Apprenticeships rise, but more action needed to attract talent

by Rahiel Nasir

The Tech Partnership (TP), the network of employers collaborating to create the skills for the digital economy, is urging businesses in all sectors to embrace technology apprenticeships as a key weapon in the battle for faster growth.

According to data from the Office of National Statistics and the TP, the UK currently requires 134,000 new technology specialists every year, with around half of these being at junior level.

The statistics reveal that 1.3m people now work as technology specialists, with an increase of six per cent in 2014 alone. The number of people applying for tech apprenticeships has doubled in the past three years, and there are now 14 applicants for every apprenticeship vacancy advertised, compared to an average of nine applicants for apprenticeship vacancies in general.

The TP's strategy director Margaret Sambell says: "While more businesses are introducing apprenticeships, a concerted effort is required across all industries to meet demand, as well as to make sure these apprentices gain the skills they need to actively contribute to Britain's digital future."

Employers such as BT, Capgemini, Fujitsu, Google, IBM, amongst others, have been working together through the TP to design course standards and online development activities as part of the Tech Industry Gold apprenticeships scheme. This is claimed to make it easier for companies to take on apprentices with confidence.

But despite the rise of apprenticeships in the sector, Surrey-based technology staffing specialist Gibbs S3 has warned that growing firms in the telecoms industry must do more to attract and retain top talent in science, technology, engineering and maths (STEM).

Following the recent release of official figures that revealed stalled employment growth and a rise in those out of work, Gibbs S3 founder and CEO Farida Gibbs said: "The UK is now close to full employment after two years of solid growth. However, while employment levels are still high, there is still a severe shortage of experienced, skilled workers in key technology-driven industries like oil and gas, pharmaceuticals, consumer goods and financial services."

The Tech Partnership says more businesses are introducing technology apprenticeships, but Gibbs S3 founder Farida Gibbs (left) warns of a "severe shortage" of experienced workers in tech-driven industries.

She warned that a lack of access to the right technology talent has a "severe" impact on a company's ability to expand, and when the growth of international, blue chip companies falters it impacts the entire economy. "Working with some of the world's biggest companies, we have seen the shortage is pushing up wages as more demand is placed on a dwindling pool of quality workers," said Gibbs.

She believes that hiring under-skilled or inexperienced workers, especially technical specialists, can cause entire projects to fail and derail growth plans.

Gibbs added that more leading firms are demanding a "hybrid" approach to workforce solutions that encompasses IT staff, business change and project solutions.

"However, the challenge doesn't end with getting top workers on board, and firms must offer the most attractive incentives and growth prospects to staff to retain them. They must think outside the box and offer a complete package that extends beyond a competitive salary." ■

Council to provide free outdoor Wi-Fi in Twickenham and Richmond

Richmond Council is hoping to adapt the way it delivers its services to suit mobile lifestyles with the launch of a free Wi-Fi service that coincides with the start of the Rugby World Cup this month.

Residents and visitors to Twickenham and Richmond will be able to access 30 minutes of free Wi-Fi a day whilst out and about in the borough.

Three websites – www.richmond.gov.uk, tfl.gov.uk and visitrichmond.co.uk – will be available on an unlimited basis for free. The council says this will make it easier for residents to use local services online, and they will also be able to report problems with graffiti, flytipping, etc.

Arqiva has installed the initial Wi-Fi access points that will provide coverage in Twickenham, Teddington and Richmond, and at no cost to the borough. While the company owns the wireless infrastructure, it says any revenue generated from third parties on the Wi-Fi network will be shared with the council.

"Ofcom recently reported that 30 per cent of London residents do not have access to the internet in their home," says Nicolas Ott, Arqiva's telecoms MD. "Offering council-led Wi-Fi access to local residents and visitors via their wireless devices opens up the opportunity to give internet access to more people." ■

Academic data centre gaining momentum

Eleven leading UK institutions are now using the first shared data centre for research and education that was launched by Infinity SDC and Jisc 12 months ago.

Infinity set up the facility at its flagship site in Slough in September 2014. This was part of a five-year framework agreement with Janet, the UK's national research and education network, and provided by Jisc, the education sector's not-for-profit organisation for digital service and solutions.

The centre offers high-performance computing and core IT infrastructure, resulting in increased collaboration with significant research projects, improved
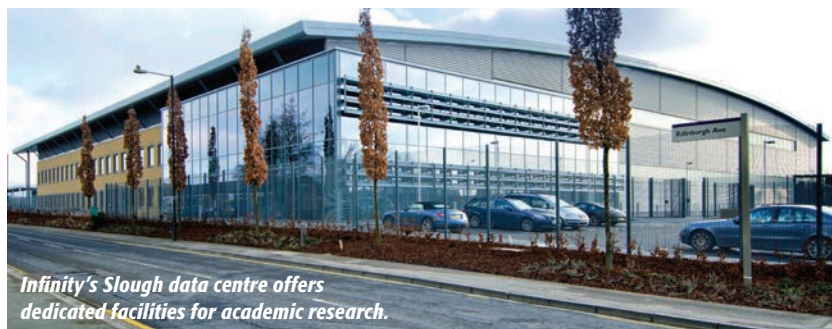
Infinity's Slough data centre offers dedicated facilities for academic research.

efficiency, and on-premise facilities being re-purposed for teaching. Infinity adds that being directly connected to the core

of Jisc's Janet network enables researchers to quickly and securely link large data storage.

King's College London selected the facility because it offers power flexibility. Its CIO Nick Leake says: "We required a data centre to provide a range of power densities per rack, as well as the flexibility to change the power allocation within the data hall when needed to meet the processing power required for biomedical research."

Other universities that have now moved into the facility include Brunel, Imperial, LSE, Queen Mary, Surrey, amongst others. They have joined the data centre's first further education tenants, Liverpool City College and The Higher Education Funding Council for England. Jisc is currently in talks to add more before the end of the year. ∎

Testing times for Microlease and Viavi Solutions

Manuel Mato (left), Viavi's EMEA vice president of sales with Peter Collingwood (right), Microlease's EMEA CEO.

Microlease has been ramping up its operations following a number of major announcements over the last 12 months.

In September, Viavi Solutions (formerly JDSU) appointed the Harrow-based test equipment sourcing specialist as its premier solutions partner. Under the arrangement, Microlease will sell or rent Viavi's core product portfolio including its wireline and wireless test sets in Europe's top two markets, the UK and Germany.

Microlease says the partnership is backed by its investment of more than £1m in commercial and engineering resources, such as expert application engineers, so that customers can make "well informed" decisions when it comes to specifying instrumentation.

Manuel Mato, Viavi's EMEA VP of sales, says the agreement with Microlease has not been made on an exclusive basis. Instead, he believes it will enable both companies to focus on a particular market segment which includes network operators, telcos, equipment manufacturers, cloud and other service providers, as well as enterprises.

Peter Collingwood, Microlease's EMEA CEO, adds: "The incessant pace at which technology progresses, with new industry standards emerging and performance benchmarks being achieved, dictates a more sophisticated approach to test equipment procurement."

This latest agreement follows on from the firm's announcement in March that it had been appointed as a UK distributor for Keysight Technologies.

And in another major deal last November, Microlease purchased the entire share capital of the Livingston group for an undisclosed amount.

At the time, the company pointed out that Livingston will continue to offer rental, lease and sales of electronic test and measurement equipment under its own name, and that there will be no impact or change to the services it provides to its current or future customers. ∎

Flexible hosting boosts playtime

Gaming service company Multiplay is using iomart's dedicated server hosting specialist RapidSwitch to provide the infrastructure behind its *esports* platform in the UK and Europe.

