

# networking

FIXED & WIRELESS NETWORKS FOR ENTERPRISE USERS

## Cyber spies for GCHQ

Government intelligence agency looking to recruit network specialists  
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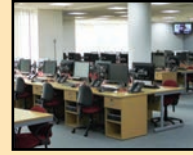
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# IP traffic predicted to triple over the next four years

by Rahiel Nasir

Global IP traffic will triple between 2014 and 2019, and will reach a record two zettabytes over the next four years, according to Cisco's latest Visual Networking Index (VNI) forecast.

Factors expected to drive growth include worldwide increases in internet users, personal devices and M2M connections, faster broadband speeds, and the adoption of advanced video services.

Doug Webster, Cisco's VP of service provider products and solutions marketing, said: "It took 32 years – from 1984 to 2016 – to generate the first zettabyte of IP traffic annually. However, as this year's VNI forecasts, it will take only three additional years to reach the next zettabyte milestone with more than two zettabytes of IP traffic annually in 2019."

In its regional projections, the index says IP traffic in Western Europe will reach 24.7EB per month by 2019. But Asia-Pacific is expected to be the biggest region for growth with 54.4EB per month, followed by North America with 49.7EB.

Cisco predicts that by 2019, more than 14 per cent of monthly global IP traffic will come from cellular connections while 53 per cent will come from Wi-Fi. Worldwide traffic generated from PCs will halve over the next four years, falling to just 33 per cent.

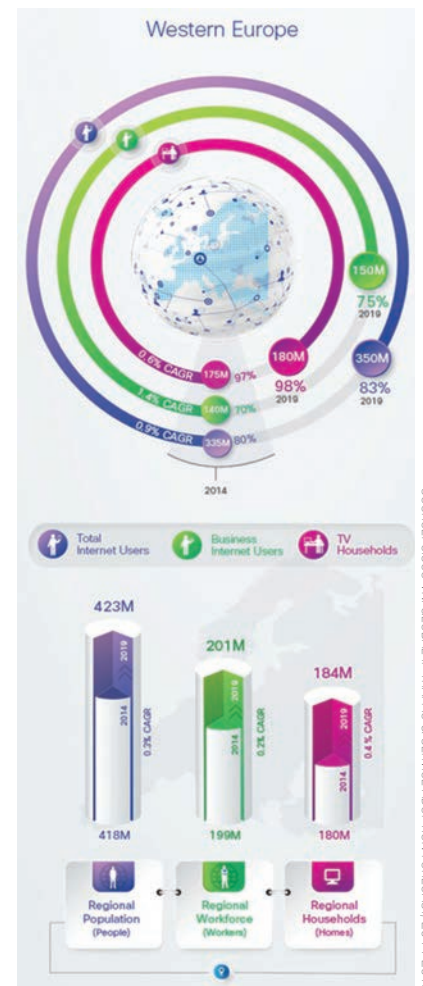
In the UK, mobile data traffic during the period is forecast to be equivalent to seven times the volume of the country's entire internet in 2005. It is predicted to grow two times faster than fixed IP traffic to reach 634PB per month in 2019, up from 74PB per month in 2014. The average mobile

connection will generate 7,257MB of data traffic per month in 2019, an increase from 961MB in 2014.

Cisco adds there will be 614.9 million networked devices in the UK in 2019, up from 317.5 million in 2014. M2M modules will account for 48 per cent of these, compared to 26 per cent today.

The VNI forecasts that overall business IP traffic – which includes web, backup, VoIP, etc. – will double between 2014 and 2019. Of this, video traffic is expected to make up 63 per cent, a rise from 36 per cent in 2014. Cisco says continued business video adoption may prompt greater growth in network virtualisation and leveraging the internet for video transmission.

Cisco has been conducting its annual VNI study since 2005. Its predictions rely upon independent analyst forecasts and real-world mobile data usage studies. The company then uses these data as a foundation for its own estimates.



**Cisco says the world's population, number of households and workforce are growing moderately, but the rate of connectivity is growing faster. This infographic highlights growth in Western Europe.**

## Rapid changes in technology make IT decisions more challenging

The majority of IT decision-makers have invested in hardware or software that has never been used, according to a new study by Rackspace.

In its poll of 250 IT decision-makers across the UK, the cloud specialist found 51 per cent had deployed technology that employees have never used or received the full benefit from. Rackspace says one of the reasons for this may be that nearly three quarters bought technology that was more difficult to use than originally thought.

Sixty-six per cent agreed that the rapid pace of technological change is making decisions about IT investment more difficult than 10 years ago. Rackspace CTO John Engates says: "Whilst the promise of IT

transformation presents exciting opportunities for businesses, the sheer number of options facing IT departments is daunting."

The firm reckons its study presents some key learning opportunities for IT decision-makers. It says before investing in new technology projects, organisations should identify the business issue they need to solve, do more background research, set goals for the project, and obtain a second opinion, both from their peers as well as from experts.

Rackspace adds education is also critical to ensure employees fully understand the benefits of the technology being implemented, and that a timetable should be set for evaluating the project's progress.

