

London 2012 equipment recycled for World Wildlife Fund's head office News, p2↔

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# **Government Smart Cities plan** ignores network infrastructure

#### by Ian Grant

The government is to spend close to £180m in pursuit of a 10 per cent share of a global \$400bn market for Smart City technologies. But the report on which it is basing its investment fails to address the network infrastructure that is expected to support it.

The report, by consulting engineers Arup, outlines the benefits of "smartening" water, waste, energy, transport and assisted living in cities. It adds that UK firms could earn billions exporting Smart City technology and skills, but nowhere does the phrase "communications infrastructure" appear.

Department of Business, Innovation and Skills officials said Research Councils UK is spending around £95m on exploring smart city concepts. In addition, the Technology Strategy Board is setting up a Future Cities Catapult in London and will

invest £50m over five years. It has already spent £33m on future city demonstrators that were carried out earlier this year.

Other government-funded projects include transport schemes to promote intelligent systems and smart ticketing, the roll out of telecare and telehealth in the NHS, and the introduction of smart meters by 2020. Telefónica and Arqiva will get more than £2bn for standalone networks to carry the UK's smart meter data traffic (see News, July/August). This raises questions over the fitness for purpose of the broadband networks now under construction.

Many Smart City projects will rely on real-time data flows and responses with redundant links where human safety is a factor, such as traffic control. This implies





using a different network from the shared 'best efforts' networks now being rolled out, where contention and latency may disrupt operations.

CityFibre is about to invest £30m in a fibre backbone network in Peterborough (see p4), and the city's immediate priority is to make fibre available to its business community and public sector. COO Mark Collins says: "Peterborough councillors are forward-thinking, and Smart City projects are integral to our discussions with them." He expects wireless, especially Wi-Fi, to overlay the fibre network and become a key component of many Smart City initiatives.

Mani Manivannan, an associate with Arup, says telecoms providers and technology suppliers will be key stakeholders and actors in Smart City deployments. He believes that only a few may need more rigorous performance measures, and that it is likely that nondeterministic protocols, such as Ethernet TCP/IP, will support the majority of applications, with some smart grid services needing deterministic protocols.

"The economics of delivering TCP/IP and its historical omnipresence in networks - such as municipal and public Wi-Fi access, xDSL and cable, trunked public telecoms, and over 3G/LTE - mean that many applications will leverage this, rather than require more expensive or harder to deliver deterministic protocols," says Manivannan.

(continued on p2)

## LSE turns to NexxCom for fasterthan-fibre wireless network

The London Stock Exchange (LSE) has bought a NexxCom Wireless low latency millimetre wireless network to connect its City data centre with Equinix London in Slough. It hopes the deployment will help it cope with high-frequency trading traffic.

The link uses the specialist ultra broadband network vendor's third generation proprietary radio technology to cut latency to under 300 microseconds - claimed to be 30 to 40 per cent faster than fibre - and provide a total throughput capacity of 1Gbps for clients. The service, which will be shared among traders, is due to go live in November.

LSE head of IT business development Nigel Harold says the NexxCom deal shows the LSE's commitment to meeting demand for customer wireless communication services. "It will allow participants to manage activity more efficiently across multiple venues," he said.

NexxCom founder and chairman Sal Benti adds that the LSE deployment is likely to be the start of a Europe-wide network of low-latency links.

## TechCity gets 300Mbps wireless network

TechCity, London's digital innovation hotspot near Old Street, will be the first area covered by EE's new 300Mbps LTE-Advanced (LTE-A) network. Just hours after CEO Olaf Swantree announced this at a London conference earlier this month. EE launched what it claims is the world's first petabyte mobile data package, offering cheaper rates than fibre for big data transfers.

The 300Mbps 4G network covers TechCity from launch, and will be rolled out across London throughout 2014. Next

month, the operator will choose firms from the TechCity area to test the service before compatible devices have their commercial launch in mid-2014.

EE's move follows news that BT has teamed-up with TechCity business incubator TechHub to launch a BT Infinity Lab programme. They will create broadband applications that BT will sell alongside its existing products. In 2011, Virgin Media trialled a 1.5Gbps network in the area which led to it doubling the

speeds on its broadband network and the development of a 152Mbps service which it plans to introduce next year.

Speaking on the anniversary of EE's launch of 4G, Swantree said his firm expects UK data usage to rise 750 per cent by 2017. He said capacity in the LTE network enables mission-critical, high-data business applications such as ERP and SAP to become cloud-based, improving flexibility. Financial institutions that often transfer large volumes of data could also benefit, he said.

that increased bandwidth across the network also enables a new approach to outside broadcasting as a small number of 4G SIMs can replace an entire satellite truck and the rental of a satellite connection. However, he believes the 'killer app' for high-speed broadband is 4K television. While the BBC *iPlayer* streams at 5Mbps, 4K TV will stream at 20Mbps. "A consistently high average speed, enabled by sufficient capacity on the network, is essential," said Swantree.

## Smart Cities infrastructure

#### (continued from p1)

"Some performance tolerance will be made acceptable, and 'pseudo' deterministic performance will be acceptable. Indeed, there are adaptations to Ethernet (TCP/IP) to allow this.?

Mobile operators are staking out the Smart City market. Vodafone and Telefónica have ambitious plans for M2M (machine-tomachine) communications, which are the bedrock of Smart City projects. But cellular networks are expensive and poorly suited to the task, according to William Webb, CEO of the Weightless Special Interest Group.

He is the standard bearer for the Weightless protocol, originally developed by Neul and now in the public domain as an open source standard."Weightless is the only data pipe that has been specifically optimised for global, long range, infrequent transmission of small data packets generated by M2M applications," claims Webb. "[It] is frequency-agnostic and can

use white space spectrum available within the gaps between TV transmissions.

Government efforts to get high-speed city networks have been somewhat frustrated. As part of its £150m SuperConnected Cities project, it had planned to have metro networks in 22 cities that could deliver FTTP as well as support public utilities. But this was changed following a threat of litigation by BT and Virgin Media to a scheme that allows businesses to apply for grants of up to £3,000 to pay for a highspeed broadband connection to premises (also see September feature, p10).

BDUK ran a £2.25m pilot of the revised scheme from the start of August to the end of September in Belfast, Cardiff, Edinburgh, Manchester and Salford. There were 690 grant requests of which 443 conditional offers were made and 12 rejected, leading to 240 quotations from 28 suppliers. BDUK says this was a "success", adding that late applications are still being processed. 



## WWF recycles IT for new HQ



Sustainable wood and alass maximise the use of natural liaht while the curved roof aives total flexibility in adapting to new work patterns at WWF's new HQ in Woking, Surrey. PHOTO: IAN GRANT

Network equipment used for the London comms are via Jabber, Cisco's UC app, Olympics has been redeployed to showcase the World Wildlife Fund's conservation ethic at its new head office in Woking.

The £20m HQ, much of which is open to the public, is said to be the epitome of green working practice. It features extensive use of wireless networking (backed up by Cat6) to support hot-desking, BYOD, BYOA (apps) and CYOD (choose), video conferencing to cut travel, energy from solar and geothermal sources, and wide use of natural light.