Owned by retailer GAME, Multiplay provides hosting for hit games such as *Minecraft* and *Battlefield*. RapidSwitch provides the infrastructure that allows the company's *ClanForge* software to distribute games servers to users across the UK.

Multiplay is hosting hundreds of dedicated servers with RapidSwitch with a stock of hardware already configured to be deployed as demand scales. Using iomart's network of data centres, it's claimed RapidSwitch is helping the firm achieve latencies of 13 to 14 milliseconds to most of its end-users across the UK internet.

Neil Christie, commercial director for RapidSwitch, says: "Using dedicated servers provides the low latency and high reliability to ensure the best-possible multiplayer gaming experience. It means the developers can get on with creating great games, and publishers know they have the right hosting support to flex with consumer demand." ∎

Windows To Go on a USB stick

Imation claims its new "PC on a stick" can save up to 95 per cent of the costs of outfitting employees with company laptops.

The storage and security specialist says it developed *IronKey Workspace W200 PC* on a USB flash drive to meet the growing business demands for *Windows To Go* deployments.

Whether supporting a mobile workforce, contingency staff or a BYOD programme, Imation says its device allows enterprise IT administrators to provide a *Windows* mobile corporate environment containing all the company's IT security tools and policies to protect users, no matter where they work.

The *W200* features a fully functional version of *Windows 10* or *8.1* that is identical to the corporate desktop, and can be used by booting directly from the USB drive on any *Windows 7* or higher compatible computer, including tablets and Macs.

To ensure the device is centrally secure, *IronKey* allows administrators to leverage their company's existing Microsoft infrastructure using BitLocker software-based encryption. And in the event of power outages, a PC crash or disasters,

The IronKey Workspace W200 contains a Windows mobile corporate environment along with all IT security tools and policies.
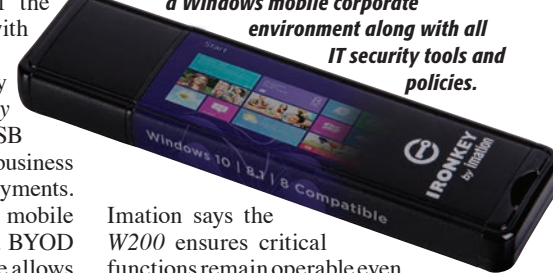
Imation says the *W200* ensures critical functions remain operable even if a company's headquarters is closed or inaccessible.

The firm adds that its *IronKey Windows To Go* system can act as a secure or standardised container in which IT can provide a monitored and controlled *Windows* environment to run a specific application or service, such as a Citrix client, VPN, SaaS, etc.

It says this enables administrators to protect against key loggers or malware on the host machine, and to avoid costly IT security deployments, auditing of BYOD or other unmanaged devices.

The *W200* is said to have passed military ruggedness tests, and is available from £64 for a 32GB device. ∎
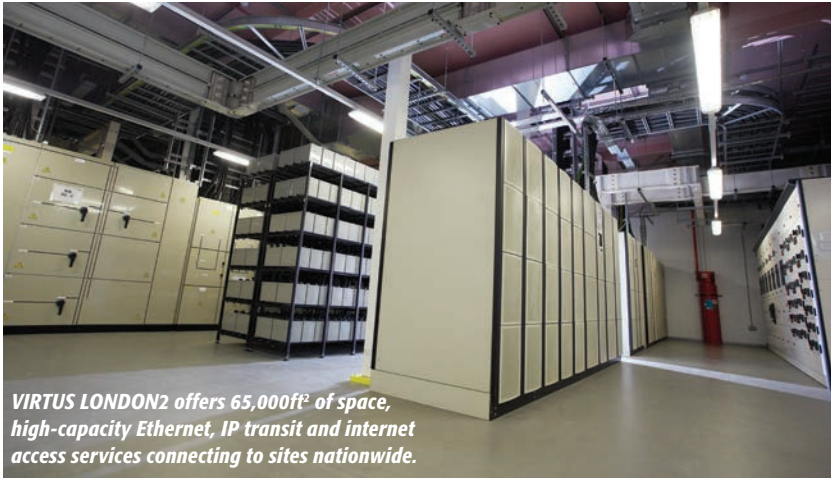
VIRTUS LONDON2 offers 65,000ft² of space, high-capacity Ethernet, IP transit and internet access services connecting to sites nationwide.

SSE to light up new LONDON2 data centre

VIRTUS' new flagship data centre in Hayes is using a host of connectivity solutions from SSE Enterprise Telecoms, including its *LIGHTNOW* optical networking service.

LONDON2 offers 65,000ft² of tier 3 design certified data centre space. Following SSE's investment in the facility, customers will now benefit from high-capacity Ethernet, IP transit and internet access services connecting to sites across the country.

They will also be able to take advantage of *LIGHTNOW* which offers high-capacity, ultra-resilient wavelength connectivity. The service is already being used by 21 data centres in London, including VIRTUS' LONDON1 in Enfield, as well as nine sites in Manchester *(see News, April 2015).*

Matthew Larbey, product strategy director at VIRTUS Data Centres, says: "With increasing demand for our data centre services, largely due to our strategic position – which is close enough to central London for low latency performance but far away enough to meet stringent government and financial services business continuity standards – we needed a network provider that could keep pace without risk of failure."

■ In a separate announcement, SSE Enterprise Telecoms will upgrade Brewin Dolphin's (BD) network to support its enterprise mobility strategy.

BD is said to be one of the country's largest investment management and financial planning firms, and has more than 28 offices throughout the UK and Channel Islands.

SSE has installed three 100Mb internet circuits to connect the company's busiest UK offices (London, Newcastle and Edinburgh), while new high-speed Wi-Fi connectivity aims to deliver secure network access to employees, customers and guests.

According to SSE, the entire project was completed in less than six weeks. It is now providing BD with a full service wrap, ensuring that the new network is always working optimally. ■

THE WORLD ACCORDING TO…
Alastair Waite, EMEA data centre business group, TE Connectivity

Being dense: the smartest way of making the best use of floorspace

The main purpose of a data centre is to run applications and store data within an enterprise or the cloud. Over the last few years, video-based and data intensive business applications have expanded rapidly reaching levels of adoption beyond any initial expectation. This has been facilitated by the development of cloud services and mobile web solutions. As a result, the amount of data being processed has grown significantly, fuelled by a global economy that requires data access at all times, from all locations.

In order to generate profitable growth in such an environment, accommodating as much equipment in a data centre as possible has become critical. It also brings the need for more white space.

However, data centres are very expensive facilities with a cost per square metre that can reach up to €15,000. This puts budgets under pressure. Hence, making the best use of every square metre becomes a priority for centre managers.

Increasing physical infrastructure density can help address this issue. New, high-density solutions coming on the market provide the opportunity to do more within the same footprint while not losing the flexibility to easily perform MACs. For example, a high-density patching chassis with the maximum density of fibre ports, significantly increases space utilisation.

Indeed, a high density fibre optic chassis enables the expansion of storage and computing capacity within the same floor space and lowers the cost per point of connection for data centre managers and network operators.

It reduces the number of racks deployed, resulting in reduced floor space usage with the associated cost savings. The ability to easily move, add or change elements, provides further agility, flexibility and room to grow.

Ultimately, businesses require a highly resilient, flexible platform to promote enterprise growth and accommodate the next generation of business applications and services. Data assets will only continue to grow. It is therefore becoming paramount that manageable, high-density equipment is part of the data centre infrastructure strategy.

Former FBI agent to address changing cyber security threats

Cryptzone, the US-based network security specialist, has hired a former FBI agent as its chief security officer.

