"When we contacted NETGEAR they understood the problem immediately and told us they had a solution. NETGEAR's confidence and the knowledge their support team had of the AV industry and our requirements convinced us to try the M4300 switches."

Nicolai Gubi Schmidt, system designer and programmer at Stouenborg

Company:
The Life Foundation

Industry:
Education

Website:
life.dk

Location:
Biologiens Vej, Denmark

How NETGEAR is helping inspire and engage future scientists

SUMMARY

The LIFE Foundation is captivating and educating young people learning about STEM topics with an exciting new campus in Denmark.

Inspiring young minds involves adding a little theatre to education and the LIFE Foundation relies on a vast AV-over-IP network to route content across its 5,400 square metre learning centre. M4300 switches from NETGEAR play a vital part in a fast and efficient network that offers endless possibilities for sharing immersive video presentations, feeds from laboratory cameras, videocalls and more. NETGEAR service and support was also crucial in helping a customer that was testing the limits of AV over IP.

BACKGROUND

The LIFE in LIFE Foundation stands for Læring, Ideér, Fascination, Eksperimenter (in English Learning, Ideas, Fascination, Experiments). This non-profit organisation was established in 2020 by the Novo Nordisk Foundation, the owner of Danish pharmaceutical company Novo Nordisk, with a commitment to engage and inspire Danish school children in STEM subjects. The Novo Nordisk Foundation wanted to secure a skilled and homegrown talent pool of future scientists and knew that captivating young minds early would be vital.

On a mission to make science engaging and relevant, the LIFE Foundation set about employing educators and content creators. Alongside recruits with STEM and teaching backgrounds, the foundation also acquired talent from areas such as theatre and videography.

The LIFE Campus in Lyngby is the first dedicated facility built by the LIFE Foundation. Groups of 30 children at a time attend the campus to be immersed and captivated with incredible content, as well as apply knowledge gained in the classroom in laboratory settings. Everything at the LIFE Campus is hands-on, interactive and practical.

Danish integrator Stouenborg designed and installed AV, lighting and multimedia technologies across the facility that contains three teaching laboratories, immersive presentation spaces, production facilities and offices.

"There are around 600 products connected to the network via 1,120 IP addresses so that gives you an idea of the scale of the project"

Anders Jørgensen, consultant and project manager at Stouenborgn

THE CHALLENGE

It was essential that content could be routed from any input or player on the campus, to any output. "We needed the freedom of being able to send a signal anywhere we needed it," says Nicolai Gubi Schmidt, system designer and programmer at Stouenborg.

The main presentation area at the LIFE Campus is far from conventional. The Kolossalen (colossal hall) is a cavernous space at the heart of the facility. It can be divided into two, with one side offering tiered flooring and a presentation area, and the other becoming a fully enclosed box for immersive experiences. Content including live camera feeds and immersive videos produced specifically for the space can be projected on all walls.

Part of the LIFE Foundation's commitment is to continually develop and evolve its outreach and it also wanted systems that could accommodate future expansion.
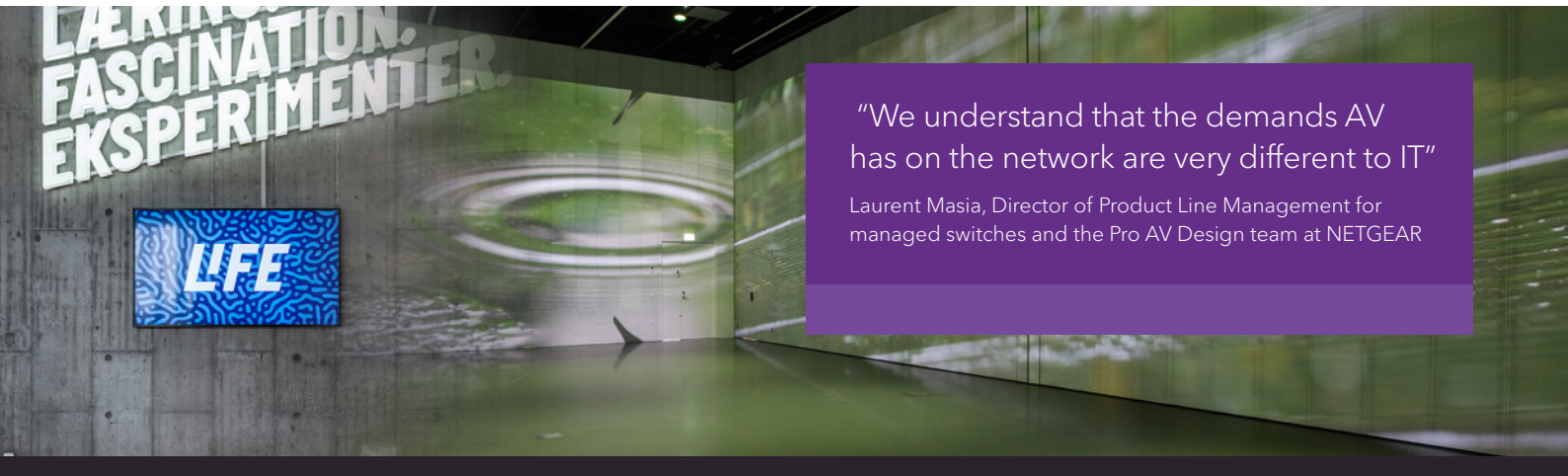
THE SOLUTION