The equipment was refurbished by Cisco and the installation managed by reseller Dimension Data. It includes a 6500 core Ethernet switch supported by 3750 edge switches and ASA 5500 firewalls.

There are only 180 desks for the 300+ staff at the building plus 150 meeting room spaces. Just four shared printers help minimise paper usage. Desk phones are a thing of the past as all voice and message which encourages people to work remotely, saving carbon miles. The office uses Citrix to support remote workers, but may switch to the Cisco AnyConnect VPN client.

WWF-UK's head of IT, David Southern, said the idea was to match the organisation's deeds to its words, and to have the entire building provide a model for a more sustainable way of living and working, both as a testbed for new ideas, and as living proof of what can be done.

It has also led to innovation. The architects refused to have wireless access points cluttering the clean lines of the building, so Cisco's UK engineers designed and built about 80 unique APs that are flush-mounted in the metal floor.

Southern says that when the building opened, it took just 60 minutes for all the staff to be connected and working, thanks to the wireless network.

## Gatwick selects Fujitsu and Cisco in a bid for top-flight status

London's Gatwick Airport, which already has the world's busiest single runway, is using a Cisco-based unified communications system hosted by Fujitsu as part of a five-year development project to make it the premier entry point to the UK and Europe.

Led by its incumbent telephony supplier Xchanging, Gatwick is initially setting up voice, video, IM and presence services for 1,100 staff , before extending them to all 2,500 end users and commercial customers.

The rollout began in September and uses Fujitsu's Cloud Connect Collaborate solution (CCC) that runs in the company's data centres in north and south London. *CCC* is a hosted voice and collaboration service and is in turn based on Cisco's Hosted Collaboration platform.

'Each of the staff will be contactable via a single number, regardless of their chosen device," says John Keegan, Fujitsu's director of networks. "A device-agnostic service provides a much greater degree of flexibility, meaning users can take calls from mobiles, smartphone or laptop-based software clients, and fixed phone lines." He adds that voice and video services will be routed through Cisco's Jabber client.

Keegan declined to comment on whether there are plans to use Wi-Fi or how Gatwick will manage security and authentication. But he did point out that shifting to the cloud will give Gatwick flexibility and consume services as necessary. This will help to cut costs, improve productivity, and ensure business continuity for the airport.

## C4L's game-changer for carrier networks

C4L has launched a carrier grade MPLS network, claiming it will reduce network and data centre (DC) installations from months to days, and enable users to introduce products and services to market faster and more efficiently than before.

coreTX is the result of a year-long, multimillion pound project by C4L to update and develop its infrastructure. It is designed to deliver terabyte scalability with "very low" latency on all links, offering on net MPLS/ VPLS connections at speeds of 1Gbps, 10Gbps and 40Gbps. "C4L recognises that traditional networks offering 100Mb and 1Gb circuits are no longer suitable. There is a clear desire and need for 10Gb as a standard, with a straightforward upgrade path to 40Gb and 100Gb," states the firm.

*coreTX* is described as a "true any-to-any network", meaning all partner interconnects can be delivered in all PoP locations. The core network connects over 55 PoPs nationwide, but can access multiple carriers' fibre networks that allow it to link to hundreds more. C4L says this gives users access to thousands of service providers and DCs all from a single port, with same day provisioning at many locations.

The network features high-end switching and equipment including Juniper's MX transit routers. C4L founder Matt Hawkins says it will support future networking innovations such as SDN – for example, the



C4L founder and chairman Matt Hawkins launches coreTX. He says the new high-speed network gives customers access to thousands of service providers all from a single port.

software upgradeable Juniper hardware is compatible with OpenFlow standards.

C4L operates a privately owned 1-100Gb capable dark fibre network that uses a diverse backbone and DWDM colocation. technology. It offers connectivity, cloud and communication services from a data centre in Bournemouth. but also has access to more than 100 DCs in the UK and more than 300 globally.

## Stirling Council achieves rural connectivity with help from TNP

Seventeen schools, two libraries, and three rural public service sites have been connected to Stirling Council's highcapacity network via a high-speed link for the very first time. As part of a pioneering project carried out by The Networking People (TNP), the council now has its own carrier-class network.



It comprises microwave radio, switching equipment, and redundant power supplies. TNP has replaced unreliable ADSL lines, building on Stirling's existing infrastructure to provide the council with around 30 per cent cost savings compared to an equivalent fixed-line solution.

For the first time, urban and rural schools across Stirling now have access to cloudbased resources, IP telephony and video conferencing. As an example, the Milton of

TNP director Chris Wade on-site at Loch Venachar. He savs his firm was able to offer the council asset ownership of the network, as well as cost savings by integrating existing infrastructure.



#### THE WORLD ACCORDING TO... Philip Badman, director, New Horizons London

#### Moving beyond the helpdesk: the changing role of the IT professional

The rapid rate of changes in technology has placed new demands on IT professionals to upskill and retrain or risk being left behind. Despite this, there is a growing gap between the speed technology is advancing and the uptake of IT training.

Research has revealed that 50 per cent of CTOs recognise there is a skills gap holding back their business (according to IDC). In addition, a new report published by the UK Commission for Employment and Skills says that cloud computing, mobile technologies and cyber security are creating demand for deeper and more specialised IT skills.

Cloud computing and BYOD have brought many advantages, but there are IT challenges relating to data security and new modes of working. Consequently, network professionals need access to training that will equip them with the skills to keep up with the pace of technology.

As companies move to cloud-hosted services, maintenance, repair and upgrade services will be increasingly delivered by the provider. This is driving a switch in emphasis from support to innovation. For example, internal departments are being rerouted to look at the benefits mobile devices can bring to their businesses and

the security and logistical challenges this poses. In addition, the growth of networks has created a shortage of people who are able to build, design and maintain the infrastructure needed to communicate and do business.

For example, advances in Cisco's technologies create new skills requirements for network professionals, meaning it is quickly becoming some of the most valuable training in the IT field. Formal training on Cisco technologies can lead to higher productivity among teams as they make fewer errors than those who receive on the job training. For those looking to enter the IT industry and take advantage of the growing sector, Cisco training is also a way to gather skills that are valued by employers.

In summary, advances in technology create new opportunities for IT professionals who are trained to embrace the benefits they bring. As the role of the IT professional continues to adapt to the ever-changing technology landscape, training is the best way to future-proof a business and is the only way to close the skills gap in the industry. Philip Badman is also deputy principal at Newham College of Further Education.

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Buchanan primary school went from a 512kb to a 10Mb broadband connection.

"This is something that could only be achieved cost-effectively through the expertise of TNP and not the traditional ISPs," says Alan MacDonald, Stirling Council's ICT infrastructure manager. "At the same time, we have gained increased network security and improved visibility." MacDonald says that the schools now

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**19,679** 1 Jul 2011 30 Jun 2012

have much more responsive access to the county's cloud-based schools management system which in the past had been slow and difficult to connect to.

TNP is continuing to extend the network to other sites in the region. The project has meant that Stirling Council has already met government targets to provide access to high-speed broadband in rural areas, well ahead of the delayed 2015 deadline.



