

# D-Link case study

Stone computers meets rising customer demand



➤ New D-Link network helps Stone Computers meet rising customer demand whilst delivering an improved level of service.

PC maker upgrades office network for VoIP and PC production for greater throughput; customers are the winners, as it more than doubles output in busy summer period.

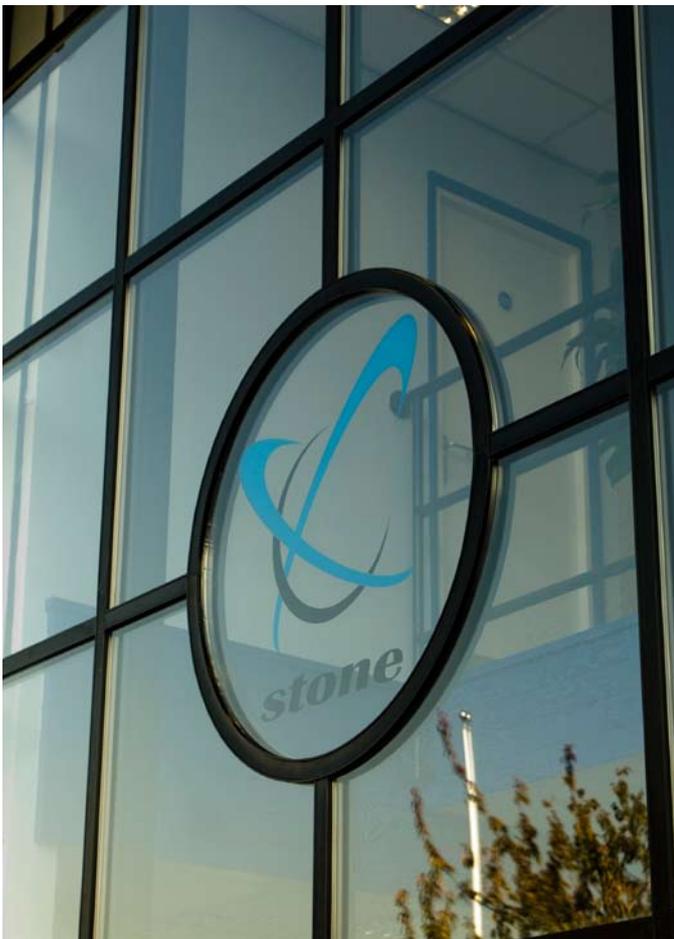
## Background

There aren't many PC manufacturers left outside the tier one suppliers, but those that do survive differentiate themselves on the service they offer, carefully tailored for a particular niche market. Stone Computers is such a company. A PC and laptop manufacturer dedicated almost exclusively to the UK public sector, it has been serving organisations in the education sector, local government, and emergency services since 1992.

With up to 110 employees at HQ, the company also has 30 engineers on the road and a further office in Aylesbury with another 30 people focusing more on server and High Performance Computing (HPC) solutions. Not surprisingly, it's a slick, efficient operation with parts coming in from China and America and hundreds of PCs shipped out every day manufactured carefully to customers' requirements.

IT Manager Chris Morris explains how customer service is the lifeblood of this thriving business.

**“One of our USPs is the service we offer. That's what's kept us where we are. We deliver our own kit and where possible we offer next day response with an engineer on site, and three years warranty as standard.”**