Leo Taddeo was in charge of the bureau's special operations/cyber division and is coming to London to discuss security matters on 13 November. At the *Let's Talk Cybersecurity* seminar, he will look at the changing landscape of cyber security and how attacks have increased and developed to include organised crime, technical hackers, hacktivists, terrorists and nation states. Cryptzone says Taddeo will provide "thought-provoking" dialogue to help solve the problems that exist today, and help enterprises plan for what's coming tomorrow.

Kurt A. Mueffelmann, the company's CEO and president, adds: "Organisations are recognising they need to fundamentally re-architect their security infrastructure, and are eager to discuss with their peers and industry experts the best practices for doing so."

While at the FBI, Taddeo led more than 400 agents and professional support staff in cyber investigations, surveillance operations, information technology support and crisis management. He oversaw high-profile cases, including Silk Road, Blackshades and JP Morgan. ■

While at the FBI, Leo Taddeo led more than 400 agents in high-profile cyber investigations.

Interoute to acquire Easynet

Interoute will acquire European managed services provider Easynet in a deal valued at £402m. Interoute says the planned merger will enable both companies' customers to access a broader range of products and services. In addition, it says the acquisition will bring an "enhanced and expanded" set of skills and capabilities to serve clients across the world. Interoute provides a range of connectivity, computing and communications products and services to organisations such as UEFA, the European Space Agency, Saxo Bank, amongst others. Easynet's customer base spans national and global enterprises as well as public sector entities. ■

Future's brightsolid in Aberdeen

Dundee-based brightsolid is planning to open its £5m state-of-the-art data centre in Aberdeen on 1 October. It says the tier III facility is designed to serve enterprises, the public sector, and the oil and gas industry. With a PUE rating of 1.25 or better, the 2,200m² site will initially comprise 400 high density racks with a capacity of 2kW per rack. But it has the capability to expand to twice this size, allowing for storage of 400PB. The facility uses the Ecrofris energy efficient cooling system, an emergent technology designed to reduce the risk of contamination and enable power densities of up to 25kW per rack. A 100G link directly connects the data centre to London, the North Sea and beyond. ■

OpenText and SAP to accelerate cloud managed services

OpenText and SAP are teaming up to provide B2B managed services capabilities to multinational businesses. OpenText offers an outsourced solution for managing the day-to-day B2B operations required when exchanging a wide variety of transactions with trading and business partners. The solution includes managing the *OpenText Trading Grid*, a B2B integration platform that is part of the OpenText Cloud, which is claimed to currently have more than 600,000 partners connected to it. Working with SAP and its subsidiary Ariba, OpenText says it will provide a solution that enables users to improve time to revenue, reduce costs, and helps advance digital transformation. ■

London councils plan to launch shared ICT service

Islington and Camden Councils have unveiled proposals to establish what's described as a "groundbreaking" shared ICT service. They say it will save £4 million a year over time, as well as help consolidate expertise, exchange knowledge and share best practice across both local authorities.

As a result of further government cuts, Islington and Camden are looking to save up to £185m between them by 2018/19.

Under their proposals, a joint committee made up of representatives from both councils will meet in public to oversee the new ICT service, and a single post will be created to lead and manage it. The costs and savings of the project will be shared equally between the two boroughs.

Together, the two organisations employ more than 300 ICT staff and have a long-standing track record of collaboration. They already share their public health and internal audit services, and jointly use a wide range of technologies to conduct their business and deliver enhanced digital services for residents, as well as platforms to enable mobile working for staff, thus saving time and money.

At a meeting held on 9 September, Camden Council's cabinet agreed to proceed with the proposals. Islington Council's executive will make its decision on 24 September. If given the go ahead, the two councils expect to launch their shared service by April 2016. ■

Camden (pictured) and Islington councils have collaborated for many years, and already share their public health and internal audit services.

Verizon is first to offer Cisco's SDN technology

Verizon Communications has unveiled a new software-defined service using Cisco's *Intelligent WAN (IWAN)* technology.

The US-based wireless operator and Cisco plan to market and sell the managed solution to their respective enterprise customer bases in North America beginning in September, with a rollout in EMEA expected by the end of the year.

IWAN is said to harness the power of the internet with the performance and reliability of a private IP network.

Verizon says it enables integrated application optimisation for faster performance; robust, highly secure and certified routing platforms; and low operational cost thanks to intelligent path control that fully utilises both MPLS and the internet.

It adds that new sites and services can also be provisioned faster with a hybrid WAN to support key business initiatives.

"Verizon and Cisco have joined forces to enable a whole new generation of networking solutions that help companies operate more efficiently and with greater agility," claims Shawn Hakl, Verizon's VP of enterprise networking and innovation. "Our focus is to help enterprises improve the performance and security of their networks by using the most effective means of connecting mobile users to cloud applications."

The solution will be supported by Verizon's IT consulting group which helps enterprises manage their transition to software defined networking. ■

VDI storage helps hospital simplify IT management

The Royal Orthopaedic Hospital (ROH), one of the largest orthopaedic units in Europe, is using a VDI solution from Atlantis Computing to boost its data storage infrastructure.

The software-defined solution now supports 700 new thin clients, 100 laptops and 70 tablets. It is claimed to have resulted in a 92 per cent reduction in desktop login times, freeing up 30 minutes a day for clinicians.

Previously, the ROH had three separate storage devices that offered a total capacity of 10TB. According to Atlantis, the hospital was facing a looming crisis as the storage was not only very time consuming to manage, but was also quickly running out of space.

The Royal Orthopaedic Hospital was apparently facing a looming crisis as it was quickly running out of storage capacity.

As a result, ROH decided to adopt a VDI solution. Atlantis' software-defined storage platform underpins all of the hospital's virtualised desktops whilst also supporting its new remote access and BYOD strategies. The vendor says employees can now access medical applications and files from personal mobile devices in minutes, as its software operates in RAM, rapidly improving productivity.

"It used to take employees 15-20 minutes to boot up their computers and log in," says ROH network manager Mark Bemrose. "With the Atlantis software, this process now only takes 90 seconds. This time saving is hugely beneficial for the hospital's clinicians who log in and out several times a day from different locations as they move between operating theatres, wards and offices." ■

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Sierra Wireless simplifies Internet of Things with Acceleration Platform

Sierra Wireless has launched what it says is the industry's first integrated service platform that combines cloud, IoT hardware, and managed connectivity services to support worldwide deployments.

The new *IoT Acceleration Platform* is said to be unique because it provides global multi-operator coverage by combining SIMs from Sierra Wireless and third-parties, all managed by a single connectivity system.

In addition, Sierra says it has natively connected its *AirVantage* cloud platform to Google's cloud-based services which support the creation of anything from simple websites to complex applications.

Customers can collect and store sensor data in the *Google Cloud Platform* and use the tools it provides to build custom analytics, Big Data, or IoT applications. Sierra reckons this will enable them to leverage the data collected from the devices and their connected assets in a broader context, thus increasing its value.

As a result, the company claims it can now provide customers with a comprehensive end-to-end solution that includes the hardware, *AirVantage*, and managed connectivity.

Emmanuel Walckenaer, Sierra Wireless' SVP of cloud and connectivity services, says reducing the complexity in building and deploying IoT connectivity solutions is critical for users: "Our fully integrated *IoT Acceleration Platform* is designed to empower customer innovation and get IoT solutions to market faster with the ability to scale and grow quickly." ∎

Sierra Wireless' Emmanuel Walckenaer says reducing IoT complexity will help customers get products and services to market quickly.

Sabio aims to make contact centre technology deployments easier

Contact centre technology specialist Sabio has extended its network services portfolio with a range of new data connectivity offerings.

The services cover SIP trunking support, internet access, VPLS and MPLS WANs, as well as data centres with the colocation and hosting of customer equipment.

