

# Fresca Group Ltd

CASE STUDY: TECHNICAL



## Business Need

Fresca was looking to upgrade the existing Local Area Network at two locations and install a new Local Area Network at a green-field site to support their virtualisation project.

## Solution

8el designed and installed an Enterprise Campus LAN at two locations and a large building LAN at the third. This case study focuses on the Enterprise Campus LAN deployed at the Paddock Wood site.

## Situations and challenges

Fresca Group Ltd has been running a flat layer 2 network at their Paddock Wood site since the sites inception. Built on ageing equipment with limited technology support, the IT Team soon concluded that the current infrastructure would not be capable of supporting the technical objectives planned for deployment across the whole Fresca Group network. These technical objectives were:

- ▶ Reduce the latency across the LAN
- ▶ Provide Power over Ethernet (POE) support for the new VoIP rollout
- ▶ Provide Quality of Service (QOS) across the LAN
- ▶ Deploy virtualisation
- ▶ Implement active/passive SAN replication

As an existing WAN customer, 8el were on hand to offer consultation to the Fresca Group and

as they had a clear understanding of this need they set out on a LANPort design strategy. The outcome was an improved Enterprise Campus LAN providing resilience and high bandwidth and low latency between all locations within the Campus.

## Design

The new Paddock Wood Enterprise Campus LAN comprises of 30 switches with a collapsed core distribution layer, spread between two communications rooms, and access layer devices spread throughout nine outer buildings directly connected back to both of the communications rooms. All physical connections between the communications room and outer buildings are over fibre.

Four of the fibre pairs running between the two communications rooms have been configured in a port channel to provide 8Gb Full Duplex across the Core. The fibres at each end connect into a Cisco 3750 Switch Stack each with a 32Gbps Full Duplex back plane. The core\distribution layer has been designed for high speed switching of data, essential for the efficient running of the applications and services the network was designed to support.

*“With such a large infrastructure and heavy reliance on the stability of the network, migrating to a new Local Area Network needed to be well planned and implemented by an experienced LAN provider. 8el handled the migration professionally and all expectations were exceeded.”*

**Rod Green**  
IT MANAGER AT FRESCA

## About Fresca

The largest privately-owned supplier of fresh produce in the UK and a key part of the food chain in Britain and beyond, Fresca Group has 17 companies with over 1000 staff and a turnover of around £450 million each year. Buying, importing and packing fruit and vegetables for the supermarkets is their core business, from sites spread nationwide. Their largest site is at Paddock Wood in Kent.

The layer 3 switches deployed in the Core provide intelligent services that the old Layer 2 switches did not support, and the use of four fibres in a port channel provides a topology without any Layer 2 loops which are seen in Layer 2 links running spanning tree protocol.

Additional Switch Stacks and port channels provide high availability and high bandwidth connections to the Enterprise Campus LAN's Server Farm and provide a robust environment for the active/passive SAN replication and virtualisation deployment.

Each of the nine outer buildings connects back to each communications room over redundant fibre connections. Layer 2 technologies have been deployed to switch traffic in a deterministic fashion and provide automatic failover in the event of physical layer failures. Per VLAN Spanning Tree + (PVST+) provides each access layer switch with a redundant path through the network to the Server Farm and Enterprise Edge.

## Implementation

The migration from old to new was phased due to the size and complexity of the project. The first task was to replace the Core/Distribution layer. The 3750 Switch Stacks were built in the lab and tested prior to installation where they were installed alongside the existing Core. Once installed and tested, the existing Core switches were disconnected and the new core brought online by re-patching the entire existing network into it to keep downtime to a

minimum. This meant the new network had to support the old during the period of transition.

The second task was to build in the 3750 Switch Stacks used to connect to the Server Farm and Enterprise Edge. Again, these were built and tested and deployed alongside the existing infrastructure. Once installed and tested, devices from the Enterprise Edge were migrated across, along with servers in the Server Farm.

The next phase was to replace each access layer switch amongst the nine outer buildings. Switches configured and tested were installed alongside the existing switches - where rack space allowed. With planned downtime, fibres were moved from old switches to new, bringing each outer building online with minimal disruption.

At each phase and step of the migration, rigorous testing was carried out between 8el and the IT Team at the Fresca Group to ensure continuity of applications and services.

Overall the implementation took 6 months, with a total of 12 days 8el consultancy which covered in house and on site planning and out of hours physical migration.

The redesign provided an effective migration plan to update Fresca's core distribution and access layers for their LAN requirements. With Fresca being satisfied with the efficient deployment, maintenance and ongoing support at the Paddock Wood site, the project plan for additional sites in Liverpool and Evesham has been completed, providing a future proof solution for Fresca.