The large site, range of sources and complete source selection flexibility made AV over IP an obvious choice. AV technology throughout the LIFE Campus is connected across a single network with Crestron DM NVX used to distribute signals. NETGEAR M4300 Ethernet switches manage the network traffic. "There are around 600 products connected to the network via 1,120 IP addresses so that gives you an idea of the scale of the project," says Anders Jørgensen, consultant and project manager at Stouenborg.

Stouenborg went through the design process, built racks, and programmed and tested the AV systems in its own workshop before delivering an integrated set up to site. "We'd planned the cable architecture, so that could all be done on site early and then it was just a matter of rolling the racks in a later stage in the building process," says Schmidt.

Due to space limitations systems were built and tested one room at a time in the Stouenborg workshop. It was only when integration began on site that multiple VLANs were connected and everything was up and running on the same network, and that's when problems started to occur. At this stage Stouenborg wasn't using NETGEAR switches, but they would eventually be the key to successful project delivery.

"When we built the system with our first network switch provider (not NETGEAR), everything worked fine in the workshop, but when the systems were installed on site, we had problems with video streams lagging," says Schmidt. "We eventually pinpointed the problem. The network was being overwhelmed with massive bandwidth demands because all video streams were being sent over the network, through multiple switches, to all the devices that might request them. All streams had to be available to all devices, but in a well-managed network, the stream should only be sent to a device when the device requests it."

"We understand that the demands AV has on the network are very different to IT"

Laurent Masia, Director of Product Line Management for managed switches and the Pro AV Design team at NETGEAR

Stouenborg worked out that the problem was with how the switches in the network were operating when traffic had to be sent through multiple switches. "We'd pinpointed the problem was in the switch, but the switch manufacturer didn't understand and couldn't resolve it," says Schmidt. "We tried a second vendor, replaced all the switches, and had exactly the same problem." They soon realized that NETGEAR switches and support were the key to removing the bottlenecks.

Schmidt continues: "When we contacted NETGEAR they understood the problem immediately and told us they had a solution. NETGEAR's confidence and the knowledge their support team had of the AV industry and our requirements convinced us to try the M4300 switches."

Having worked with the NETGEAR switches Schmidt says the product line is easy to set up with friendly GUIs for AV professionals with limited network technology experience. The LIFE Foundation project did call for more complex switch settings to be applied and Schmidt said that NETGEAR support made the process very simple.

"I went through the switch settings with NETGEAR support on a videocall and when we had everything configured correctly, we effectively copied and pasted the settings to the other switches in the network," says Schmidt.

"We understand that the demands AV has on the network are very different to IT," notes Laurent Masia, Director of Product Line Management for managed switches and the Pro AV Design team at NETGEAR. "We have a dedicated line of products ready to meet the demands of AV applications. Furthermore, our service team combines networking knowledge with a wealth of experience from having supported pro AV integrators through thousands of projects."

With the network traffic operating as expected all the preparation that Stouenborg had gone through in its workshop before heading to site paid off. The LIFE Campus was up and running.

RESULTS

The LIFE Foundation is now welcoming school groups from across Denmark to the LIFE Campus, holding events and developing the content and classes it offers to learners. Its formidable creative team now has a wealth of possibilities thanks to Stouenborg's inventive technology installation and they are using the multimedia systems in ever more imaginative ways.

NETGEAR M4300 Ethernet switches are a vital part of the robust network infrastructure that supports these efforts, managing video streaming demands efficiently for the unique educational facility and offering a solid foundation for future developments.

www.netgear.com

life.dk

NETGEAR Inc. 350 East Plumeria Drive, San Jose, CA 95134 | Tel: 1-800-638-4327
NETGEAR SMB Sales Office Tel: 866-480-2112 Option 2 | E: sales@netgear.com

CASE STUDY:
THE LIFE FOUNDATION