Sabio says its aim is to simplify the deployment of end-to-end customer contact technology solutions, including the provision of its *OnDemand* hosted SaaS contact centre platform.

The firm reckons it can now integrate all aspects of data networking, from the data centre through to the customer environment, ensuring end-to-end service provision as part of its comprehensive hosted offering. It adds that its network services can be delivered as part of a unified system, ranging from the PSTN to the delivery of calls to an agent.

In addition, Sabio also offers point-to-point leased line circuits as well as a VPLS that allows geographically diverse locations to connect together as if they were on the same LAN.

It says the VPLS extends plug-and-play functionality in the LAN across the WAN. This then facilitates the creation of a completely private Layer 2 virtual cloud that can integrate all of an organisation's offices to achieve any-to-any connectivity, regardless of location. ∎

# Virtual private servers promise greater control and flexibility

OVH, which claims to be Europe's largest internet hosting company, has launched its latest generation of virtual private servers (VPS) in the UK, offering customers a choice of either an SSD- or cloud-based system.

The firm reckons its VPS services are a step up from traditional web hosting, giving many customers greater control and flexibility without having to move to a dedicated server immediately.

The cloud-based service is available in three configurations, ranging from one *vCore*, 2GB RAM and 25GB storage, to four *vCores*, 8GB RAM and 100GB storage.

OVH says it guarantees a bandwidth of 100Mbps using NVMe *Ceph* drives which provide high availability, scalability and fault-tolerant storage to guarantee that services stay up and running. The firm further backs this up with a 99.99 per cent SLA commitment.

It also plans to include additional features to the cloud service such as multi-protocol backups, snapshots and automated backups.
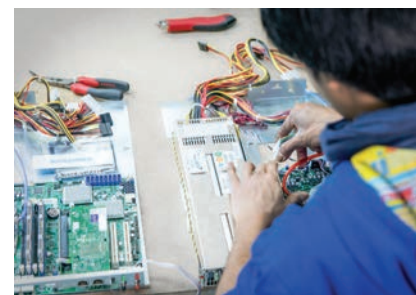
OVH's SSD VPS is available in configurations that offer up to 40GB.

The SSD VPS is available in three configurations, ranging from 2GB RAM and 20GB SSD to 8GB RAM and 40GB SSD.

Both services come with customisable anti-DDoS protection, unlimited reboot and reinstallation, and an OpenStack KVM to manage the VPS. They also support load balancing to boost peak traffic performance, failover IP to ensure business continuity, and IP geolocation to optimise local search rankings. ∎

VIEW FROM THE TOP
Tom Gutteridge, product marketing manager, Azzurri Communications

What does SI stand for now?

Traditionally, SI stood for 'Systems Integrator' – a company whose role it was to deliver a bespoke computing system by building, testing and, of course, integrating various vendors' hardware and software offerings.

Now, with the cloud revolution having firmly taken off, this role is increasingly waning. Or rather, it's changing.

Ubiquitous connectivity, fixed, mobile or both, is what has enabled the cloud revolution. Put simply, this is the ability to site veritable acres of increasingly virtual servers in highly resilient and physically secure centres whilst making them and the services they provide appear as if on the desk or tablet in front of you.

Technology that was once delivered in separate boxes of hardware and software, installed and integrated on-premise using physical connectors, is now largely software-based and integrated by industry standard plug and play APIs.

This means the IT department's expectation of SI's role has changed. The increasing appreciation and evidence of the benefits of cloud computing has meant that businesses want to see more of these services than systems – and ideally integrated together for ultimate ease of management and cost efficiency.

In short, the Systems Integrator is having to give way to the Services Integrator. But a successful evolution depends on exactly which services are being integrated. Often, this is not conducted in one location anymore, and is typically dispersed with the components supplied and managed by OEMs in their respective data centres. And instead of the connector cables being measured in metres they are measured in (hundreds of) miles – and with better results.

This distinction between a Systems Integrator and a Services Integrator will only increase in importance. Understanding this difference is key: if customers are going to take advantage of this change, it's not a case of choosing one or the other – it's actually a case of making sure they have the best of both. Customers need the skills, broad knowledge and experience of a System Integrator, while also having the outlook and modern approach of a Services Integrator.

The appliance of science

How network hardware and services are boosting the science and technology sector.

Rock solid power management for VSTONE

Founded in 2002, E4 Computer Engineering specialises in the production of customised high-performance computing infrastructures for scientific and research environments, as well as data centre solutions for enterprises.

The company's customers include prestigious European research centres such as CERN in Geneva, and it recently received an award from Italy's National Institute for Nuclear Physics for providing top quality hardware solutions.

Amongst its latest data centre products for enterprises, E4 has developed *VSTONE*. With server, storage, network and virtualisation capabilities all integrated into one system, its innovative converged infrastructure aims to provide a simple, flexible and scalable data centre platform. The company needed UPS technology

for *VSTONE* that could guarantee power supply continuity, ensure data integrity and integrate easily with VMware's *Vsphere* and Microsoft's *HyperV*. The UPS also had to offer scalability and energy efficiency.

To overcome these challenges, E4 turned to Eaton's virtualisation-ready *9PX* UPS which features *Intelligent Power* software. This integrates power management functions and plugs into VM control systems, enabling users to monitor their entire IT installation from the same location using the same management pane. Eaton says the software can also be configured to automatically trigger the live migration of VMs to a backup facility.

Thanks to the *9PX*'s *Powerware HotSync* load-sharing technology, Eaton says paralleling can be used to gain redundancy and add capacity to the system depending on future infrastructure growth. The technology can also be used to parallel power converter modules within a UPS.

According to the vendor, the *9PX* offers 95 per cent efficiency in online double conversion mode and 98 per cent in high-efficiency mode. As well as a power factor of 0.9, its claims the UPS delivers 28 per cent more power than other devices in the same class, with 40 per cent less energy.

E4 also deployed Eaton's ePDUs which were selected because of their patented mounting system which is designed to fit any standard 42U IT rack.

Loris Lignola, E4's enterprise business unit team leader, says: "Thanks to Eaton's power management solutions, we have succeeded in designing a totally integrated, scalable and fault tolerant offering for private clouds which ensures business continuity. This will offer our customers a great opportunity to save on startup and integration costs whilst ensuring storage integrity and energy savings.

LANDESK gets flash with its storage

LANDESK Software has completed a comprehensive upgrade of its legacy storage infrastructure using Nimble's adaptive flash platform Fibre Channel arrays. As a result, it's claimed the company can now optimise applications and workloads across its IT environment while lowering the total cost of ownership for its storage infrastructure.

LANDESK says its end-to-end service management solution unifies and automates the delivery of all the assets users need across mobile, cloud, and personal computing environments. To keep pace with escalating demands, the company needed to upgrade the performance and capacity of its ageing storage infrastructure, EMC's *VNX*. This upgrade required at least an additional half a rack of *VNX*s to meet capacity requirements, and would result in increased costs for maintenance and support.

As an alternative, LANDESK was looking for new storage infrastructure that offered greater longevity than its previous system, had the ability to non-disruptively scale, and could achieve all-flash performance without costly outlay.

Nimble provided the answer with the *CS300* Fibre Channel arrays which feature its *CASL* architecture and *InfoSight* cloud-based management system.

LANDESK is now using the arrays to run a broad range of applications and workloads including SAP databases, *Microsoft Exchange* and virtual servers. It was able to replace half a rack of its previous storage system with just 9U of Nimble storage, and is said to have achieved a 1.5x compression rate for its mixed workload environment saving close to 6TB of space.

