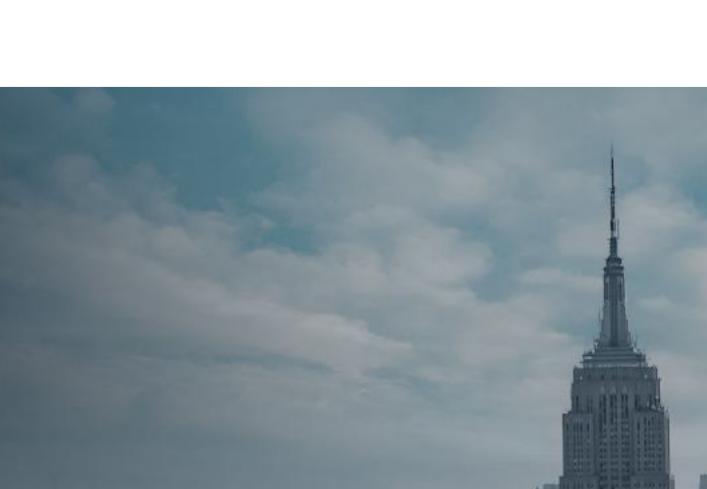
network scenarios, we assist the client choose cost-efficient solutions tailored to their current network needs but also adaptable to future growth and changes.

DC B Firewall Router

CPU Server

N8550-320

CPU Server



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