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### G-Cloud 4 attracts record submissions from suppliers

*G-Cloud 4*, the fourth supplier framework for the procurement of government cloud services, went live on 29 October. According to the Cabinet Office, even more SMEs now have the opportunity to win government business. There are 999 suppliers on the new framework compared to 700 in the previous procurement. The total number of suppliers with services in the *CloudStore* are now 1,186 of which 84 per cent are SMEs. The Cabinet Office adds that cumulative sales from the store broke the £50m million barrier in September, with 58 per cent of the £53.5m total spend having gone to SMEs. The *CloudStore* now offers more than 13,000 services. ■

## EE to provide BT with MVNO services

As part of an exclusive multi-year contract, EE will provide mobile virtual network operator (MVNO) services to BT's customers and staff. BT currently provides a range of mobile services mainly to enterprises and the public sector, while for consumers it has a major Wi-Fi presence that it plans to build upon. The firm employs around 88,000 staff worldwide and decided to seek a new mobile partner earlier this year. It says it will "carefully manage" the change from its current MVNO, Vodafone, in order to ensure a "seamless" transition for customers. Neither BT nor Vodafone have publicly stated any reasons for their split. ■

#### Siemens Enterprise Communications becomes Unify

Siemens Enterprise Communications has re-branded itself and will now be known as 'Unify', with Hamid Akhavan continuing as CEO. The firm says the launch of the new brand builds upon momentum gained from *Project Ansible*, its new communications and collaboration platform launched last year. Unify says it has now accelerated the timeline of *Ansible* with customer deliveries expected to begin in July 2014. The platform will be first available as a SaaS offering designed to complement Unify's *OpenScape* solutions as well as enterprise telephone systems from peer competitors. ■

# Pulsant hosts internet exchange for Scotland

Colocation specialist Pulsant is hosting Scotland's first dedicated internet exchange point (IXP). At the end of October, it was announced that IXScotland is now fully implemented and was just days away from seeing its first internet traffic.

The IXP was developed by the London Internet Exchange (LINX) and is hosted at Pulsant's South Gyle data centre in Edinburgh. It is a single node IXP and uses switching gear from Extreme Networks that functions independently of LINX's networks in London and Manchester.

IXScotland is managed in consultation with a local steering committee of connected member networks that includes Brightsolid Online Technology, Xtraordinary Networks, Fluency, Onyx Internet, and M247. Pulsant says the new IXP will ensure that the region's ISPs can quickly and securely deliver traffic to one another, resulting in businesses and consumers having access to better connectivity with reduced latency and improved resilience.

According to LINX CEO John Souter, IXScotland is a "real step forward" not just for the internet community in Scotland but for the UK as a whole: "The exchange will allow networks to stop so-called 'tromboning' traffic to London and back again, and will help increase resilience by creating a new centre for interconnection in the UK."



Speaking at the launch last month, Scottish Government finance secretary John Swinney said that IXScotland is a another step towards his country becoming a "world-leading digital nation by 2020".

Pulsant owns and operates a 10G core network connecting its 10 nationwide ISO 27001 compliant data centres, of which certain sites are also ILS2-, ILS3- and PCI-certified. The company now plans to work with individual ISPs and organisations that will use IXScotland and its data hosting services to assist in building a larger connected network.

## CityFibre to make Peterborough a "Gigabit city"

A city-wide pure fibre optic network promises to deliver gigabit connectivity speeds to residents and businesses in Peterborough. The new infrastructure will be paid for by a wholly private investment of up to £30m by CityFibre.

The company, which claims to be the UK's largest independent fibre optic infrastructure provider to smaller cities and towns, is currently considering investments to create 'Gigabit cities' in a number of locations across the country.

It says that a Gigabit city provides local businesses, carriers, ISPs and the public sector with access to a future-proof fibre infrastructure that will deliver substantial bandwidth capacity, an ultra-fast user experience, and significant cost and service advantages.

CityFibre says it selected Peterborough as part of its Gigabit cities vision because of its "attractive" high growth business, residential and public sector markets, as well as its "progressive and ambitious" local authority. It adds that Peterborough is one of the UK's fastest growing cities with a record 1,400 SMEs launched in 2012.

Peterborough City Council has developed a framework agreement with CityFibre to meet strategic objectives in the delivery of gigabit speed services. CityFibre says it will be implementing the metro network to its own "high capacity" specification, offering internet connections with speeds of up to 1Gbps, approximately 40 times faster than current superfast broadband. It will initially invest in more than 90km of fibre, ensuring the new network passes 80 per cent of Peterborough's businesses.

CityFibre CEO Greg Mesch explains: "The first stage of our deployment will include the major commercial districts of the city, covering over 4,000 businesses, all of whom will benefit from gigabit level speeds and services. The second phase will bring that same level of speed to up to 60,000 homes, making Peterborough a truly Gigabit city."

## WatchGuard secures Leeds City College network

Leeds City College (LCC) has deployed WatchGuard Technologies' unified threat management appliances across a WAN that connects three large campuses with fibre circuits and microwave point-to-point links.

LCC is said to be the UK's third-largest FE institution and was formed following the merger of five local colleges. It now has 40,000 students and more than 1,500 staff.

This major expansion posed considerable challenges for LCC's IT department – not least of these was securing three major points of connection to JANET, the UK's research and education network. To solve the problems, the IT team decided to standardise on WatchGuard's integrated, multifunction security platform with the help of its IT partner Epic Net. It deployed three *WatchGuard XTM 1520* appliances: one has replaced an existing firewall at the Technology campus to deliver greater performance and control; a second unit is at the recently opened Printworks campus; while the third appliance has been installed at LCC's Park Lane site.

WatchGuard says its platforms provide safe IPSEC or SSL VPN authorised remote access to the college network and resources for all staff and students using Apple, *Windows* and *Android* devices. It says that in addition to providing full Layer 7 firewall protection and intrusion prevention, LCC now has a central point of management, with the ability for policies to be easily deployed across the network. It also benefits from simplified administration and centralised logging and reporting.

With up to 14Gb throughput, it's claimed the XTM appliances will be able to cope with anticipated bandwidth growth over the next five years as well as the addition of increasingly complex rule sets, without loss of performance. WatchGuard adds that the clustered hardware configuration provides 100 per cent resilience.



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APC's 'Cloud in a Box' – or should that be 'box in a cloud'? The firm says it's been a "little tongue-in-cheek" with this rather literal depiction of its sound-proofed enclosure that houses all the components needed to maintain cloud connectivity.

## Off-the-shelf cloud is always on

APC has developed ready-made portable infrastructure designed to connect remote and branch offices to the cloud. The firm claims its unique *Cloud in a Box* solution enables rapid rollout of unified computing architectures while optimising office space and business productivity.

Inside each secure and sound-proofed enclosure, APC says users will find all the components needed to monitor and maintain effective cloud networking connectivity. This includes: a versatile 19-inch server rack; "powerful, quiet and low energy" ventilation; a basic PDU; a *Smart-UPS*; environmental monitoring; access logging and surveillance; plus dust ingress protection. The company says this is all aimed at ensuring business continuity through issue anticipation, alerts, remote control and redundant power.