The platform also provides LANDESK the flexibility it needs to seamlessly grow its IT environment. Since upgrades are modular and dynamic, Nimble says storage performance and capacity can be scaled independently and in line with application and user requirements.

The vendor adds that unlike LANDESK's previous system, its arrays are able to scale without having to rip-and-replace storage infrastructure, eliminating downtime along with the associated cost, complexity and risk.

Jeremy Balter, LANDESK's senior systems administrator, says the Fibre Channel arrays were fully operational in very little time because Nimble had removed all of the complexity from the configuration process.

He adds: "We're realising additional savings with the data centre footprint reduction and ability to scale non-disruptively. With our lean IT organisation, it is essential that we simplify our IT infrastructure to maximise efficiency."

Vigor means mail supremacy at Global Technology

Global Technology provides a specialised solution to more than 2,000 customers, such as those on board ships or in remote locations, who have to send email using expensive satellite links. The company's flagship product, *GT Mail*, has been designed to significantly reduce the amount of data transmitted, ensures quick and reliable message delivery, and cuts the cost of connectivity.

Global Technology has installed two SDSL links that take in the satcoms at its data centre in Warrington, along with IP servers that handle the re-formatting, storage and forwarding of mail. Key support staff need secure access to this data centre round the clock from outside the office as necessary. The company also has a backup site at a confidential location for disaster recovery purposes.

Global Technology needed a high capability, firewalled router to terminate the SDSL links with high priority throughput for satellite data. It was looking for a fully redundant configuration to ensure seamless operation in the event of hardware failure with resources backed up in Warrington or at the remote location. Secure remote access was also essential for staff working away from the premises.

Global Technology installed DrayTek's *Vigor 2950* router/firewall in both its data centre as well its backup/mirror office. DrayTek says the device offers high-performance with load-balancing and WAN-failover capability, as well as a secure VPN. Each *2950* is connected to a pair of SDSLs using the *Vigor 3100* SDSL modem/routers.

In the event of a hardware failure, the *2950* automatically switches to the second SDSL without loss of service. There's an identical setup at the remote backup site allowing for continuance of service in the event of a major failure at Warrington.

As well as satellite data, Global Technology's internet connectivity is used for regular business communication. DrayTek says its routers' QoS feature ensures that satellite traffic is always given the highest priority over all other traffic to ensure the best performance for customers.

For its staff who work from home or remotely, Global Technology runs encrypted VPN tunnels into the *2950* which enables secure access to office network resources.

> THE REVOLUTION GOES ON

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Video-over-IP demands greater network management as users make video calls and leave video messages on the same basis as voice calls and voicemails.

Observing the right protocol

What do you need to know about managing IP-based networks? JAMES HAYES finds out.

IP is a technological success story. Starting life as a connectionless datagram service in the 1970s, since coupling with TCP it has become the predominant way of relaying data packets between network hosts.

It has also proved its worth as a communications protocol in LANs, and as such has served as a unifying technology where computer resources want to connect. In this capacity, IP has enabled the various proprietary and vendor-specific comms protocols, hitherto found on corporate IT systems, to be superseded.

With mass-adoption, IP brought continuity and its openness enabled interoperability both inside organisations as well as out into the wide area. Alternative, and sometimes contending, communications protocols have been largely (but not entirely) marginalised. Thanks to IP, network managers had fewer thorny integration projects to bang their heads against and were able to turn their attention to more innovative IT delivery programmes.

Little wonder then, that IP's status in the networking stack hierarchy is assured. "As an enterprise LAN communications protocol, IP is now king," proclaims Leon Adato, network management 'head geek' at network tools vendor SolarWinds. "From now on only a few – very few – new specialist applications will be non-IP-compliant. I do not see that [older] applications that are not fully-integrated into all-IP networks – and therefore cannot be controlled and optimised by common management tools – will be maintained indefinitely."

Keeping it in-house

Although IP may have resolved many of the compatibility issues of the past, the advantages it holds are giving rise to a new set of problematic issues for those tasked with running enterprise networks. IP may be 'just' a communications protocol, but it is one that's arguably

both a symptom and a cause of complex emerging challenges for the delivery of enterprise IT.

Most evident among these symptoms is the volume growth rate in networked traffic and, more specifically, traffic across data networks generated by commercial activity. The most recent edition of Cisco's Visual Networking Index (VNI) forecasts that global business IP traffic will grow by a CAGR of 20 per cent over the next four years, totalling some 29.9EB per month by 2019 *(also see News, Jun 2015)*.

Furthermore, business traffic will increasingly include a wide range of corporate application types – from high-end CAD/CAM and collaboration packages, to VoIP, unified communications and video-conferencing. The VNI predicts that internet-borne video traffic will account for 65 per cent of business internet traffic before the end of this decade – a rise of about 40 per cent on current proportions.

It is the combined impacts of volume increases in business IP traffic and the enhanced complexity of traffic types contained within those volumes that are the most quantifiable of the new IP challenges. While network management platforms have been around for as long as networks themselves, the scale and pace

of change now confronting this critical function calls for some fresh thinking around how they are put to use.

From a technological, budgetary and human resources perspective, managing an enterprise IT estate is a demanding job. Of course, hard-pressed IT directors have other options, and given the welter of advocacy pushing the benefits of cloud-based services and other forms of ICT outsourcing, it might seem counter-rational for bigger organisations to stick to the traditional in-house IT function ethos. But to their way of thinking, challenges such as: legacy system migration; network access provisioning; equipment upgrade cycles; security; implementing tailored management regimens; and balancing the shifting dynamics of the relationship between IT personnel and internal 'consumers', are best handled in-house.

Laggardly legacy

There remain many non-IP-native legacy systems chugging away in the world's computer rooms and data centres. These systems continue to serve as a platform for critical or business support applications, and as such also continue to constitute another technological progress challenge for those running IP networks.

Some legacy systems perform the tasks that they were designed to do when they were first fired-up back in the day, and may also still receive ongoing support from the vendors who supplied them. Techniques such as encapsulation let them transport the data they send and receive over IP.

> ## "As an enterprise LAN communications protocol, IP is now king."
>
> *Leon Adato,*
> *Network management head geek,*
> *SolarWinds*

But the technological issues they present are most often ones of system visibility and manageability. Modern IP network management tools aim to provide a technologically holistic view of all network assets and resources, and this is especially important for the most current resource management ideologies, such as service-based/software-defined networking.

Some workarounds have proved effective in extending the inter-operational life-expectancy of many an ageing legacy platform, but these were not intended to be kept going indefinitely.

Organisations have also been prioritising new ICT projects over migration, if outgoing and incoming systems can be made to co-function to an acceptable operational level. In these straitened economic times, many companies are holding onto legacy systems in order to 'sweat' their IT assets.

However, the sense of doing all this is undermined when the shortcomings of legacy systems are shown up by the advanced capabilities of IP-based infrastructure, which include both opex efficiencies from lower running costs, and inbuilt reporting facilities able to reveal an application's contribution to business profitability to inquisitive directors.

One under-recognised inhibitor to legacy-to-IP migration that IT teams should beware of is the belief that such projects must be undertaken on a 'one-to-one basis'. This is when user specifications for a new IP-based application seek to copy the legacy system in almost every feature.

The fact that many of those old-system features are never used and have been superseded by innovation is usually overlooked. IT managers may be anxious to cover themselves 'just in case', so time and money goes into recreating unnecessary functionality.

In this context, facilitating an open and informed approach to change when moving between old and new systems is another challenge that comes with a move to IP.

Wi-Fi wherefores

Advances in the on-premises capabilities of Wi-Fi over floor-to-floor cable infrastructures could increasingly come to represent another challenging aspect of the overall shift to IP-based networking.