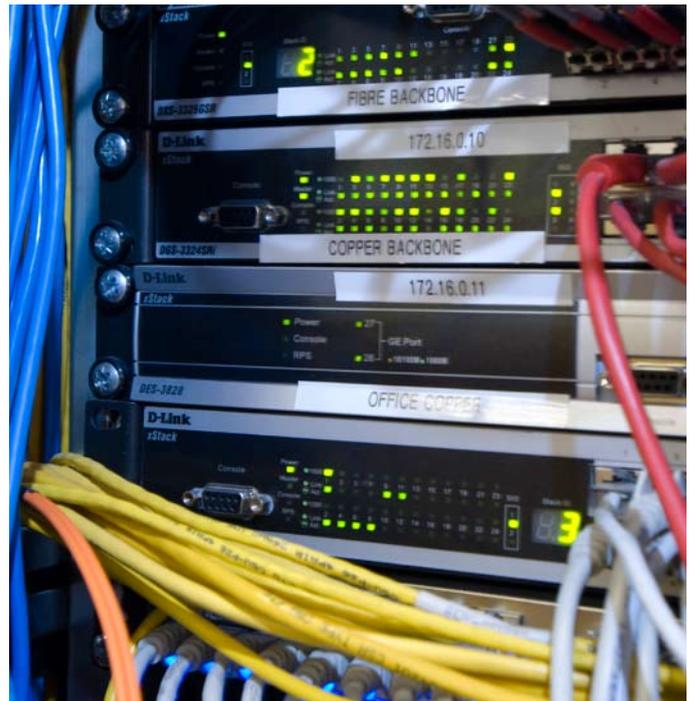
## The problem

Stone, a D-Link reseller for a number of years, had previously used a D-Link 6000 chassis switch as part of its network backbone, together with a number of hubs and switches around its Stone HQ. Last year it was looking to upgrade its phone system to a new voice over IP set-up from Mitel. This was designed to facilitate the link to its Aylesbury office and to bring in new features such as call centre capability and teleworking.

To support the new system, it needed Layer 3 switching and VLAN capability so phone traffic could be prioritised and performance guaranteed. In addition, it was looking to increase the capacity on its other main network which supports its PCs in production. Stone operates a system called Eurosoft, which automates the quality control testing. Machines are plugged into the network and Eurosoft compares the bill of materials with what's actually in the box and runs a hardware test on all the different components. It then downloads the appropriate operating system, whether that's Windows Vista or some bespoke system designed specifically for the customer.

Morris explains: "It's a fairly automated procedure; the systems are PXE booted into Windows PE over the network, where we perform an asset check to verify what's in the system with what we've sold on the sales order, we do a series of hardware tests on the components, put the operating system on, and give the QC guys a red or green screen for a fail or a pass."

But as with any production line automation, capacity could be an issue particularly at peak periods. In the public sector, organisations frequently look to upgrade hardware in the summer period when the children are on holiday and things are quieter. That could create bottlenecks in the process and Stone was looking to increase throughput.



**Morris says: "The old phone system couldn't cope with the volume of calls. We were also updating for the new features such as teleworking so people could take their work home and plug it into an ADSL line and carry on working as if they were in the office."**

## The solution

Stone has installed what are effectively two new networks. The main network uses the DGS-3324SRI, DXS-3326GSR and DGS-3324SR xStack Layer 3 Managed Switches for the central server stack with 10Gb between them. These run 1Gb fibre out to various cabinets and patch panels around the building. On the sales floor six 10 seater-pods each have a DES-3828 switch, each providing networking for 10 phones and 10 PCs.

There are also 5 other DES-3828, and 2 DES-3226S switches around the building, again with a Gigabit uplink to the central stack.

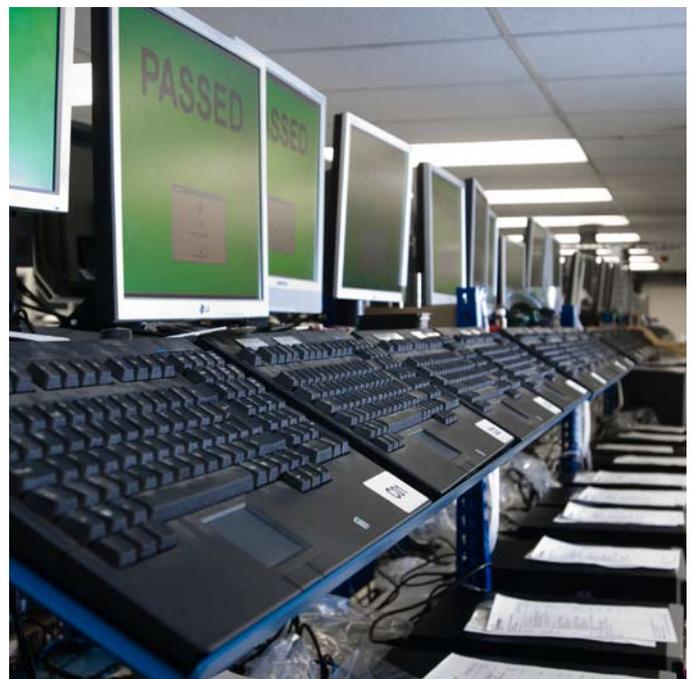
Meanwhile, in the QC area, another DXS-3326GSR and a DGS-3324TGR run the production server backbone, with a further 15 switches under the QC benches, comprising 5 DGS-3024, 7 DGS-3324TGR and 3 DGS-3324SR switches, with fibre connecting them to the backbone, running testing software and downloading operating system images from a 5Tb storage array. The PC network can now test 224 machines at a time with a Gigabit to each machine.