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# Wrong criteria used to buy storage

Despite the 75 per cent growth of virtualised workloads in the last decade, organisations are still making storage buying decisions based on the needs of physical workloads, according to the latest research from Tintri.

In its 2015 *State of Storage* study, the VM storage specialist found that performance, capital expenses and scalability represent the top three storage “pain points” for the 1,020 data centre professionals it surveyed from across North America, EMEA and APAC. It also revealed that those using traditional storage systems were suffering more than those who had implemented next-generation technologies.

Fifty-three per cent of traditional storage system users reported performance pain

versus 30 per cent of those using next-gen platforms. They also lost out when it came to capital spend (44 vs. 36 per cent) and manageability (39 vs. 21 per cent).

Tintri says the study suggests that sticking with incumbent storage is actually riskier than adopting new technologies. But it adds firms are starting to catch on, which explains why two-thirds of respondents had introduced a new storage vendor in the last 24 months.

Two out of three respondents revealed that they work for organisations where more than 50 per cent of workloads are virtualised, with 38 per cent already using more than one hypervisor. Tintri says these respondents cited “cost-per-

gigabyte” as the third most important factor when purchasing a storage system behind performance and ease of use.

But Tintri CMO Yael Zheng points out that as more virtual machines are deployed, a far more accurate predictor of expense is “cost-per-VM”. She says: “If IT decision makers continue to apply the same purchasing criteria for physical workloads to virtualised workloads when they select storage, they risk ending up with an infrastructure that’s ill-suited to support modern applications and their business needs.”

Zheng believes users should turn to storage that’s designed for virtualised applications and cloud if they are to transform their data centres and eliminate pain points. ■



**Tintri asked over a thousand data centre professionals to name their biggest storage pain points. Half of them cited performance/latency as their number one headache.**

## Aurora managing uni IT system

*Aurora365* is helping the University of Nottingham (UoN) to deliver an ‘always-on’ IT experience for its 40,000 plus students.

As well as using several commercial and open-source management tools, UoN has also recently deployed a network monitoring platform from SolarWinds.

Jon Vining, the university’s head of IT operations, says *Aurora365* is helping to consolidate these tools and unlock SolarWinds’ full potential which will lead to cost cuts.

He adds: “More importantly, Aurora are helping us reduce the noise that multiple monitoring systems create, providing us with a single end-to-end view of our infrastructure performance and availability to help us enhance student experience.”

Aurora will continue to tune UoN’s SolarWinds platform, and also plans to introduce advanced capabilities such as automated-self-healing and dashboard customisations for each department.

Phil Brindley, UoN’s service manager for infrastructure services, says: “Furthermore, Aurora will leverage their cloud technology to cohesively bring together what we see from our on-premise SolarWinds instance, with areas that can only be logically monitored from an external system, such as our Moodle Virtual Learning Environment.”

*Aurora365* is claimed to be an “affordable” infrastructure monitoring and management service that frees up IT departments time, leading to optimal IT performance. ■

*Education sector case studies, p8*

## New industry body to champion better information sharing via PSN

PSNGB Ltd, the trade association representing PSN suppliers, has re-launched as Innopsis. It aims to facilitate safe information sharing that will enable more efficient and effective public services.

According to Innopsis, the PSN’s job is done as all central government and local government organisations have been connected. It believes the real issue now is how to use the network to meet the government’s transformation objectives.

For instance, Innopsis says the NHS has an £8bn shortfall, while the Local Government Association will have a £12bn funding gap by 2020. The association says the public sector therefore needs to understand how it can safely share information across the PSN to become more efficient.

Innopsis will champion the PSN as the common trusted network which organisations can use to expand collaboration and service transformation safely. It plans to work with new and existing suppliers and the public sector to facilitate better business practices.

The association says it will collaborate with industry to ease the introduction of new technologies that can help the public sector deliver against obligations such as integrated health and social care, or closer



**Innopsis chairman Phil Gibson says the potential to transform public services is a largely untapped opportunity.**

working between blue light providers to reduce crime or help save lives.

Innopsis chairman Phil Gibson says: “The potential to transform public services by better enabling organisations to safely share more information is a huge, largely untapped opportunity for the UK. This is where Innopsis will now focus its efforts to continue the drive for greater efficiency and a more buoyant and dynamic marketplace for our members.”

He adds that public sector services will continue to be delivered using the PSN’s new Network Services Framework that was developed by the Crown Commercial Service in consultation with Innopsis. According to Gibson, this framework offers more flexibility and greater choice of both services and suppliers to the public sector marketplace. ■

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## EcoCooling joins Node Pole Alliance

EcoCooling has joined the Node Pole Alliance, an international network of expert companies who are aiming to build the data centres of the future.

The Node Pole region encompasses three municipalities in Sweden’s northern tip, close to the Arctic Circle. It is said to offer the potential to become a global hub for data traffic because of its reliable power infrastructure, ample supply of low cost renewable hydroelectric energy, and low air temperatures that are ideal for natural cooling.