"Protecting your connection to the cloud from downtime is essential," says David O'Coimin, solution offer manager for APC parent company Schneider Electric. "A lost connection puts everything on hold and a stalled business haemorrhages money while the problem is fixed. The best approach to take is to mitigate against the down event in the first place."

According to APC, as virtualisation takes hold and organisations migrate their IT to the cloud, physical IT on premises is shrinking, particularly in remote, branch and SME offices. It says this poses challenges for businesses in the form of, among others, space utilisation, right-sizing of cooling capabilities, and adjustments to power and redundancy configurations.

O'Coimin adds that externally, the *Cloud in a Box* looks like an office cabinet, and once it is built it will "fade from sight, disappearing among the furniture."

## FICO and Cloudera enable Big Data processing and analysis

FICO has teamed up with Cloudera to provide a Big Data platform for the *FICO Analytic Cloud*, an environment for creating, customising and deploying analytics-driven applications and services.

Both firms are specialist software providers – FICO (formerly known as Fair Isaac) develops tools for predictive analytics and decision management, while Cloudera offers enterprise-grade Apache Hadoop data management, support services and training.

The FICO Analytic Cloud will run Cloudera Enterprise. This includes CDH, an enterprise-ready, open-source Apache Hadoop distribution platform, and Cloudera Manager, an end-to-end management application for Hadoop. FICO says these technologies will help spur Big Data innovation in the *Analytic Cloud* by giving application developers, business users, and its partners the ability to process, analyse and act on vast amounts of data.

It's claimed that *FICO Analytic Cloud* will now enable users to leverage Big Data to solve problems that were previously thought to be unsolvable. FICO says it is "knocking down" the barriers to finding insights quickly in new and emerging types of data, and by using technologies like Hadoop and Cloudera its clients, partners and developers will be able to rapidly consume, contribute to and collaborate on innovations in a cloud environment.

# BSI names first two companies to win CSA STAR Certification

HP and Pulsant have become the first firms to be awarded STAR certification under the BSI and Cloud Security Alliance (CSA) scheme set up in September (*see last month's News*).

BSI risk management specialist Suzanne Fribbins says that by gaining accreditation, HP and Pulsant have demonstrated their dedication to providing a secure cloud service. "Obtaining this certification creates a transparency in the industry that will help consumers and businesses to evaluate the performance of a cloud service provider and offer reassurance that specific cloud security risks have been addressed."

To gain STAR certification, a service provider has to have achieved ISO/

IEC 27001. It is then is assessed using 11 control areas (as specified in the CSA Cloud Control Matrix) and judged for maturity levels according to five management principles.

HP and Pulsant each attained a *Silver* level following the BSI's independent assessments. The highest level is *Gold*. As with all STAR certified firms, the two companies will now be listed on the CSA STAR Registry of approved organisations.

The BSI points out that no certification can ever guarantee information is 100 per cent secure. But it adds that ISO/IEC 27001 combined with STAR Certification ensures a cloud provider has an appropriate system for the type of data it is handling.

# Cloud-IX offers sophisticated choices and no vendor lock-in

TelecityGroup has launched a platform that is claimed to enable customers to "fully leverage" the potential of the cloud. In particular, it says *Cloud-IX* will allow customers to maximise the efficiency, flexibility and security of the hybrid cloud.

By using *Cloud-IX*, it says firms will be able to establish dedicated network connections from their private or managed infrastructure into any of the providers – such as Amazon Web Services, Fujitsu and Outsourcery – that are part of the platform.

As a result, Telecity says businesses will be able to make "sophisticated" choices around the deployment of their applications, without restrictions "due to data sovereignty or vendor lock-in".

TelecityGroup CEO Michael Tobin says enterprises across Europe are looking at ways they can maximise the power of the cloud to enhance the performance of their core platforms,



CEO Michael Tobin says Cloud-IX combines TelecityGroup's "premium" carrier neutral data centres with access to the key cloud platforms.

while at the same time maintaining service levels and maximising the benefit of existing IT investments.

"Key to solving this challenge is building flexible solutions that utilise the elasticity and economic benefits of the public cloud alongside existing IT infrastructure, all with direct connectivity into local and international carriers," he says.

Tobin believes *Cloud-IX* offers the best of both worlds, combining "premium" carrier neutral data centres to house existing mission-critical infrastructure with access to the key global cloud platforms.

## Partnership for IL3 platform

Dell will help Outsourcery design and deploy the compute, storage and networking infrastructure for its public sector IL3 platform. The two firms aim to develop a highly scalable and modular system capable of supporting the new Microsoft technologies upon which the platform will be based.

This latest collaboration follows Outsourcery's recent deal with Microsoft to lead its UK initiative to accelerate IL3 compliant cloud services for the UK public sector, especially central government. Last month, a range of the firm's services were accepted onto the latest *G-Cloud* framework (*see News*, *p4*).

Outsourcery says its "unique" platform will initially provide a full range of application and UC services. Storage, archiving, backup, and Big Data analytics will be offered in a second phase.



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## **Cloudy with a chance of virtualisation**

How organisations are capitalising on virtualisation and cloud-based platforms to boost their productivity, efficiency and network performance.

## Virgin Management goes for the 'full cloud'

Virgin Management Ltd (VML) provides corporate and general management services to all of the global companies across the Virgin Group. A decision to relocate its UK head office to a new HQ in the Battleship building (*pictured below*) near Paddington prompted the firm to evaluate its IT requirements.

With its physical infrastructure coming to the end of warranty and supportable life, VML concluded that its existing system was too restrictive and limited in scalability. With many disparate components bolted on over the years, it required a great deal of management, such as client updates and upgrades on local user machines, which meant high opex. VML also lacked a robust disaster recovery (DR) strategy.

After a consultation with Codestone, the firm decided to go for a 'full cloud' IaaS platform which removed the need for dedicated hardware in its regional offices. The aim was to provide 200 users with a centralised and scalable system via *Citrix XenDesktop*, with a failover DR plan deliverable to any device or user, thus expanding flexibility whilst reducing management costs.

All VML's data, settings and virtual servers are now backed up on a daily basis and replicated to one of two data centres. Key workloads are automatically sent to a separate site and protected by VMware's *Site Recovery Manager* (*SRM*). In the event of a total primary data centre failure (such as a fire), Codestone says *SRM* will failover protected workloads to the secondary data centre within 30 minutes. Nonessential workloads will be manually recovered within two hours.

To enable staff with any supported devices to use IM, video conferencing and VoIP, Codestone designed and implemented a new *Microsoft Lync* server. It also migrated the existing *Blackberry Enterprise Server* to the new system for ongoing *Blackberry* device management. Supported devices can run applications without an active connection to the cloud, enabling users to work on local versions. They can then sync their applications and data when a connection is restored.

The firm adds that it built the IaaS platform in parallel to VML's office move, and minimised disruption by keeping all legacy systems in service during the process. It carried out a staged approach to the cloud migration project, making it achievable in manageable steps and using a single 'Gold Build' Citrix desktop image to deliver all user applications and services.





#### On yer bike for legacy ICT at Evans Cycles

Evans Cycles has 50 stores across the UK and also sells via the internet. In 2011, its IT team was tasked with finding a suitable replacement for a PBX that was no longer meeting the company's growing needs. At the same time, the team was asked to make savings, and this prompted it to approach InTechnology to discuss hosted telephony options.

