



UK OPERATOR TAKES ITS INNOVATIVE NEW NETWORK AND SERVICES NATIONWIDE

Summary

Company:

Virtual1

Industry:

Telecommunications

Business Challenges:

- Build software-defined network reaching over 280 points-of-presence (PoPs) across the UK
- Create a flexible platform that can deliver a range of new services over a single connection
- Enable service automation through a self-service provisioning portal

Technology Solution:

- ACX5000 Series Routers for Metro Aggregation
- MX Series 5G Universal Routing Platforms
- EX Series Ethernet Switches with Virtual Chassis Technology

Business Results:

- Business expansion nationwide
- An award-winning self-service portal
- Lower operating costs
- Greater flexibility to add new customers and services

Virtual1 is a wholesale network provider, operating an advanced network in the UK, delivering bespoke cloud, session initiation protocol (SIP), and network connectivity solutions. Its network interconnects all the tier-1 carriers in the UK and many more internationally, providing its customers with a range of global connectivity options. It sells its services to value added resellers (VARs), system integrators, and other service providers.

“Intelligence and performance are at the heart of our software defined network,” says Tom O’Hagan, founder and chief executive officer at Virtual1, “which, through our [award-winning 1Portal](#), places the control of the solutions directly in our partners’ hands. With the smart integration of our systems, network, and wider ecosystem, our partners can quote, order, and manage their customers’ solutions entirely online.”

Business Challenge

Since its launch, Virtual1 has experienced continuous growth and customer take-up. They first deployed their own network of dark fiber across London, connecting 55 points-of-presence, and delivering a network that could reach over half a million on-net premises. As Tom O’Hagan explains, “Our customers were asking for highly reliable Ethernet services and we thought the best way to do that was to roll out infrastructure close to our customers.”

“We had already deployed Juniper technology,” adds James Hickman, CTO of Virtual1, “but our rapid growth meant we needed a step up in performance and port density. We don’t just sell capacity, we sell ‘clever connectivity,’ providing multiple services over a single circuit including SIP, cloud, Internet, and WAN, so we needed a platform that could provide us with service agility.”

Virtual1 had already deployed Juniper Networks® MX240 and MX480 5G Universal Routing Platforms to build out a high capacity core network, and EX Series Ethernet Switches in each of its PoPs. These were deployed in Virtual Chassis configurations to provide a blend of 100 Mbps and Gigabit Ethernet services.

“We’re a winning business because we can deliver multiple services over a single connection and that’s entirely down to the Juniper platform. It’s been rock-solid with no issues whatsoever.”

- Tom O’Hagan, Founder and Chief Executive Officer, Virtual1

The MX240s also have dual routing engines to provide even greater resilience in the core network, and are also used for internet peering. “Using Juniper’s MX240s prepares us for future growth in the size of the internet routing tables,” explains Hickman. “They can handle these several times over. In fact, now we can even keep two copies in memory using the virtual routing function (VRF) to further increase resilience.”

In its exchanges, Virtual1 built switch clusters into single Virtual Chassis configurations. Using a stack of multiple switches as one autonomous system with mixed devices and mixed ports, but all managed as a single entity, means services can grow as they need to, without being constrained by a certain fixed number of ports in any one exchange. So Virtual1 can add copper-based 100 Mbps ports or Gigabit fiber ports, as and when they are needed.

But to meet customer demand for its services beyond London, Virtual1 wanted to expand its footprint, and decided to extend its coverage to 180 towns and cities across the UK, as well as add further capacity within London. It set out to upgrade its core and aggregation layers to create a national network, reaching a new total of 280 PoPs.

Along with additional coverage and capacity, it was essential that the expanded network continued to deliver a flexible approach for Virtual1 to offer new services.

Technology Solution

Virtual1 selected Juniper Networks ACX Series Universal Access Routers to build its new nationwide network. ACX Series devices are MEF CE 2.0 certified routers that simplify access and aggregation architectures by eliminating unnecessary layers, reducing capital and operational expenditures. The project represents the largest ACX Series deployment in the UK. Specifically, after testing lab testing, Virtual1 chose the ACX5000 for its variety of benefits. Juniper’s ACX5000 are high-performance, high port density, power-efficient metro aggregation routers that support the full feature set of MPLS and Carrier Ethernet. With the ACX5000, Virtual1 can push MPLS out to the metro aggregation/distribution layer so they don’t need to constantly change the core network setup. And they would gain the ability to grow massively with a technical scalability and HQoS (Hierarchical Quality of Service).