Based in Bury St Edmunds, EcoCooling specialises in direct-air evaporative cooling systems. As an alliance member, it joins more than 80 technology and construction firms who are combining their knowledge and experience to build world-class data centres. It will work alongside innovative companies such as Hydro66, Vattenfall, Facebook, KnC Miner and ABB.

EcoCooling says air temperatures near the Arctic Circle are not only cool enough to make refrigeration in data centres redundant, they can even be too cold for IT equipment, as some systems shut down if the temperature drops below 14° Celsius.



**The Node Pole region has an ample source of renewable energy, such as the Porjus hydropower plant on the Lulea River, and offers the potential to become a global hub for data traffic.**

PHOTO: VATTENFALL

The firm has designed patented control systems and atemperatation processes to keep the cooling air within a tightly managed temperature band, typically 18° to 21° Celsius.

EcoCooling MD Alan Beresford says: “The direct-air evaporative cooling systems we have developed are ideal for the climate in the Node Pole region and make the most of the resources available.” ■



# GCHQ openly recruits IT network specialists

For the first time in its 69 year history, Government Communications Headquarters (GCHQ) is openly recruiting Computer Network Operations Specialists (CNOS).

The organisation is inviting applications from both graduates and non-graduates who are aged 18 or over, and have complex coding and problem-solving skills.

GCHQ says it recruits "world-class" experts who provide the knowledge and understanding of computer networks needed to provide valuable intelligence and protect the UK's sensitive information.

CNOS work in both cyber security and cyber intelligence roles.

In cyber security, GCHQ says specialists may find themselves working in a team detecting and preventing attempts to attack the critical national infrastructure, or seeking to defend government systems against criminals planning to steal information, identities or money.

Cyber intelligence specialists might need to develop software to access the computers of a terrorist group, or carry

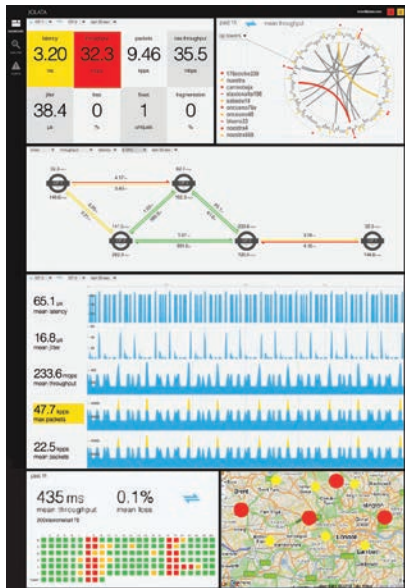


**Roles for CNOS are available at GCHQ's offices in Scarborough as well as at its famous "doughnut" building in Cheltenham.**

out operations to retrieve vital online clues about the location and identity of members of an organised crime ring.

A GCHQ spokesperson said: "We are looking for people with a diverse range of backgrounds and experience, so training is tailored to meet the needs of the individual and the role. The need to keep up with changing technology means that those we recruit continue learning and developing throughout a career in computer network operations."

## Preventing bottlenecks in latency-sensitive networks



**Jolata's analytics platform is said to provide predictive network intelligence with millisecond-precision performance statistics for any flow.**

Phoenix Datacom will provide and support Jolata's Big Data, network performance improvement platform in the UK.

The *TruFlow Analytics* platform from Silicon Valley start-up firm Jolata is designed to deliver end-to-end and hop-by-hop performance metrics to allow users to quickly identify root causes of network problems, efficiently improve performance, and accurately configure their SDN/NFV-enabled networks.

Aylesbury-based Phoenix Datacom specialises in improving network performance and security. Its MD, John Carson, claims *TruFlow* is not just another network performance monitoring solution.

"The Jolata platform goes beyond the capabilities of legacy solutions to provide both real-time and predictive analysis. This not only means alerting network owners to trouble spots within five seconds and with much higher resolution, it also means identifying the problem, determining the root cause and most importantly, preventing the same issue from occurring in future," he says.



## ON THE NETWORK

Rahiel Nasir, editorial director, Networking+

### Life's a breach when it comes to security. And always will be?

Earlier this month, it was revealed that the US had been hit by one of the largest known thefts of government data in history. According to reports, almost four million past and present employees of the Office of Personnel Management (OPM) may have had their personal data stolen.

The OPM apparently became aware of the breach in April as it was updating its cyber security systems. It is now contacting all individuals whose personal data may have been compromised, and will offer them 18 months of free credit monitoring and identity theft insurance.

OPM acts as the federal government's HR department. Its databases include information on job assignments, pension payments, performance reviews, etc.

US authorities believe the breach could potentially affect every federal agency, and have accused China of being behind the "cyber intrusion". China denies the allegation which was described by foreign ministry spokesperson Hong Lei as "irresponsible and unscientific".

So how could this happen in a country where you would expect state-of-the-art government security systems? In the wake of the breach, the information security vendors have been lining up to

offer their advice as they seek to take advantage of the PR opportunity.