Working with the Harrogate-based managed service provider, Evans discovered that its legacy telephony estate was effectively being mismanaged by a third party, with evidence of significant over-charging. It also had a tape-based backup system that was not always 100 per cent reliable and consumed admin resources, with single file restores often taking hours to complete.

Furthermore, the firm's growing data estate of more than 2TB was adding to the pressure on the backup system, while a lack of redundancy within the IT environment was at odds with the company's desire to have enterprisegrade DR and business continuity.

InTechnology's solution was to first move Evans onto its online managed backup service. It says this not only accelerated the speed of restores but also added an extra layer of DR-oriented data security. The company claims that average backup windows have now been slashed from four hours to fifteen minutes, while reliability and security have also been transformed with data backed up across multiple data centres with any failures identified and alerted.

The migration of the backup system was followed by a two stage telephony project: the moving of Evans' Gatwickbased head office onto InTechnology's hosted telephony platform, and the signing over of its entire calls and lines estate.

Overall, Evans Cycles is confident of securing a 20 per cent reduction in IT costs through its adoption of managed services: the automation and proactive monitoring of the backup system has streamlined the whole process, stripping out cost and freeing the system administrator from low value tasks; while the fully managed provisioning of new telephony sites has removed a further burden from the internal team.

InTechnology adds that the ability to tap into an end-to-end portfolio and bring on line new systems quickly and cost-efficiently is helping Evans shape its broader IT strategy. For example, it has recently moved its web proxy servers onto an InTechnology managed IaaS platform.

9

## Your Housing maximises storage utilisation

Your Housing Group (YHG) was formed when Arena Housing Group and Harvest Housing Group merged. It is now one of the UK's largest social housing providers, with 32,000 homes in north-west England, Yorkshire and Staffordshire.

YHG has to be able to provide its 1,200 staff and emergency repair partners with round-the-clock access to its housing management systems. Prior to the merger, Harvest had lots of different systems across 16 locations which were becoming difficult to manage. Following a tender for the replacement of its IT infrastructure, it chose JMC to implement 40 Dell PowerEdge R710 servers and two Compellent Storage Center arrays, together with Citrix XenDesktop. All storage has been consolidated onto the arrays and Citrix's desktop virtualisation software is used to provide access to central applications and data.

The two Dell storage arrays (*pictured right*) support two tiers of storage. Tier one consists of 75 15k Serial Attached SCSI drives, while tier two has 12 7k SAS drives. Together, they provide over 69TB of raw storage and 46TB after RAID.

The arrays feature Dell's *Fluid Data* technology for automated tiering. This moves data to the optimal storage resource and is said to help increase performance, improve disk utilisation, and accelerate access to information. "Simple things like loading *Microsoft Outlook* on a virtual desktop are [now] much quicker," says Sarah Macadam, YHG's ICT head of customer service.

She adds that now that the Dell storage arrays have been moved to twin data centres, maintenance can be carried out with very little impact on staff. "That simply wasn't possible before. If you wanted to perform updates, you had to take all the users off the system."

The arrays' built-in resilience enables YHG to take half of its systems offline over a weekend, when user numbers are low, and still support employees with 100 per cent data availability. "That means our staff can continue to respond to any tenant emergency as soon as it's reported," says Macadam.







## Software defined networking (SDN) is likely to impact IT way beyond the data centre, making WAN optimisation crucial to economic growth. IAN GRANT finds out more.

The cost of moving a bit of information from A to B may have dropped to a vanishingly small fraction of a penny but it is not zero. Multiply that fraction by the number of bits on the network, currently in the exabyte (10<sup>18</sup>) per month range, and it quickly becomes a significant chunk of the GDP of the global economy.

At least that's what management consultancy McKinsey discovered when it investigated the impact of networks on the world economy. Reporting to the e-G8 Forum in 2011, the firm said: "On average, the internet contributes 3.4 per cent to GDP in the 13 countries covered by the research – an amount the size of Spain or Canada in terms of GDP, and growing at a faster rate than that of Brazil."

But the impact of networking is even more profound. McKinsey found the internet accounted for 21 per cent of GDP growth over the previous five years in the developed countries, a time when most developed economies were struggling to show any growth at all following the banking crisis of 2007/8.

It added that most of the new economic value fell outside of the technology sector, with 75 per cent of the benefits captured by companies in more traditional industries. "The internet is also a catalyst for job creation. Among 4,800 SMEs surveyed, the internet created 2.6 jobs for each one lost to technology-related efficiencies."

Awe-inspiring as this may be, networking's contribution to the general welfare is still constrained by several factors. Google, one of the prime movers behind software defined networking (SDN), believes that cost per bit doesn't decrease with volume. This is because complexity in one-to-one and any-to-any communications requires more advanced forecasting and control mechanisms.

Further, a lack of control and "determinism" (predictability) in distributed protocols means firms have to build for worst case scenarios – i.e. over-provision. Non-standard vendor configuration APIs increase the complexity of automated configurations, and existing routing mechanisms do not allow for scheduling or optimisation to meet explicit objectives such as latency. While Google was speaking about the internal WANs that connect its data centres, all firms also have to consider the impact of technical network issues related to BYOD, the internet of things (IoT) or machine-to-machine, and staff and customer mobility. They are mostly still working across a three tier public network architecture – core, aggregation and access – which means messages need to be translated at the interfaces, which can add delay and error.

Many have fought this by building their own networks or leasing private lines from network operators, effectively cutting out the aggregation layer. But this is expensive and still requires access to the public networks to support mobility and IoT.

There is also a growing gap between network speeds experienced inside and outside the firewall. While carrier networks are upgrading their core networks to data centre-like velocities of 10/40/100Gbps (and testing 400Gbps), access speeds are small fractions of that.

Relying on the availability of 'next generation' all-digital IP/Ethernet-based broadband is also not a realistic option because most carrier implementations are asymmetric, offering faster downloads than uploads. This makes them fundamentally at odds with the growing upload traffic due to cloud storage and services, and video conferencing in particular.

#### The video threat

The danger that video traffic will congest the networks has been long feared. Joachim Horn, group CTO of Swedish pan-European carrier Tele2, told a London conference in November that 4K video (expected to be commonplace within 12 to 18 months) requires 16x more pixels than HDTV to be delivered at once. This will strain existing networks, particularly access networks.

Since the airwaves are even more constrained by physical limits than fixed cables, much of this traffic will have to go via fixed routes. This swap between what was first broadcast (TV) and what was first delivered point-to-point (voice) was predicted in the 1990s by former MIT Media Lab head Nicholas Negroponte and is now known as the 'Negroponte Switch'. To cope, fixed and wireless operators have introduced traffic management or "shaping" policies to ensure the average user gets "an equally bad" service, says telecommunications consultant Martin Geddes. But this results in a service too inconsistent for firms that do business via video conference, archive data at remote sites, or transact business online.

Geddes predicts that networks will evolve into "trading spaces" where services such as video conferencing and email will compete for bandwidth based on their contents' tolerance of latency – the less tolerant, the higher the price.