As Tom O’Hagan explains, “When we first moved to Juniper, they were less familiar to us compared to our previous supplier, but we felt Juniper was easier to do business with. The technology had a rich set of L2 VPLS services, which were cost-effective and robust and so we felt we could grow with Juniper. They were fantastic at helping us design the infrastructure, keen to work with us and were there to support us all the way through. We realized this was going to be an important long-

term relationship.” Beyond performance, Virtual1 was also looking for operational advantages over its competitors, with innovative solutions that could drive down costs, which could be passed on to its customers.

As James Hickman adds, “The equipment is located in a range of environments. But we can just rack it up, lock the door, and walk away, knowing it will keep working—which helps keep our operating costs low. We are confident in Juniper and now we can pass that confidence on to our customers across the UK.”

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Business Results

Virtual1 can now offer its advanced service across the UK, using its own software defined infrastructure. Juniper’s platforms have delivered all the flexibility and performance that Virtual1 was originally looking for, and have now enabled it to continue to grow its business to the next level.

Tom O’Hagan explains, “Working closely with both our reseller and carrier partners, and understanding the challenges they face in their businesses, I saw the opportunity to disrupt the status quo in the connectivity market by elevating Virtual1 to be a true alternative UK-wide carrier. As our wholesale-only network will be fully software-defined, our partners will have complete control of the solutions that we provide for them through our 1Portal. This is a UK first and it is intended to raise the service standards that UK businesses should expect from their suppliers.”

“Our new network is very flexible, giving us all the options we wanted,” adds Hickman. “Our capacity had been limited by the other backhaul carriers, but now we have our own ports local to our customers, all across the UK. Ultimately, we got greater capability per pound spent with Juniper than we would have got from any competitive platform.”

Next Steps

Virtual1’s network continues to grow. “We’re a winning business because we can deliver multiple services over a single connection and that’s entirely down to the Juniper platform,” adds O’Hagan. “It’s been rock-solid with no issues whatsoever. And the Juniper team was very supportive throughout. We felt like our roll-out was as important to them as it was to us.”

“We can deploy a new virtual switch chassis whenever we want,” Hickman adds. “We are stepping up our 10G port capacity, but even if we hit limits on a single chassis, we can scale ‘sideways’ by adding more MX240s without service disruption. In fact, this also allows us to increase service resiliency by connecting customers to multiple systems.”

Virtual1 sees the network as a key enabler to the delivery of new cloud services, as Virtual1’s software automation and Juniper’s network architecture leave it well-placed to take advantage of open SDN control.

“At the end of the day,” Tom O’Hagan concludes, “it’s all about delivering our brand promise—building long-term relationships based on trust and credibility. Technical excellence is fundamental and Juniper Networks helps us deliver that to our customers.”

For More Information

To find out more about Juniper Networks products and solutions, please visit www.juniper.net.

About Juniper Networks

Juniper Networks brings simplicity to networking with products, solutions and services that connect the world. Through engineering innovation, we remove the constraints and complexities of networking in the cloud era to solve the toughest challenges our customers and partners face daily. At Juniper Networks, we believe that the network is a resource for sharing knowledge and human advancement that changes the world. We are committed to imagining groundbreaking ways to deliver automated, scalable and secure networks to move at the speed of business.

Corporate and Sales Headquarters

Juniper Networks, Inc.
1133 Innovation Way
Sunnyvale, CA 94089 USA
Phone: 888.JUNIPER (888.586.4737)
or +1.408.745.2000
Fax: +1.408.745.2100
www.juniper.net

APAC and EMEA Headquarters

Juniper Networks International B.V.
Boeing Avenue 240
1119 PZ Schiphol-Rijk
Amsterdam, The Netherlands
Phone: +31.0.207.125.700
Fax: +31.0.207.125.701

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