Roskilde Festival Introduces State-of-the-Art Network for a Digital Generation of Festival Goers

Summary

Company:

Roskilde Festival

Industry:

Entertainment

Challenges:

- Overhauling an expensive and underperforming festival network while keeping costs to a minimum
- Providing a secure and reliable network that will stand the test of time
- Increasing bandwidth capability to enable simultaneous Web surfing for 20,000+ festival goers as well as streaming festival content

Selection Criteria:

Technology partner, IPnett, recommended Juniper Networks, which provided a stable, flexible, and scalable solution at a very competitive price point.

Network Solution:

- MX Series 3D Universal Edge Routers
- EX Series Ethernet Switches
- SRX Series Services Gateway
- Junos operating system

Results:

- Delivered 10-fold increase in network capacity, servicing 200+ wireless hotspots
- Enabled a rich content experience to be streamed from the festival
- Implemented a future-ready, flexible infrastructure at a competitive price point

At Roskilde Festival in Denmark, the network infrastructure is the backbone of the operation. It not only manages all of the video surveillance, credit card terminals, payment systems, and the IT systems which control the shows, but it also provides Web surfing for its 100,000 festival goers. With an average age of 23, guests truly belong to the digital generation and they expect uninterrupted coverage all across the 3 square kilometer festival site. The previous solution of one-off leased lines was proving too expensive and the performance did not meet growing expectations. Even though the festival only takes place once a year, a more permanent solution was sought.

Roskilde Festival attracts a massive audience, and today it is one of the biggest culture and music festivals in Europe. This year, 180 bands will play on eight stages over eight days. It is organized by a nonprofit humanitarian organization with the help of approximately 30,000 volunteers, and all profits from the festival are donated to national and international humanitarian charity and cultural causes. Since its inception in 1971, Roskilde has donated over €24 million to charitable causes. On the festival scene, Roskilde has achieved cult status with artists such as Bob Marley, The Cure, David Bowie, Coldplay, and many more renowned names headlining over the decades.

Challenges

Roskilde Festival's foundation is run by budget-conscious staff and volunteers, with only 30 permanent paid employees working on the festival. The IT team consists of some 200 people, drawn from the best IT talent in Denmark. Working on the festival has become an enriching and great knowledge sharing experience for its volunteers. Jonas Hauge has a "day job" with TDC, Denmark's foremost telecommunications organization. He has worked on the festival as a volunteer since 2006 and is primarily involved in the planning and procurement of the network infrastructure. "It's a great experience to see the result of months of planning, discussion, and budgeting come to life right in front of you on the stage," Hauge says. "The objective of the festival is to keep on reinventing itself and technology needs to keep up with this if it is to appeal to the young audience. I love the challenge of sitting down each year and working on new ways to engage the audience to give the festival a new edge."

"It was clear that with the increasing pressure on bandwidth every year, we were at the point where we needed to embark on a major overhaul of the network. The infrastructure we have put in place with IPnett and Juniper Networks will enable us to deliver almost anything to take advantage of the rich content coming our way, now and well into the future."

Jonas Hauge, Planning and Procurement, Roskilde Festival

For the latest festival, wireless hotspots were deployed across the site to allow some 20,000 guests uninterrupted Internet access. This, together with the demanding content streaming requirements, meant a 10-fold capacity increase was needed. In previous years, the network infrastructure used to be a temporary one, with leased lines and DSL connections. However, this was providing insufficient performance at a high cost. Cost is incredibly important to the festival organizers and to Hauge personally, in his procurement role: "We always remember that the main aim of the festival is to raise money for charitable causes, and so we have to keep our cost base as low as we possibly can. At the same time, we don't want to compromise on features, as it is vital that we move with the times, to continue to appeal to a young audience. It's a fine balancing act."

With increasing bandwidth requirements each year, the decision was made to make the network infrastructure a more permanent part of the festival grounds, and approximately 10 km of fiber optic cabling was introduced throughout the site, forming the backbone for a flexible and reliable network infrastructure to be built.

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Jonas Hauge, Planning and Procurement, Roskilde Festival

Selection Criteria

To provide the needed MPLS functionality, technology provider, IPnett, recommended Juniper Networks and provided invaluable support during the project implementation. Hauge comments on the decision: "The price performance comparison was very favorable for Juniper. It provided a stable and yet flexible and scalable solution and, crucially, the Juniper Networks® EX Series Ethernet Switches were able to do virtual routing on the same platform, which reduces latency and increases throughput.

Compared to other vendors we looked at, the price point was really quite incredible and we were very pleased with the result. The help and advice we received from IPnett made the whole decision very compelling."

Solution

In the first instance, a deployment of the EX3200 Ethernet Switch with fiber uplink modules was used as part of the permanent infrastructure. This was then expanded with the introduction of the Juniper Networks MX80 3D Universal Edge Router, providing Layer 2 functionality via virtual private LAN service (VPLS) across the festival site. The added benefit is the MPLS functionality which is built into this compact router. Because space is at a premium, large, bulky equipment with noisy fans really don't work, so equipment that can serve multiple purposes is a real bonus. With noise levels in mind, the EX2200-C Ethernet Switch and Juniper Networks SRX210 Services Gateway were also implemented as part of this expansion.

MPLS support was a key feature that Hauge was looking for: "We need to support some 130 cash registers, 400-500 payment terminals, video surveillance, GPS tracking of all our security staff, streaming of show content up to our content providers, Web surfing of approximately 20,000 guests using the wireless hotspots, in addition to ensuring that we are able to effectively support all internal requirements such as e-mail and order fulfillment systems. Different access points need to be on the same network to enable people to move around the festival site easily. MPLS is at the core of this and therefore absolutely vital to us."

Content streaming also provides another revenue source to the festival. With simultaneous performances taking place on three stages, all content is streamed to a partner, who publishes the entire festival online within 48 hours of it taking place, for a subscription fee.

Results

Security is very important at an event like this. Not just the physical security of the video surveillance cameras and the security staff on site, but also network security. To this end, IPnett recommended the implementation of Juniper Networks SRX240 Services Gateways. These provide a cost-effective firewall platform and security between the access points and the Internet. The Juniper Networks Junos® operating system enables network routing, switching, security, and operating services in a single OS, reducing the complexity of the Roskilde Festival network. Running Junos OS also increases network reliability.

"Junos OS allows us to pre-provision routers virtually without needing the physical equipment," Hauge says. "Its scripting capabilities are second to none and the change rollback feature is a really useful one. We have to actively confirm a change, or it will roll back to its previous setting. As people in the team come from all sorts of IT backgrounds, we cannot assume detailed knowledge on any of the tools, so the quicker they can get up to speed, the better. I found Junos OS to be extremely easy to use."

Next Steps and Lessons Learned

The infrastructure built by Hauge and the rest of the team is one which will stand the test of time, as it is completely flexible and can be expanded as and when required. Juniper Networks has introduced a scalable model without complicating the network, delivering an automated and uninterrupted service in a secure manner. As Hauge concludes: "It was clear that with the increasing pressure on bandwidth every year, we were at the point where we needed to embark on a major overhaul of the network. The infrastructure we have put in place with IPnett and Juniper Networks will enable us to deliver almost anything to take advantage of the rich content coming our way, now and well into the future."

For More Information

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