For instance, Tom Court, cyber crime researcher at Alert Logic, says the incident underlines the importance of continuous network monitoring to uncover anomalies. Tony Berning at OPSWAT adds to this and says it's important to secure data flows by deploying one-way security gateways and multi-scanning with multiple anti-malware engines. He reckons this will greatly increase the detection rate of threats and outbreaks.

But Mark Bower of HP Security Voltage believes detection is too late and that prevention is only possible through data de-identification technology.

I have yet to come across any infosec expert who can hand on heart say there are solutions out there that can guarantee security for networks managers. Ultimately, it always comes down to combining best practices, the latest tools and resources, and monitoring the human factor to become more resilient and responsive.

I am inclined to agree with Nick Wilding, AXELOS' head of cyber resilience, when he says all organisations now need to accept that successful attacks will happen. As the US breach highlights, the hackers will always be one step ahead of you.

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According to Phoenix Datacom, *TruFlow* enables users to: monitor every packet with microsecond granularity and correlate at millisecond intervals; process every packet and visualise the results within seconds on an easy-to-use GUI; analyse every packet and flow at any location across the network; and spot potential causes of bottlenecks and remediate before latency or other key metrics such as jitter,

loss and throughput can be affected.

Carson adds the company is already seeing "excellent" results from the Jolata proof of concepts it has been running for some of its early adopters. "We expect the platform to provide the next step-change in network latency reduction, and allow customers to command a premium for low-latency connections and time-sensitive services."

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## Capita acquires Pervasive

Capita has acquired Pervasive. The company specialises in enterprise wireless networks, mobility managed services and BYOD solutions, and comprises Pervasive Networks and Beovax Computer Services. It is said to have a large client base across a range of sectors including education, health and local government, and has 76 employees at key sites in Newbury and Newmarket. Capita says the acquisition means its Technology Solutions division now has a specialist business unit focused on mobility. This adds to its capabilities within storage, compute and security which were boosted through the recent acquisitions of data storage specialist Solid State Solutions (S3), and IT security reseller Network Technology Solutions. ■

## Cray chooses UK for EMEA HQ

Supercomputer maker Cray has established its EMEA headquarters in Bristol. The firm says the new HQ will serve as a regional base for sales, service, training and operations, and as an important development site for worldwide R&D initiatives. CEO Peter Ungaro described Bristol as a "great city". He said it has leading universities, and is quickly becoming a technology hub with a number of large high-tech companies, startups, and a skilled workforce. Cray has numerous supercomputing, storage and analytics customers across EMEA, including the UK's Engineering and Physical Sciences Research Council, the University of Edinburgh, and the Met Office which recently signed a contract for a new system. ■

## Mobile working at Cancer Research

Cancer Research UK is using an enterprise mobility management solution based on Citrix's *XenMobile*, *ShareFile*, *Worx Mobile Apps* and *NetScaler* application delivery controller technologies. The solution builds on the charity's existing Citrix *XenDesktop* infrastructure which was deployed in 2010 to reduce real estate costs and create a hot desk environment for all employees. This next phase of the project aims to empower workers by providing them with secure access to data, desktops and apps via any device over any network. It will support increased and efficient collaboration, and allow fund raisers to store and access information securely and expediently. ■

# AMG Ethernet switches help ensure safety during motorway roadworks

AMG has supplied a range of hybrid transmission systems on major motorways to ensure safe traffic flow during roadworks. Its network technology has been implemented by civil engineering contractor P&D Specialist Services, and covers a distance of 99km across the M1, M3, M60 and M62.

A total of 329 CCTV cameras have been deployed on the four motorways. P&D's aim is to deliver a real-time overview of the entire stretch of works and link all the images from the cameras back to its round-the-clock, manned control room. Fibre optic cables are used to cope with the long distances involved, and this is where AMG's transmission technology is said to be playing a vital role.

P&DSS project manager Frank Gearon says: "When a stretch of motorway undergoes roadworks, it often means that there are no

**P&DSS project manager Frank Gearon says AMG's transmission equipment requires less fibres which means quicker splicing during installation.**



emergency telephones as the hard shoulder is being used as a 'running lane'. The result is that motorists have nowhere to stop safely and summon assistance in event of a breakdown or accident. That's where the CCTV solutions we deliver come in."

Gearon says one of the key advantages of using AMG's transmission equipment is that it requires a smaller number of fibres. That means quicker splicing which results in saved time for deadline sensitive projects.

P&D has deployed AMG's 9024 multi-service Ethernet switch series (*M-SES*). The company also had specific requirements for the M60/M62 project and requested a proprietary redundancy feature, dubbed the 'X-ring', which AMG implemented.

P&D group MD Pat Musgrave says: "The X-ring protocol allows an unlimited number *M-SES* units on each fibre loop, and sub-loops can be added seamlessly, whilst delivering redundancy protection in the case of switch or fibre failure."