This concept is already hard-wired into the basics of WAN optimisation. Already, firms like Exinda allow netadmin staff to create policies that restrict the bandwidth available to different types of traffic and/or users. Setting up and maintaining the policies is a slow, complicated process that can be gamed by corporate politicians.

The shift to cloud-based applications and virtualisation cause further complications. When the basic compute/store/connect infrastructures suddenly become fluid, the complexity of managing the process increases enormously.

As a result, Geddes foresees a time when much of the allocation of bandwidth may be done dynamically under program control, and perhaps by auction. Moreover, this could happen in both private and public networks. Current experiments with TV white space, where unlicensed users can gain temporary access to licensed spectrum on condition that they do not interfere with licensed traffic, are a step in this direction.

Governments presently have no way to monetise this 'free to air' spectrum, but they have a vested interest in doing so; and since demand for spectrum is rising, it is almost inevitable that they will.

When network traffic becomes gridlocked, network managers have three options: add bandwidth, accelerate traffic and prioritise mission-critical traffic. Because of the cost of leased lines, firms have long been aware of the need to maximise bandwidth efficiency. But the business reason for having them in the first place – the user's experience of interacting with the application – has often been lost in the technical fog of managing bandwidth, re-routing congested traffic, defending against DDoS attacks, and the like.

#### Don't ignore the app

Ignoring the application is dangerous to the wealth of a company. A new study of online shopping behaviour commissioned by WAN optimisation specialist Riverbed found that speed is paramount. Around half of internet shoppers in Europe will abandon an online purchase if the web page loads too slowly (UK 46 per cent; France 41 per cent; Germany 51 per cent). For more than one-third, 10 seconds is the cut-off point; after that they abandon the shopping cart (UK 27 per cent; France 42 per cent; and Germany 36 per cent).

Kavitha Mariappan, director of marketing for Riverbed's Stingray division, says shoppers are now emotionally engaged in their online experience: "Tolerance has evolved into stress, anxiety and, in some cases, anger with slow or poor experiences. This is putting a premium on efficient back office functions, including a website that loads according to the expectations of consumers. These are critical for customer service, engagement and loyalty."

In its 2013 Magic Quadrant report on WAN optimisation controllers (WOCs) (see graph overleaf), market researcher Gartner said: "The primary function of WOCs is to improve the response times of business-critical applications over WAN links, but they can also help to maximise return on the investment in WAN bandwidth and sometimes avoid the need for costly bandwidth upgrades."

Most attempts to optimise wide area networking have made things more efficient at Layers 1 to 3 of the OSI network model. But this addresses only half the problem, and increasing numbers of vendors acknowledge they need a more complete answer. But it's not here yet.

WOCs can be either hardware or software. They are usually deployed on the LAN side of WAN routers that connect data centres to remote offices. They ensure mission-critical applications get the band-



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### **WAN** optimisation



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> Gartner's Magic Quadrant for WAN optimisation companies: who will be left after the SDN wars?

width they need at all times by prioritising their access to network resources and by shaping or restricting other traffic. WOCs can also limit the effects of network latency by optimising transmission protocols and applications. Finally, they can reduce the amount of bandwidth needed by compressing and caching data, and transmitting only changes to them.

CTO and co-founder of cloud operator Exponential-e Adrian Hobbins, says systemic risk often comes not from the WAN but from the application. "IT decision makers need a comprehensive awareness of the applications that run over the company network and a view of how demand for these applications is going to grow over time. Only once the behaviour of all mission-critical applications, including office apps, is undesrtood should a WAN solution be rolled out."

He goes on to warn against rolling out a WAN all at once: "The delivery of new network solutions can be staged, with stepped upgrades of WANs being rolled out in line with budget and projected growth. This ensures the network is neither overloaded nor under-utilised, both of which hurt profit streams."

Hobbins argues that the better approach is to test applications in both data centre and cloud deployments. This allows firms to see which location is best, app by app. He believes that this is especially true for SMEs. "The cloud will solve all of the company's networking problems only if a rollout is accompanied by a robust planning process that ensures the company understands what it is implementing.

Mark Urban, senior director of product marketing for WAN optimisation vendor Blue Coat, says 19 September 2013 was a

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Mobile Mark (Europe), Ltd. opens newly-expanded facilities in Hednesford, England

Mobile Mark (Europe), Ltd. has recently moved its factory operations to an expanded and newly-renovated facility in Hednesford, England.

This state-of-the-art facility allows the company to expand the products and services it can offer its customers, including quicker turn-around for large production volumes and an expanded range of related accessories such as custom cable assemblies.

"Our staff are excited to be working in this new facility\*, says Linda Clark, Managing Director of Mobile Mark (Europe). "They love the bright, welcoming workspace. The new space allows us to respond more efficiently to the various special requests we receive from our customers.\*

In addition to expanded and enhanced factory space, the company has also expanded its conferencing area and will be better prepared to engage in on-site customer training for antenna theory and hands-on applications.

Mobile Mark (Europe), Ltd. manufactures site, mobile and device antennas for 135 MHz - 6 GHz. Applications include GPS Tracking & Fleet Management, Cellular GSM, WiFi, RFID, Public Safety, Military and Machine-to-Machine (M2M). You can view our complete antenna and accessory range on-line at www.mobilemark.com.

case in point. "One-third of total internet traffic was taken by smartphone users updating to *iOS* 7. That was not good news for any IT organisation who had planned patch updates or security fixes that night."

Urban says rather than buy more bandwidth, network managers should look at caching or stream-splitting to boost application performance. The process of caching stores frequently used content locally, reducing the need for WAN capacity. Coupling that with SDN allows to re-configure networks on the fly as demand shifts, he says.

#### Where's the end user?

Adding server virtualisation to the issues noted above makes a complex picture even more complicated by orders of magnitude. The present initiatives around SDN and network function virtualisation (NFV) are designed largely to draw a veil over the complexity, leaving network managers with a single smooth and largely automated management interface to their networks.

But if they want to be able to set network policy and 'fire and forget', they should look away now. Nathan Pearce, product manager at application delivery specialist F5, says: "We would encourage them to not lose sight of why networks exist; SDN needs complementary services at Layers 4-7 so that organisations can reduce the cost and complexity of deploying software defined application services."

While most network managers have governed events at the Layer 3 and below, they are increasingly required to address matters at Layers 4-7. This is because managing the customer experience, as indicated by Riverbed's research, is now the competitive edge for attracting and keeping both customers and staff.

However, apps and customer experience are largely unfamiliar territory for network staff. But can they afford to ignore this? After all, the hype around SDN and NFV largely disregards the customer experience aspects of networking. It's unlikely. The most recent and high profile sign came in November from Cisco. The market-leading vendor made its new focus on applications explicit with the launch of Application Centric Infrastructure (ACI). The brainchild of Insieme, the systems development house

#### **Decongesting the network**

Most network managers increase bandwidth rather than seek to match the network to the applications, according to optimisation specialist Exinda.

It says that despite the need to understand the behaviour of applications on their networks, only 35 per cent of IT managers have invested in such a tool while 81 per cent have increased bandwidth. So if you want to work smarter and save your employer money rather than control an ever-increasing capacity and budget, here are Exinda's seven life-affirming virtues:

Look into the network. If you don't know what's causing congestion, you can't fix it. Find out which applications are in use, how much traffic is generated by each, and the relative priorities of these applications.