Consideration of a WLAN as a viable alternative to a fixed LAN needs to balance several contending factors, and pointers in favour of on-site Wi-Fi as a money-saver and deliverer of flexibility should be tested against scalability and expectations in regard to utilisation patterns *(also see feature 'Fixed or mobile in the unified comms world?', Apr 2015).*

Enterprise-wide Wi-Fi deployments may be technically feasible, but have to be assured against total costs; and there's no point in paying to extend a hotspot into a part of the building where no employees go to work.

That said, driven by the wireless-only access capabilities of most laptops, tablets and smartphones, organisations of all sizes are shifting rapidly to wireless-only, according to Ronan Kelly, CTO EMEA/APAC at data/telecoms product vendor ADTRAN: "Wi-Fi is transitioning from a network of convenience to being mission-critical for businesses – and this transition is happening quickly."

Kelly goes on to warn that this should not be regarded simply as a case of one technology out-evolving another.

"It has huge implications for businesses that have neither interest nor skills [in] running Wi-Fi networks. Because unlike their conventional wired network, the Wi-Fi network is subject to performance degradation, and also to security breaches from outside of their building premises if it is not managed to the same level of competence."

Alcatel-Lucent Enterprise agrees Wi-Fi is becoming more ubiquitous in offices. But Peter Tebbutt, the vendor's general manager for UK and Ireland, adds: "Introducing an in-building Wi-Fi network co-existent with wired LANs is a fundamental change, because you cannot really change one part of the IP network in isolation – it affects the end-to-end network in a different way."

Knock-on effects may not be immediately apparent. One example could be the way some users with company laptops switch to using visitor Wi-Fi as their primary point of access, and disengage their computers from the fixed LAN altogether. This could be because the nature of their job has changed and they prefer to work away from their assigned desk space, or perhaps they think that the visitor Wi-Fi is 'faster'. As a result, network administrators 'see' fewer users plugged-in to the fixed LAN, while Wi-Fi access demand creeps up.

However, as Tebbutt suggests, network engineers should be mindful of Wi-Fi "honeymoon periods". If on-premise Wi-Fi

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> *General manager,*
> *Alcatel-Lucent Enterprise, UK&I*

utilisation increases per-head, then fresh bandwidth contention issues could crop up that will reshape users' performance expectations, especially if the reason why they are accessing the Wi-Fi network away from their desks is to participate in an online conferencing session. "As LAN video explodes, you will then have to ask if your local Wi-Fi is up to the job," advises Tebbutt.

According to Pascal Tangaprégassam, product manager at network and IT planning software vendor InfoVista, such video services over IP raise new challenges for network managers, and their technical competences will be thoroughly tested: "The network team has to face a new situation with video/IP. They cannot act as bottlenecks, preventing the use of this new form of communication and collaboration between users, but rather as enablers of new video-based services with all the challenges."

With video over Wi-Fi it is too early to assess what affect the forthcoming 802.11ac specification (aka 'Gigabit Wi-Fi') operating at 433Mbps-500Mbps (single link) and 1Gbps-1.3Gbps (multi-station) in the 5GHz frequency range will have. But installing more capacious Wi-Fi is of course another capex item to be budgeted for.

All that may also lead a move to an all-wireless LAN – and that will bring challenges that are in many respects unforeseeable and therefore partially unmanageable (in the initial stages at least). Some say wireless is unpredictable compared to more prevalent wired infrastructure, and network managers will therefore need new and perhaps quite differently designed tools to perform tasks like troubleshooting.

Furthermore, a strategic transition to in-building Wi-Fi might not necessarily mean a reduction in the number of installed wired IP network ports to be managed by the IT function. These ports may be claimed as APs for Wi-Fi propagation, or by IP-manageable workplace equipment such as printer-photocopiers, CCTV cameras, even vending machines.

Sprinkling QoS about like "fairy dust"

This leads to another complexity arising from all-embracing IP: that of endpoint device management. Previously, networks just had to deal largely with stationary devices – desk PCs and docked laptops. But now, endpoint device management must also embrace mobiles, laptops, tablets – maybe even smartwatches.

And then, of course, there are applications in the evolving Internet of Things. SolarWinds believes that this will force a fundamental rethink on how IP is managed. Adato suggests that the crunch point will come in the vexed area of quality-of-service. He reckons that the QoS concept is abused by management execs who have superficial comprehension of the factors governing overall network performance delivery.

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"They sprinkle QoS about like fairy dust. It will be a non-issue until the point where [network overload] causes a QoS dip that results in, say, a lost trading opportunity and then all hell breaks loose, even if network managers had actually forewarned of this possibility."

Adato adds that with board-level directors complaining and users raising tickets for what they assume are hardware or software problems, network engineers will find themselves "hammered at both ends".

One approach to regaining control of IP network resources is to adopt a policy-based management strategy. As a generic solution, this aims to enable the administration of enterprise networks via the activation of a policy set that effectively mandates usage access rules and, for instance, the allocation of IT resources.

The useful feature of policy-based management is that the behaviour of managed network devices can change dynamically within the thresholds of the set rules without having to keep re-adjusting the device directly or having to disengage devices to make changes. Users or groups can have tailored policies applied to their profiles, and these determine what functions (available QoS thresholds, bandwidth, security, etc.) they can and cannot access over a given schedule. The aim is to ensure that users are assigned network resources appropriate to their agreed needs.

Video and UC

The key characteristic of video is that it is latency-sensitive as well as fairly unpredictable over the course of a day. As a result, InfoVista believes policy-based network management is vital where video-over-IP is a supported application. Tangaprégassam says: "Much like regular IP phone calls, video-over-IP network flows can happen at any time and last from a few seconds to a few hours, such as for a video-conference of board meetings, streaming of online training, and so on."

He goes on to point out that video-over-IP imposes a new governance of the network as enterprise users step up from the received notion of 'scheduled' video interactions, and start making video calls (and leaving video messages) on the same basis as most voice calls and voicemails are made.

Video-over-IP has emerged as the most popular delivery method for a range of organisations looking to upgrade their AV communication services. For instance, it enables organisations to provide access to TV news channels to inform corporate decision-making, and enables staff and visitors to receive video content on fixed screens and mobile devices. At the same time, technology managers are implementing IP/video delivery systems for workforce training, and to enhance staff communications.

Video applications will become more popular with more ubiquitous standardisation on IP inside and outside the enterprise infrastructure, helping to resolve some of the latency glitches that used to cause frustrations.

"Because we are seeing a lot more IP in the WAN – thereby creating an all-IP end-to-end network – latency is minimised, with no data conversions needed," says Clive Longbottom, key analyst at Quocirca. "This allows far more software-defined actions to be put in place. The software-defined, hardware-assisted, IP-only network will be the way to go, all driven by policy at the software layer."

The addition of unified communications platforms to existing IP infrastructures presents another case-in-point. As companies rollout UC projects, they will encounter a number of pitfalls if they do not fully understand the composition and volume of traffic on their networks, warns Matt Goldberg, VP global strategic solutions at network monitoring specialist SevOne.

"Look at key components of the UC delivery path such as interface utilisation and QoS queues. Network and operations teams can leverage this gathered data through metrics, flows and logs, to provide a holistic view into behaviour on the network."

These three methods of what Goldberg describes as "data ingestion" in turn provide insight into the infrastructure, and enable the network management team to further ensure that the infrastructure is able to handle the additional traffic load from the UC rollout.

"As UC is typically introduced in stages for global organisations, these methods also provide additional insight into how the infrastructure is performing as each location is brought online," he says. "It also solves visibility issues, notifying the user of any issues in the service once it's fully integrated."