"Failure is a real risk in a construction environment, where major engineering work frequently damages cables and roadside equipment. By integrating the dedicated video codec and RS232/RS485 into the *M-SES* switch, video lag and control data is minimal." ■

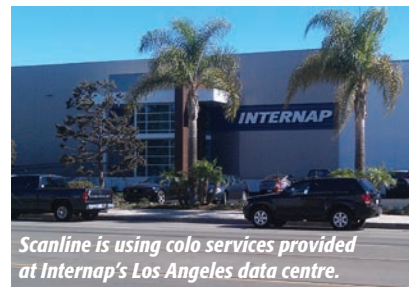
## High-density colo services handle 210TB daily

Visual effects company Scanline VFX is using Internap's *Performance IP* service to help process its massive amounts of data-intensive digital content.

With offices in Munich, Los Angeles and Vancouver, Scanline's film and TV credits include *San Andreas*, *Iron Man*, *Game of Thrones*, amongst others. The firm is known for its *Flowline* software which is used to create fluid effects such as water and fire.

Scanline runs thousands of renders and simulations concurrently, amounting to more than 210TB of data daily, with an overall storage capacity of more than 3PB.

It previously operated four data centres to support its workflows, but as in-house space neared capacity, it sought to merge its infrastructure into one location with an



Scanline is using colo services provided at Internap's Los Angeles data centre.

outsourced data centre provider. As well as needing a solution offering large amounts of CPU power, guaranteed availability and redundancy, high-performance data centre networking was also imperative to ensure that FX engineers across Scanline's global locations could rapidly access and process

jobs at any time, without interruption.

Internap says its colocation service supports high-density power of up to 18kW, with a unique design that enables Scanline to scale power in-rack without consuming more floor space. The firm says its data centres in Europe, North America and Asia-Pacific feature a concurrently maintainable design, round-the-clock on-site engineers, advanced security features, and remote management self-service tools.

Internap claims *Performance IP* features patented *Managed Internet Route Optimiser* technology backed by a 100 per cent uptime guarantee. It's designed to evaluate available service networks in real-time, ensuring low latency and the delivery of Scanline's traffic over the fastest internet path. ■

## QLogic delivers 16Gb FC connectivity for EMC

QLogic's 16Gb *Gen 5* Fibre Channel (FC) technology is now available for EMC's latest *VNX Series* hybrid flash storage arrays.

According to the vendor, its *Gen 5* FC solutions eliminate throughput bottlenecks from host to storage, giving EMC users "unprecedented" application performance and optimum I/O. It claims they also enable enterprises to improve price performance, reduce power consumption per gigabit, and support more VMs per server.

QLogic adds that its *Gen 5* solutions are backward compatible with 8Gb and

4Gb FC networks, providing investment protection for existing Fibre Channel SAN infrastructure.

EMC claims its *VNX Series* is designed to balance the performance, reliability and scalability requirements of virtualised data centres with a unified storage platform that supports both block and file storage.

Jon Siegal, the company's VP of core technologies, says: "*VNX Series* storage arrays allow organisations to make the most of their infrastructure. Combined with QLogic *Gen 5* Fibre

Channel connectivity, *VNX* solutions provide the enterprise-class reliability and performance needed to satisfy the demanding requirements of both physical and virtual data centre workloads."

■ In late May, EMC announced it had entered into a definitive agreement to acquire cloud software and services provider Virtustream in a deal worth around \$1.2bn. When the transaction is finalised during the third quarter of this year, Virtustream will form EMC's new managed cloud services business. ■

