Dutch Internet Service Provider Builds a Virtual Data Center Fabric to Simplify Operations

Summary

Company:

Interconnect

Industry:

Internet service provider

Business Challenge:

Interconnect needed to simplify its data centre network architecture. Maintaining the network required extensive manual operations.

Selection Criteria:

Interconnect looked industry-wide for an innovative data centre solution that was proven in the market.

Technology Solution:

Interconnect selected Infradata to supply the equipment for the Juniper Networks Metafabric Architecture consisting of:

- Juniper Networks MX104 3D Universal Edge Routers
- Juniper Networks QFX5100 Ethernet Switches
- Juniper Networks EX4300 Ethernet Switches
- Juniper Networks Virtual Chassis Fabric

Business Results:

- An open and flexible data centre network
- Low latency, with fewer network 'hops' between any two points
- A highly resilient network architecture

Interconnect

Interconnect is an Internet service provider based in the Netherlands. It provides a broad range of IT solutions including cloud hosting, connectivity, VoIP (Voice over IP) and data center services. Founded in 1995 by brothers Rob and Jeroen Stevens, Interconnect has grown into an organisation with more than 60 employees, and it continues to grow revenues and number of staff quarter by quarter. Its headquarters and first data center is in Den Bosch, and it has a second data center in Eindhoven.

Interconnect's cloud services are based on VMware as a service. It can provide its customers with a single VMware server or a tailored package of compute, storage and resiliency options, even adding load-balancing and firewall services. Its data center and colocation services include a wide range of connectivity options between its data center locations, using Ethernet or Fibre Channel services. It also provides connectivity to its clients' sites, by using its own fibre as well as services from the region's major carriers, and a range of email, telephony and fixed-mobile convergence solutions.

Interconnect provides its services to companies ranging from small-to-mid-sized businesses up to enterprise customers with as many as 10,000 employees, such as sports manufacturer O'Neill and the mobile operator Vodafone.

Challenge

Interconnect's switching infrastructure had grown to a point where it was extremely difficult to manage. With over 200 switches that required frequent manual reconfiguration to create customer VLANs (virtual local area network) across its data centres, service provisioning had become a slow and complex process that was prone to human error. Issues around spanning tree protocol limitations, QoS (quality of service) and latency were also developing. A new, innovative approach to building its data centre network was needed to maintain a competitive edge and satisfy evolving customer requirements.

Selection Criteria

Interconnect met with a wide variety of vendors, inviting them to explain how they could solve these challenges. It was looking for a trusted company that brought innovation to the data centre and was proven in the market. Interconnect had been using other Juniper Networks equipment for many years and had very positive experiences with the company.

Jeroen Stevens, chief technology officer (CTO) of Interconnect, said, "Our approach to business is to say what we do, and we do what we say. It's what our customer have grown to expect of us and what we expect of our suppliers. That sort of integrity in our suppliers is very important to us."

Solution

Interconnect selected Juniper Networks® MX104 3D Universal Edge Routers to build a data center core, and Juniper Networks QFX5100 Switches and Juniper Networks EX4300 to create a Virtual Chassis Fabric. The MX, EX, QFX and Virtual Chassis Fabric are key components of MetaFabric, Juniper's simple, open and smart approach to data center network architecture. The MX104 provides a great deal of capacity and redundancy in a space and power efficient form factor, the QFX switches provide 10GbE connectivity and the EX Series switches are used to deliver client ports at speeds of 1GbE and below. The Juniper Networks Virtual Chassis Fabric (VCF) provides a low-latency, high-performance fabric architecture that can be managed as a single device. It enables operators to interconnect multiple devices into a single logical device, inside a fabric architecture, simplifying configuration and management.

Jeroen Stevens said, "I expect high-performance devices like these to work perfectly, under all conditions. We could have used 'good enough' products that offered us no innovation, or low-end products that wouldn't perform under high load conditions. With Juniper on board, we can have the confidence that our network will do exactly what we expect it to do, every time we need it to."

Infradata, a Juniper Networks Elite partner with a proven track record of delivering Juniper Networks solutions in highly business critical environments offered some advice at the start of the project. Infradata leveraged its in-depth knowledge of the Juniper Networks solution during a sparring session to come to the most optimal solution for Interconnect. Combined with Juniper's JTAC support, expertise and knowledge, Interconnect was assured of a high quality solution.

Results

Interconnect is now benefitting from a simpler, more robust data centre infrastructure, that is open, easy to configure, more flexible and resilient. The Virtual Chassis Fabric provides predictable low latency because it ensures each device is no more than two hops away from every other device in the fabric, regardless of its physical location. It provides a more resilient framework because traffic has multiple path options across the fabric. Most importantly, it is far simpler to manage, as it behaves like a single switching entity and includes an auto provisioning feature, saving cost and allowing more rapid service provisioning. Importantly, all Juniper network elements also share the Junos® Operating System, which simplifies maintenance and upgrades.

Jeroen Stevens said, "Our technical team loves the solution. In essence, we have one big switch that doesn't even have to be in a single room. We have no capacity problems, it's an easy upgrade to 40G and we only have to make one configuration change when a client moves from one location to another."

Interconnect also values the operational benefits brought by off-line configuration and in-service software upgrades. Jeroen Stevens explained, "I know I can do upgrades remotely - we've been doing that with Juniper equipment for more than ten years and it always works - the equipment will always come back on line and we know we can trust it. We also like the off-line configuration mode, which works across the complete product line. We can now do in-service software upgrades as well, which means we have no network downtime at all. It's the only solution I've seen that can deliver everything it claims in this regard."

As Interconnect has migrated its existing customers onto the new Juniper infrastructure it has also solved issues that some of them had previously experienced with packet-loss.

Jeroen Stevens said, "We're really happy with the reliable Juniper equipment, our relationship with Juniper and the support JTAC provide to us. We can discuss new ideas and innovation with both parties and they are always there to provide technical support. Choosing a supplier like Juniper isn't just about an RFP process, it's about getting honest advice and creative ideas."

Next Steps and Lessons Learned

Interconnect is now replacing all of its existing switches with Juniper platforms. Jeroen Stevens said, "This wasn't our original plan but we really liked the VCF, so we decided to replace everything. We realised that it will cost us no more to upgrade to new Juniper hardware than to renew the ongoing support costs on our old switching platform. It's an easy choice!"

Interconnect is also exploring how Juniper's SDN (Software Defined Networking) and vCPE (virtual customer premise equipment) solutions can help it reduce service delivery from days to minutes, and avoid the need for physical network reconfiguration. Jeroen Stevens said, "SDN is going to be really important for us. It's the key to becoming more agile and cost-effective. We expect Juniper's continuous technology innovation to translate into even better services for our customers, and we can carry on delivering what we say we're going to, because we can trust Juniper to do the same for us."

About Juniper Networks

Juniper Networks is in the business of network innovation. From devices to data centers, from consumers to cloud providers, Juniper Networks delivers the software, silicon and systems that transform the experience and economics of networking. The company serves customers and partners worldwide. Additional information can be found at www.juniper.net.

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