Morris explains that the key to the performance of this new set-up in the testing centre is the pattern in which the switches are connected.

With the older switches daisy-chained from one to the next it only had a 1Gb link between any of the switches, or 2Gb duplex. With the new set-up, speed is increased, the PCs can be pulling images from different servers and each bench of 16 PCs have each got their fibre link back to that central location.

Morris says reliability has been good on the voice over IP network too.

“Touch wood it’s been very good. We’ve set up a couple of VLANs on the switches to keep the voice and data traffic separate which is easy to do and it’s been rock solid. We’ve got a couple of firewall appliances, one in Stone and one in Aylesbury with a site-to-site VPN, and people can actually make calls from their desks down there without needing a phone system on-site.”



**“Before, we were using a smaller number of the same switches. That’s why some are older than others, and they were linked over a single gigabit link to one central switch, so we were cascading the switching from one central location. Now we have a star topology to the centre.”**

## Benefits

The benefits of the new networks in productivity are plain to see. Once the PC production network had been installed, Stone shipped out 17,000 machines in August, more than double the number it could produce the previous year. That's down to the increase in capacity in the assembly and testing areas as well as the increased network efficiency.

**“The throughput is probably 20% faster,” says Morris. “We’ve increased the number of machines on test from 120 to 224, so we’re able to almost double the amount we are getting through at the same time.”**

On the office side, it had to install the new network anyway, but the additional features have also improved productivity. For example, as well as remote working,

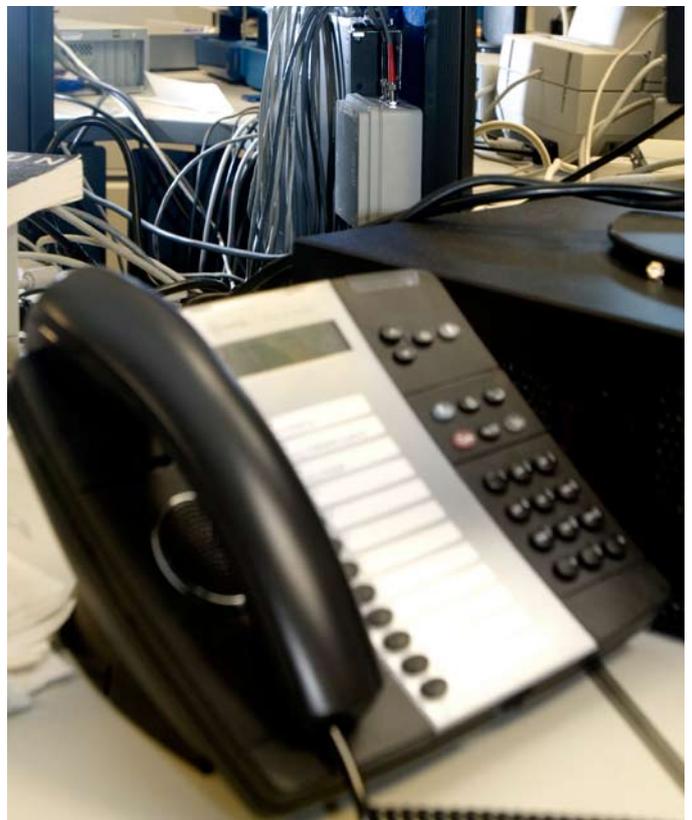
Morris says: “Our people can log in at any phone and that becomes their extension for the day so it effectively enables hotdesking.”

He adds that bandwidth is not a problem: “There’s a lot of bandwidth management options to compress the call quality even down to ISDN 128k level. The main drain was the link up to the VPN, so we upgraded the leased line and at the same time we switched over to terminal services environment to save bandwidth.”

D-Link was an obvious choice for Stone and Morris points to three of the selling points that help make D-Link a success, “the range of products – we also sell a lot of wireless access points; the price points are fairly attractive; and the quality is very good, particularly on the high level enterprise switches we use.”

Stone now believes it has the infrastructure for the next stage in its growth and although network infrastructure may not be something that’s visible to customers, they’ll see the impact in improved efficiency and effectiveness.

“We’ve put in the building blocks for the next five or six years which is as long as expected for this kind of technology to last.”



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