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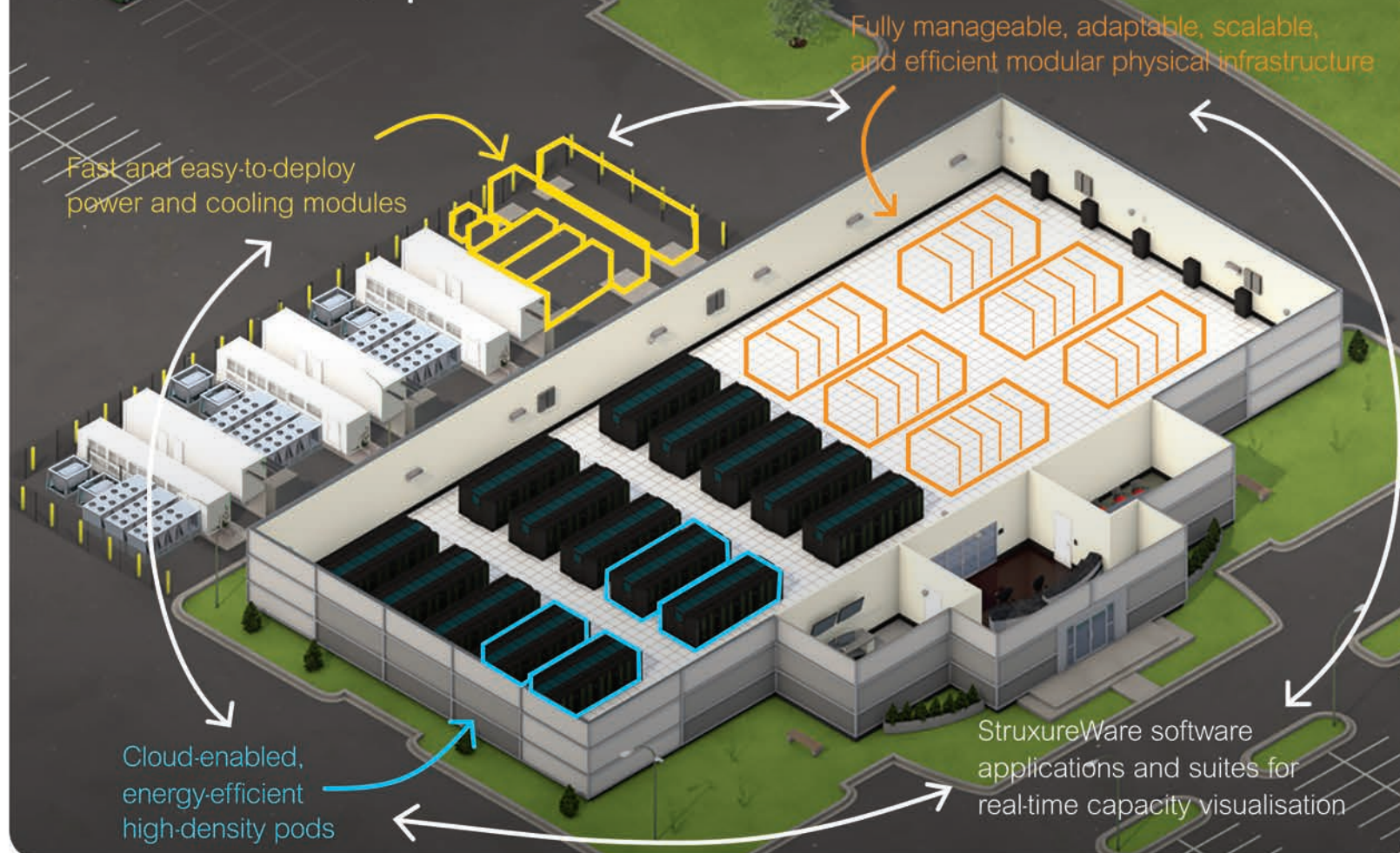
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# Nokia Networks enters cloud infrastructure market

Nokia reckons it has become first vendor to effectively merge the IT and telco cloud domains with the launch of its *AirFrame* data centre platform.

Following plans announced in early May (see <http://tinyurl.com/ojo72a8>), the firm has now unveiled pre-integrated racks with ultra-dense servers, high-performance switches, and software defined storage. Nokia is also offering a suite of professional services to support the implementation, monitoring and operation of telco cloud data centres.

According to the Finnish company, its new platform presents a “unique” way for operators to implement cloud. It claims *AirFrame* offers significant efficiency

gains when running data-demanding telco applications like network functions virtualisation (NFV).

Nokia says its platform is fully compliant with IT standards and is able to run the most common IT cloud applications in parallel to telco cloud. It adds that *AirFrame* enables operators to not only implement their NFV strategy, but also expand into new business models such as renting data centre capacity for customers’ IT applications.

The platform is designed to be ready for 5G and is said to feature an advanced cloud management solution to handle centralised



**Nokia's AirFrame data centre platform features pre-integrated racks with ultra-dense servers (pictured), high-performance switches, and software defined storage.**

distributed telco cloud architectures. It includes orchestration which automates and manages the lifecycle of security policies and security functions.

“We are taking on the IT-telco convergence with a new solution to challenge the traditional IT approach of the data centre,” claims Marc Rouanne, EVP for mobile

broadband, Nokia Networks. “[*AirFrame*] brings telcos carrier-grade high availability, security-focused reliability as well as low latency, while leveraging the company’s deep networks expertise and strong business with operators to address an increasingly cloud-focused market valued in the tens of billions of euros.” ■

## Toshiba and Microsoft collaborate to develop Internet of Things

Toshiba and Microsoft have signed an agreement to jointly develop solutions for the Internet of Things (IoT). Leveraging Microsoft’s *Azure* cloud infrastructure, Toshiba says it will deliver “state-of-the-art” sensor-data-driven applications in various market segments.

The two companies plan to offer “innovative” IoT enterprise solutions, starting with the transportation and logistics market this year, by delivering state-of-the-art IoT devices and various products delivered as a service (XaaS).

Under the deal, Toshiba will provide XaaS that makes use of its in-house technologies

such as *Application Processor Lite*, in-vehicle driving recorders, sensors and storage. Microsoft will provide IaaS, private line services, and advanced analytics as part of its *Azure* platform.

“Bringing together the power of the *Azure* services and IoT suite with Toshiba’s cutting-edge sensor-driven devices will provide a new level of data access and business intelligence to customers,” said Nick Parker, Microsoft’s corporate VP, OEM division. “To stay competitive, businesses today need instant access to changing data so they can act quickly and seize new opportunities.” ■

## Cloud Industry Forum’s Code of Practice achieves EC recognition

ENISA, the European Union Agency for Network and Information Security, has added the Cloud Industry Forum’s (CIF) Code of Practice for Cloud Service Providers to its Cloud Certification Schemes List.