Reduce traffic via caching. Cache frequently accessed web objects locally so only new ones are downloaded. If multiple requests are made for the same objects multiple times, the overall bandwidth utilisation accumulates.

Control recreational traffic. If it is your policy to allow access to recreational

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#### WAN optimisation

it largely financed and is now acquiring for \$863m, ACI seeks to extend SDNlike programmability from a central controller to all seven network layers using 'open' APIs.

Jim DeHaven, head of data centre and virtualisation in Cisco's UK and Ireland office, says most SDN implementations are overlays that concentrate the intelligence in the controllers so that all network staff do is connect pipes and IP addresses. "We're making the networking team far more relevant in the world of SDN. Cisco is leveraging the skills they've developed over the last 20-25 years around troubleshooting, scaling, development of data centres and investment in Cisco technology."

DeHaven reckons ACI gives enterprises "extremely powerful" options for both private and hybrid or federated cloud implementations. It will also allow host providers "to build their own AWS-like [Amazon Web Services] services," he adds.

Key to ACI is the Application Policy Infrastructure Controller (APIC). According to David Krozier, telecoms infrastructure analyst for market researcher Ovum, this supports a common policy framework that Cisco will extend to bring compute, storage, and network infrastructure under a "common pane of glass". He notes that while ACI generally supports SDN protocols such as OpenFlow with merchant silicon, to get extra features you'll need Cisco ASICs. "While this may raise the hackles of those who believe future networks should be based on generic hardware platforms, this approach is unlikely to match the performance capabilities of *ACI*."

The new 100Gbps-ready Nexus 9000 series switches in the ACI run a new optimised version of Cisco's NX-OS and support up to 1.92Tbps per slot. The eight-slot Nexus 9508 is available now. The APIC, which allow applications to be untied from an IP address, and the new NX-OS will be available in April 2014.

Cisco claims that the APIC will cut application deployment times to minutes, while application network profiles and L4-7 network service automation will "tear down" apps that are no longer needed, conserving bandwidth.

HP's response was scathing. Nick Watson, EMEA VP of the firm's Networking division, says Cisco is

traffic (social networks, *YouTube*, etc) during work hours, grant priority to business applications.

**Time-shift your network.** Not everything needs to be done at once, but some things may have to happen at the right time. Create policies that reflect this, and shift resources to those applications. For instance, backups could be shifted to prevent overlaps with batch data transfers or replication transports. This cut in network contention can massively improve end-to-end performance and usability.

**Don't treat all business traffic the same.** Traffic comes in three classes: reputational, revenue-affecting, and mission-critical internal. Do the analysis, gauge the risks, set the policies and monitor the feedback.

Manage and prioritise at a user level. Some roles need more bandwidth than others. Make it so.

**Be smart.** Once you know where your packets are going and why, use that knowledge. Allocate network resources based on a pre-determined set of criteria that match the company's activities as they change yearly, quarterly, monthly, weekly and daily. ignoring the SDN movement "once again". He accuses it of continuing to create a "hardware-defined" alternative that locks customers into Cisco, thus denying customers "the economic and game-changing simplification, automation and application development benefits promised by SDN".

Cisco is also battling VMware, which bought SDN specialist Nicira last year and introduced its NSX network virtualisation platform in October. In a blogpost in response to NSX, Cisco CTO Padmasree Warrior said: "A softwareonly approach doesn't scale and it fails to provide full real-time visibility of both physical and virtual infrastructure. [It] does not provide key capabilities such as multi-hypervisor support, integrated security, systems point-of-view or end-toend telemetry for application placement

#### "Only once the behaviour of all mission-critical applications is understood, including office apps, should a WAN solution be rolled out."

Adrian Hobbins, CTO and co-founder, Exponential-e

and troubleshooting." That means companies have to tie together multiple third-party components, adding cost and complexity, and manage them. And while WOC makers might have to pick winners,



for now, while Cisco and the world war over SDN, network managers need to avoid the crossfire. But service providers with bandwidth to sell should be rubbing their hands in anticipation.



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### off-the-shelf: storage

## Pump up the volume

With data volumes constantly on the rise, organisations need somewhere safe and reliable to store their valuable bits and bytes.

**Brocade** claims to have enhanced its *Fabric Vision* technology with "break-through capabilities". It says these will dramatically simplify SAN administration and reduce operational costs, while further improving the availability and performance of its Fibre Channel (FC) SANs.

The new features include a *Monitoring* and Alerting Policy Suite (MAPS) and a Flow Vision tool.

Brocade says *MAPS* proactively monitors the health and performance of the SAN infrastructure to help ensure application uptime and availability. It allows for customising rules for specific ports across fabrics at one time using a single dialogue box. An integrated dashboard displays a health report for each switch, along with details on out-of-policy conditions to quickly help pinpoint potential issues. Flow Vision allows users to nondisruptively identify, monitor and analyse specific application and data flows in order to maximise performance, optimise resources, and avoid congestion. Brocade says it's "superior" to expensive third-party tools that typically disrupt applications and can degrade optical signal strengths.

*Fabric Vision* is a collection of features and tools that includes the 6520 SAN switch (*pictured*) launched earlier this year. This has 96 FC ports in a 2U form factor to deliver what's said to be "industry-leading" port density and space utilisation. Brocade adds that the density of the 6520 results in fewer inter-switch links, cables and switches to manage.



**Coraid** has added the *EtherDrive SRX6000 Series* to its range of scale-out Ethernet storage appliances.

Aimed at cloud and enterprise data centres, the firm says the devices feature a faster processor, new bus architecture, and its latest *CorOS 7.0* software to deliver more than 700,000 IOPS in a single chassis, and more than 4,800MB per second of throughput.

By giving customers the flexibility to maximise the performance of all drive types in a single platform, Coraid says the *SRX6000* helps customers integrate flash performance into their core storage environments. According to the firm,

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flash is a "tremendous" enabler for scaleout storage because small modular arrays can now outperform large legacy arrays with thousands of hard drives.

The *SRX6000* is said to offer flash performance in a scale-out architecture, leveraging the power of connectionless, massively parallel Layer 2 Ethernet. It delivers scale-out network storage for block workloads, as well as capacity for Coraid's *ZX* file storage products. Each appliance runs the *CorOS* distributed storage operating system to pool individual systems together into a single platform.

They all work in conjunction with the firm's *EtherDrive VSX* storage virtualisation appliances to provide logical volume management and features such as snapshots, clones, and remote

**HP** has launched several models as part of its *StoreVirtual Storage* portfolio. They are available as a software-only *Virtual Storage Appliance* or a pre-configured *Converged Storage Appliance* that runs on rack- or blade-based *HP ProLiant Gen 8* hardware.

The range includes the iSCSI-based, bladed *StoreVirtual 4630*. HP says this enables customers to improve workflow productivity by increasing application performance with 6Gb Serial Attached SCSI connectivity and *ProLiant Gen8* server technology.