Policies and people

Alcatel-Lucent's Tebbutt predicts that a policy-based approach to IP network management will become a fundamental practice in vertical sectors such as hospitals and other institutions where designated users must have assured network resources at their disposal pretty much at all times.

He adds that HR departments must also have a place in this debate. CIOs must liaise with personnel directors over the potentially prickly question of what users are and aren't permitted to do. "There's a human challenge here [for IT] because they must set policy and enforce it, but at the same time not be barriers and bottlenecks."
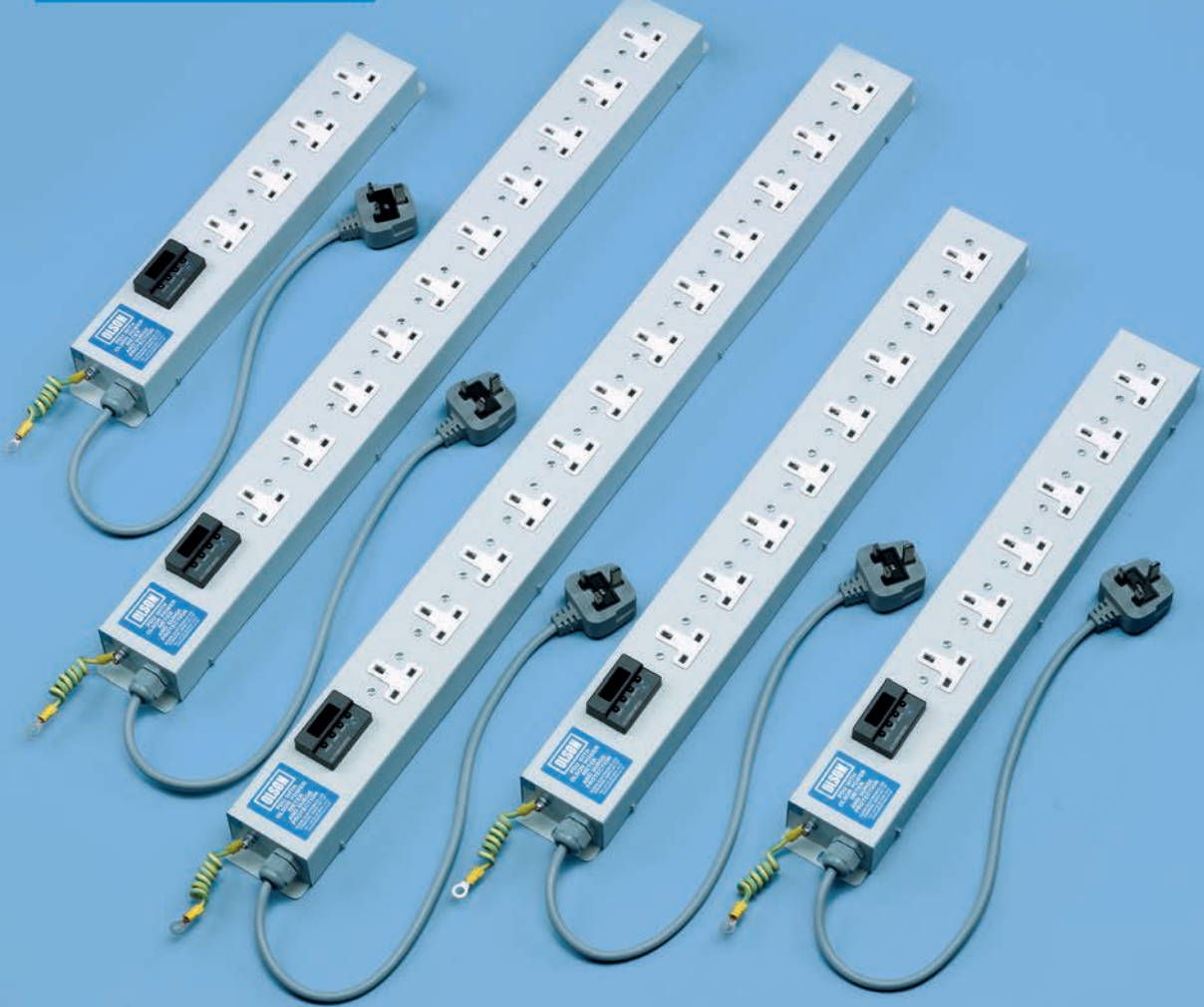
The transition to all-IP could therefore bring a fairly profound change between those engineering the network and those who rely on it for their daily needs. The setting of users' requirements could change from being a periodical assessment exercise to an evaluation that takes place on a weekly basis, where provisioning to different parts of the enterprise could be agreed on the basis of differing need, not as an open-ended resource.

While this should result in a more responsive and focused service for end-users, the new regimen may also call them to develop a better understanding of how they 'consume' IT services. Ultimately, they could end up managing their own networks and take on more responsibility for planning their future needs. ■

off-the-shelf: managing & monitoring

Keeping control

The latest solutions to help you deal with the complexities of managing and monitoring the network.

Emerson Network Power (ENP) has enhanced *Trellis*, its data centre infrastructure management (DCIM) platform.

It now includes RESTful APIs (representational state transfer application programming interfaces) to simplify integration between DCIM and applications running inside data centres without changing the way those centres operate.

The APIs enable *Trellis* to 'speak' to business management systems, web applications, mobile devices, and more. The company says this helps open bi-directional access to data across platforms and systems, and allows IT to accurately allocate cost by line-of-business or customer.

ENP adds that this also allows critical data to be accurately collected and stored in the platform. It says operations teams can then use *Trellis*' "advanced" analytics to produce actionable information to support decision-making and measure performance at every level, thereby transitioning to a data-driven operational model.

The new capabilities can be applied across all data centre operating models including enterprise, cloud, lights-out and hyperscale. ENP claims operators will be able to focus less on managing the physical infrastructure and more on ensuring that IT applications are available for running the business.

Other new features include enhancements to change planning capabilities to give users the ability to take advantage of the capacity search feature from any point in time. Benefits of this include greater insight into port capacity across the enterprise, and reduced time for planning and new equipment deployment.
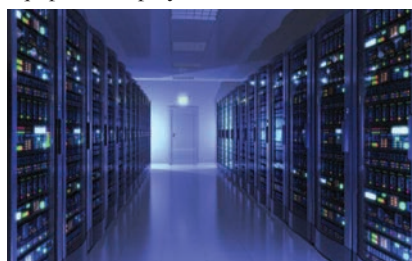
Lancope reckons its new *UDP Director* will "dramatically" simplify data collection and distribution across enterprise networks. The appliance is said to be a high-speed, high-performance solution that enables streamlined network and security monitoring while saving valuable configuration time and bandwidth.

According to Lancope, many network devices can only send messages to a single log management system, making infrastructure changes time consuming and costly. It says the *Director* solves this problem by providing a single destination for all UDP data formats (NetFlow, SNMP, Syslog, etc.), and then forwarding the data in a single stream to one or more locations.

By aggregating disparate data and directing it to various collection points, Lancope says its appliance preserves network and data centre performance, improves network security, traffic analysis and monitoring, and reduces configuration time for network infrastructure.

It adds that it also allows for less data duplication and bandwidth consumption, decreases unplanned downtime and service disruption, and streamlines change management.

The appliance has been designed so that source IP addresses remain the same – as a result, Lancope says devices do not need to be reconfigured multiple times.

UDP Director (formerly known as the *StealthWatch FlowReplicator*) is available as a physical or virtual appliance.
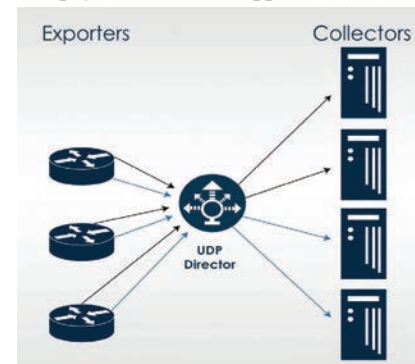
Mobility management specialist **NetMotion Wireless** has unveiled a new version of its data analytics and visualisation software for any organisation with a mobile workforce.