The list is designed to help end users and service providers determine which certification schemes fulfil their requirements and can offer the correct level of reassurance. It has been compiled and assessed by ENISA in collaboration with the EC and the Cloud Select Industry Group on Certification.

Schemes included on the list have been found to meet the stringent standards set by the agency, taking into account the security frameworks around which they are built, the auditing process, and their main characteristics.

The CIF said there are no dedicated cloud standards in the market, making it difficult for small business customers to identify trusted advisors. It originally set up its Code of Practice to help UK

**APM Group CEO Richard Pharro said accountability, capability and transparency are all critical to the cloud service contract.**



businesses gain confidence in suppliers. Richard Pharro, CEO of APM Group, the forum’s independent certification partner, said: “The Code of Practice was first established with the aim of driving levels of accountability, capability and transparency in the cloud industry, which are all critical to the cloud service contract.”

The CIF now hopes the adoption of its code across the EU will encourage more users of cloud services to actively seek providers that are CIF-certified, and that more cloud service providers will also seek certification. ■

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## Cloud filtering service promises to boost network security

TFM Networks has developed a new security tool that is designed to help businesses protect themselves from threats triggered by their own network users.

Based on the *Umbrella* platform from OpenDNS, TFM says its *Cloud Filtering* tool uses Big Data analytics and machine learning to intelligently predict and protect against both known and unknown threats.

Businesses can use it to apply up to 60 category filters to customisable blacklists or whitelists, enabling them to manage which users can access specific pages via the enterprise network. The visitor’s IP or user name is then matched against this list and the appropriate filtering policy is applied before the internet traffic is passed through to the network.

According to TFM, all this helps prevent phishing, botnet and malware attacks from malicious websites. The firm says it also “significantly” reduces the network overhead and latency involved in filtering, giving customers a faster browsing experience.

*Cloud Filtering* does not require any hardware installations for customers, and is hosted and maintained in the cloud. It is said to guarantee 100 per cent uptime. Available in two versions for internet and MPLS

**TFM’s marketing director Alison Irvine says network security does not have to be costly or time-consuming.**



networks, the technology also offers real-time, exportable reporting and is transparent for end-users to promote compliance with corporate network policies.

“Network security and efficiency is business critical, but achieving it does not have to be costly or time-consuming,” says Alison Irvine, group sales and marketing director at TFM. “*Cloud Filtering* prevents attacks from getting into the network, providing protection against liability for illegal downloads, preserving bandwidth for business use, and requiring no additional infrastructure or overheads.”

Irvine adds this means firms can focus on their core business knowing that their network is working harder to keep them safe and secure. ■



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# University technology challenge

**At a time when technology is crucial in education, institutions need ICT systems that will give them and their students a competitive edge in an increasingly global marketplace.**

## London Lycée installs continuous power

The Lycée Français Charles de Gaulle is an independent day school for primary and secondary education. Located in west central London, it is wholly owned by the French government and typically has about 3,900 students and teachers studying and working there. Originally founded as the French School of London in 1915, its alumni includes actress Jacqueline Bisset, journalist India Knight, and film director Roland Joffé.

It's regarded as one of the top international schools in London, and it's almost impossible for parents to enrol their children, even if they are French nationals, for whom the Lycée reserves places.

While it may have a long, unchanged tradition, its ICT requirements are much like any other educational establishment – it needs constant upgrades and maintenance.

After recently updating its server room, the school required a fully redundant power solution that was capable of lasting at least two hours in the event of a mains outage. The school wanted it to be provided by a company that could supply, install and maintain the complete solution.

The school chose a solution proposed by Critical Power Supplies (CPS). This included an APC 20KVA rack-mounted N+N solution in a fixed price package, and delivered a maintained system with all the features required within the budget available.

CPS says the new solution gives the IT department complete redundancy in case of failure at any point, and allows batteries to be replaced without having to switch off the load by utilising the bypass system and APC's hot swap battery technology.

The installation took three days and

also includes two feeds into two new bypass switches and two new distribution boards. Each rack has two feeds, one from each UPS.

CPS says the installation is designed to the latest standards in critical power and electrical circuits, and that the IT department now has a fully redundant three-hour runtime system.

It adds that the project was delivered on time and within budget. The company claims that combining APC's UPS efficiency and reliability with its ability to deliver a turnkey installation with comprehensive project management enabled costs savings though a quick rollout and integration.

## De Montfort replaces DDI system

Founded in 1870, De Montfort University (DMU) relies on IT and networking systems to keep pace with the changing needs of its students, staff, business partners, and the communities it serves.

Managing the university's IP infrastructure and providing resilient and secure DNS, DHCP and IP address management services (DDI) is the job of senior technical analyst, Paul Toyne. He was responsible for implementing DMU's original DDI solution. This started with managing BIND and ISC DHCPD directly from the configuration files on Solaris.

But as the system neared its end of life, Toyne's team was faced with the prospect of having to make significant investment in new hardware to continue receiving support and updates. They were also experiencing increasing frustrations with functionality and usability.