Its smaller footprint is said to result in lower energy costs, while 11.25TB per rack unit capacity delivers double the density of previous generations, thus minimising future hardware investments. HP says the 4630 can easily accommodate virtualisation growth by scaling to 180TB within the same *BladeSystem* chassis, and 720TB within a management group.

According to **QNAP Systems**, its *TS-x70* series *Turbo* NAS devices are highly scalable, and by connecting multiple QNAP RAID expansion enclosures their total raw storage capacity can be expanded to 100TB.

There are three models available in 4-, 6and 8-bay designs. They're each powered by a dual core Intel 2.6GHz processor, and feature 2GB DDR3 RAM, four Gb LAN ports, support for SATA 6Gbps hard drives/ SSD, plus twin USB 3.0 and HDMI ports.

QNAP says its tests show that device reading speed is up to 450MB per second and writing speed up to 423MB per second in typical *Windows* environments in network trunking mode. It adds that the *TS-x70* series supports 10GbE highspeed networking making it an ideal solution for applications such as real-time HD video editing and in data centres.

QNAP's QTS 4.0 operating system is included for IT administrators to easily find desired functions, monitor system

**Toshiba Electronics Europe** (TEE) has expanded its range with the launch of a new range of *Enterprise Endurance* SSDs designed for use in business-critical server and storage platforms.

Using advanced 24nm enterprise multilevel cell (eMLC) NAND technology, the new drives are available with capacities of 100GB (*PX02SSF010*), 200GB (*PX02SSF020*), 400GB (*PX02SSF040*), and 800GB (*PX02SSB080*).

TEE says that thanks to a novel use of eMLC NAND, the units achieve random write speeds up to 42KIOPS, random read speeds up to 130KIOPS, and increase eSSD endurance capability to 30 full

DWPDs (drive writes per day). The firm adds that these high-levels of performance make the new drives ideal for replication. The appliances can be configured and managed using *Coraid EtherCloud*, said to be the industry's first software-defined storage platform.

The *SRX6000* series units are available in 16- to 36-disk configurations, with the ability to mix-and-match SATA, SAS, and SSDs. Each one is a self-contained storage system providing RAID protection with local storage processing. The vendor adds that they provide JBOD and RAID 0, 1, 5, 6, and 10 with minimal overhead.



The StoreVirtual 4330 (pictured) and 4730 models each offer 2.5TB-1152TB of capacity and dual connectivity for increased flexibility. The addition of FC connectivity to the existing iSCSI 10 GbE support on the new platforms enables customers to meet application service levels by providing multi-protocol access and a single pool of shared storage.

HP says they can replace multiple and disparate legacy storage platforms with a single storage architecture that supports all data centre applications. It adds that simplified migration between FC and iSCSI connections gives users a speed transition to new technologies.



information, and run multiple tasks simultaneously. The OS is also said to offer a full range of applications for business use, including file management, sharing,

backup, multimedia applications, and more. The *TS-x70* series can be used as storage units for server virtualisation via iSCSI/IP-SAN deployment. Users can also increase the functionalities of the units with QNAP's built-in *App Centre* that provides various install-on-demand apps developed by the firm and third-party developers.



use in applications such as data processing and online transaction applications.

The 2.5-inch *PX02SSx* series SSDs each feature a dual-port 12Gbps Serial Attached SCSI interface and incorporate Toshiba's *Quadruple Swing-By Code* system for improved error correction and reliability.

The company adds that cryptographic erase versions of the eSSDs are also available: *PX02SSU010* (100GB), *PX02SSU020* (200GB), *PX02SSU040* (400GB) and *PX02SSQ080* (800GB).



#### network knowledge

## IT directors rate cloud computing as top skill

Cloud computing is the most valuable skill for IT professionals to have in terms of career path and advancement, according to new research from recruitment specialist Robert Half Technology (RHT).

In a survey carried out with 100 CIOs and IT directors across the UK earlier this year, it found that the "huge rise" in the adoption of cloud computing initiatives is driving organisations to employ more cloud experts. 41 per cent said they would hire additional staff to support cloud projects; of these, permanent employees would make up 17 per cent of new recruits, while contractors or interims would comprise 24 per cent.

Just 18 per cent said they did not have cloud initiatives in place, suggesting the rest have undertaken or will undertake cloud projects, says RHT.

The study also found that IT directors are continuing to invest in training and education to bring their teams up to speed. 49 per cent said they deliver in-house training and development, while a third invest in external training courses. 30 per cent provide webinar and e-learning, a quarter of companies deliver on-the-job training, while a fifth rely on previous experience in another company.

Among some of the other highly rated IT skills were security, project management, and virtualisation (*see chart below*).



SOURCE: ROBERT HALF TECHNOLOGY

#### ANS Group launches Cloud Academy

ANS Group has launched a scheme to create more apprenticeship opportunities for young people in the IT sector.

The managed services specialist says its Cloud Academy will offer training to around 60 apprentices each year, and employment with the group is guaranteed for all those who successfully complete the 12-month programme.

The firm plans to recruit apprentices through schools, colleges and youth charities. As well as receiving on the job training and support from ANS' cloud infrastructure and virtualisation experts, they will also have the opportunity to pursue vendor certifications. ANS adds that there are plans for a future academy that will accept apprentices sponsored by other IT businesses. ANS launched its scheme following recent statistics from the National Apprenticeship Service which show that digital apprenticeships are amongst the most over-subscribed in the UK, attracting an average of 17 applications per role.

Company founder Scott Fletcher adds: "I've always championed apprenticeships, having started my own career through the Youth Training Scheme which gave me enough experience to set up ANS at 22."

#### **NEW COURSES**

#### Cloud Maturity: How to Solve Your Cloud Security Challenges – ISACA

To help enterprises effectively solve cloud security issues, ISACA is hosting a free virtual conference, *Cloud Maturity: How to Solve Your Cloud Security Challenges.* The global association of IT professionals says participants will learn how to facilitate the decision process concerning cloud maturity. For example, ISACA VP Ramsés Gallego will offer guidance on defining the right policies, standards and procedures to provide a robust approach to change management, service delivery and asset optimisation.

Among the other educational sessions are security best practices for identity and access management, and tools for tracking cloud-stored information.

As well as gaining access to the seminars, participants will be able to interact with exhibitors and sponsors in a virtual exhibit hall. In addition, ISACA says they will earn up to five free continuing professional education hours.

The event takes place on 4 December from 8.15am to 5pm EST (1.15pm to 10pm GMT). www.isaca.org/elearning

#### *End-user Self-care – VOSS Solutions* This is the first course in a new online

This is the first course in a new online programme that aims to give students the chance to learn at their own pace.

The 12-month module is designed to give VOSS and Cisco *HCS* end users the tools to administer their own unified communications services and applications, from any smart device or tablet. It explains how to self-manage extension mobility, speed dials, presence, conferencing, voicemail, single number reach, corporate and personal directories, and preferences.

At the end of the programme, VOSS says end users will have the knowledge and tools to carry out changes to UC settings in real-time, which will increase productivity, speed time to resolution, and improve inter-company collaboration. This first course is offered free of charge for a limited period. www.voss-solutions.com

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# Making life a little easier...

### Handy Tip #3:

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