The company says mobile employees are using devices, networks and SaaS applications outside the ownership and control of their IT departments. It believes that this makes it more difficult to troubleshoot problems when they arise.

NetMotion Diagnostics v3.10 now allows customers to analyse streams of data coming from *iOS*, *Android* and *Windows* devices in third-party operational intelligence providers' systems.

The vendor says the new version provides real-time, lightweight data integration to deliver the comprehensive picture IT teams need to pinpoint and proactively rectify the root causes of problems, such as excessive latency, poor signal quality, unresponsive application servers, VPN connections, GPS and dropped connections.

Diagnostics has been developed to feed real-time data to operational intelligence, security, information and event management, business intelligence, log analysis, and alerting tools such as Splunk, Elasticsearch, and Kiwi.

NetMotion says it has also included a free application for Splunk to help customers jump-start their own data analysis.

Diagnostics v3.10 is available as SaaS or as an on-premises application.
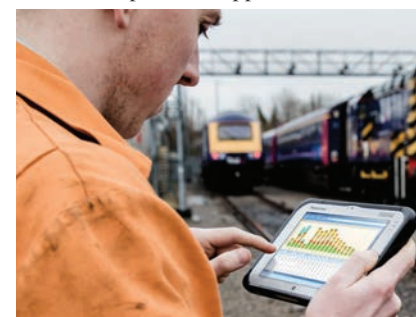
Opengear has designed its *Resilience Gateway* to increase network uptime at branch offices and remote sites.

The new product line includes the *ACM7004-2-LR* for LTE connectivity. It leverages Opengear's out-of-band (OOB) and failover to cellular technologies to enable the efficient access, monitoring, and control of edge routers, servers, switches, firewalls, PDUs and UPS devices.

With failover to cellular over high-speed 4G LTE networks, the firm says the appliance improves WAN resilience and business continuity at remote sites, stores, and throughout the enterprise.

It says the gateway reduces IT costs and mean time to repair by detecting and alerting network administrators to faults and outages (including proactive monitoring and fault repair), and by equipping them with situational awareness and remote control of systems, all delivered via "reliable" OOB connectivity.

Environmental monitoring and security for IT assets is delivered by attaching security cameras, door sensors, and temperature, humidity and digital I/O sensing monitors. Alerts can be sent via SMS, SNMP, or email.

Opengear adds that scaling is made simple with its *Lighthouse Centralized Management* and zero touch provisioning system.
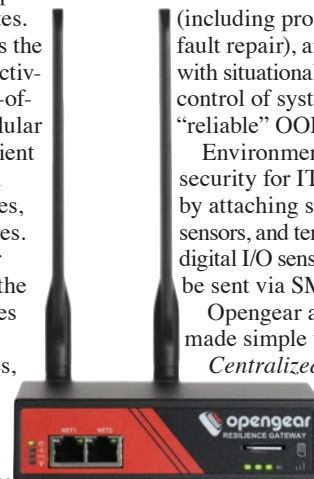
Riverbed claims *SteelCentral AppInternals 10* offers the most complete, real-time analytics to improve application performance management (APM), optimise user experience, and measure business impact.

SteelCentral is designed to monitor applications on and off the cloud. Unlike other APM solutions that often sample transactions and aggregate metrics into intervals of one minute or more, Riverbed says it stores every transaction from end-user device or browser to the application backend, while capturing second-by-second system metrics in production environments.

It says all transactions are stored along with their associated system metrics and call trees including parameters, URLs, user information, and remote calls. According to Riverbed, this gives IT departments on-demand analytics using simple and/or queries, promotes proactive performance improvement, and avoids reactive firefighting.

The company claims this "Big Data-based approach" allows IT to quickly and easily reconstruct incidents in great detail, measure impact, and identify and eliminate root causes before users notice.

It adds that *SteelCentral AppInternals 10* can be set up in minutes, and features web-based, interactive dashboard that can be accessed on any device and without the need for any special skills.

Skyscape in recruitment drive for UK talent

Skyscape Cloud Services has announced an "aggressive" recruitment drive to support the delivery of cloud computing in the UK public sector.

The Hampshire-based firm says it has grown to 85 employees in just three years, and expects to double that figure by 2016. It is currently offering more than 30 new roles, from pre-sales cloud architects, cloud technical leads and web developers, through to engineers and customer service experts.

"This company has become a successful enterprise that creates jobs and is focused on continually innovating," says Simon Hansford, CEO at Skyscape Cloud Services. "We are at the start of a very exciting journey, and potential employees have the opportunity to be part of that and join a young, rapidly growing company. They will play a key role in supporting exciting fast-track projects that will support a revolution in public sector ICT and the delivery of public services online."

In addition, the firm says it has invested in tackling the skills gap with a work placement programme for a select number of undergraduates to gain experience in cloud and virtualisation technologies. The programme is open to students on sandwich degree courses that want to develop cloud skills and gain experience in the operation, development and marketing of cloud solutions.

Skyscape has already taken on nine undergraduates as part of the programme, and hopes that more than 15 more will join as part of next year's intake.

The company says its full range of services are accredited up to IL3, and are connected to government networks including the PSN, N3, and others.

Skyscape adds that it has won a number of high-profile contracts via the G-Cloud framework, as well as through its channel partners that embed its cloud platform into their solutions.

Roadshow to focus on cyber security and 4G

Westermo is embarking on a UK roadshow to highlight key developments in data communication technologies, with a particular emphasis on cyber security and the ongoing 4G rollout. It aims to help firms in the industrial sector to understand more about these technologies and how they will affect them in the future.

Experts at Westermo's mobile training and technology centre will deliver presentations, advice and technology demonstrations.

The data communications specialist says its free half-day events are for those involved with installing and maintaining industrial networks. Westermo says its experts will provide greater insight into cyber security and LTE, as well as advice on how to maximise the benefits from these developments.

They will also offer in-depth presentations on best practice for secure industrial networks while taking in standards such as IEC 62443, as well as utilising and taking advantage of the 4G rollout for remote access applications.

The nine roadshows are being held at various venues across the UK, starting with the Imperial War Museum in Cambridgeshire on 13 October and ending on 11 November at Mercedes Benz World, Surrey. For a full list, visit www.westermo.co.uk/roadshow

NEW COURSES

Data Centre Practitioner – DC Pro Development

DC Pro says its courses include a programme that enables delegates to become globally accredited data centre practitioners in just five days.

Various classroom- and online-based courses are available. DC Pro says they are designed and delivered by industry experts, recognised globally, and delivered locally.

As well as newcomers who have just entered the data centre sector, they are also aimed at professionals who need to keep up-to-date with global industry best practices.

Courses include three-day foundation training, a two-day energy efficiency course, sessions specialising in IT, design awareness and operations, and more. www.dc-professional.com.

University accredited diploma programmes – Telecoms Academy

Telecoms Academy has announced its autumn schedule for its diploma programmes that are offered in partnership with the University of Derby Corporate.

The modular distance learning programmes include a *Diploma in Modern Telecoms*, a *Diploma in LTE and Advanced Communications*, and a *Diploma in Telecoms Business*.

Each course is said to integrate highly focused industry led training with the academic rigour and quality control of university-based education.

Delegates will also be given the opportunity to build credit points by successfully completing the course assessments, leading to a recognised university certificate. www.telecomsacademy.com