After undertaking a full evaluation of the DDI market, Toyne and his team replaced the previous system with a full DDI solution from EfficientIP. This features seven of the vendor's *SOLIDServer* appliances configured to provide a variety of functions.

These include overall management and IP Location management, a hidden DNS master, and DHCP failover. The system also offers both internal and external recursive DNS query management configured with two virtual IP addresses for resilience.



External DNS query management is located off-site and configured with a single virtual IP address for additional resilience.

DMU also implemented EfficientIP's *NetChange IPLocator* which queries network switches and pulls information on what devices are connected to which interfaces. This is then stored in the IPAM database.

In addition, the university purchased further multi-vendor management licences from EfficientIP to enable it to manage its Active Directory DNS servers directly, rather than delegating the DNS zone to those servers.

"We chose EfficientIP for its functionality, ease-of-use and cost-effectiveness," says Toyne, adding that the implementation went far more smoothly than he had expected. "The system is also logically laid out and making bulk changes is extremely quick. The entire EfficientIP solution with optional RPZ feeds came in at a cost below what one vendor wanted to charge just for the RPZ subscriptions."

"Moving forwards, we plan on making extensive use of the workflow functionality to empower our technicians on the ground and to automate the creation of tickets in our service desk system as workflows are performed."

## New communications network for Walsall College

Walsall College is said to be the largest provider of qualifications for 14-19 year olds in the Borough of Walsall, West Midlands. As part of a local regeneration project, a brand new development has seen the construction of the Wisemore Campus which is now part of the college. It supports 3,500 young people and provides education and training to more than 8,000 adults.

The college regards its new development as "world class" and wanted to upgrade its old technology and install new systems where necessary. After much consideration, it chose West Midlands-based communications integrator Amillan to provide structured cabling, telephony, data and applications for the new campus.

Amillan's brief was to install high performance network infrastructure throughout the college to support a wide range of current and future data, voice, video and other intelligent building solutions, such as HVAC and security systems. To give the network extra resilience, extensive redundancy has also been built into the infrastructure.

Amillan, which claims to connect one million calls per day across multiple contact centres in the UK, had the advantage of working with Walsall College from the start. It had a clear understanding of all the infrastructure requirements, from cables, switches, to handsets and applications. They put together a migration plan to move staff and equipment from the old buildings to the new campus.

Amillan deployed Excel's Cat 6 UTP cabling throughout the four-storey building. It has connected 10 communications rooms and 30 cabinets supporting 6,700 outlets with OM3 fibre, and has used a copper backbone linking the main communication rooms to satellite rooms.

Excel says its Cat 6 UTP cable is designed for optimal support of high-speed data protocols delivering 1Gbps performance to the workstation, whilst the OM3 fibre optic system delivers 10Gbps performance for the resilient data network.

The company adds: "With an integrated IP infrastructure in place, Walsall College now has the platform on which to deploy new technologies and applications easily and effectively."



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# A DRaaS solution when disaster strikes



*Sungard AS' newly opened workplace recovery centre in central London has capacity for 700 workers. The firm says it spent £4 million last year upgrading its nationwide facilities.*

**Without an effective business continuity and recovery plan, organisations might not only lose time and money but could also face damage to their reputations in the eyes of their customers. ABDUL MONTAQIM finds out how DRaaS is offering the solution.**

**W**ithout a functioning computer and communications network, very few companies, if any, could operate at all. It is therefore crucial for all organisations to have a business continuity (BC) and disaster recovery (DR) plan in case the worst happens and their usual operational locations become inaccessible.

In such circumstances, a number of different companies can help by providing specially kitted-out business continuity centres. For example, Sungard Availability Services (AS) has 26 workplace area recovery locations throughout the UK, Europe and India. The firm says the types of disruptions that lead people to come to them include power outages, water leaks, fire, weather disruptions and terror threats.

IBM also has at least 17 such centres dotted around the country. But Alex Reardon, the company's director of resiliency services for UK and Ireland, points out: "As the wave of digital transformation sweeps every aspect of the modern enterprise, a traditional disaster recovery approach of 'just being able to recover' is no longer sufficient."

He believes BC & DR are more than just an IT problem for companies, and says that not being accessible is a significant brand reputation challenge when today's customers expect services to be 'always on'.

"While IT can have a lead role in advising the business, C-suite executives must also shoulder the responsibility of understanding how the availability of services affects their business. They have to be prepared to invest in the availability and resilience required. Business continuity

plans now have to consider reputational risk as a fundamental objective."

With so much at stake, business managers not only need to plan for all eventualities, they must also ensure such plans work. According to Veeam, which specialises in software for what it describes as the "always-on business", one of the main issues enterprise face when implementing a BC & DR solution is that they haven't been configured properly.

"This can lead to a significant slowdown in the system and slower recovery times," warns Doug Hazelman, Veeam's VP of product strategy. "It is essential that businesses invest time in configuring recovery solutions so they can operate an always-on business that doesn't suffer downtime as a result of slow recovery times. As with any new solution, the system will only be as good as you've tested."



Sungard AS agrees. It believes that recovery is a holistic process that should encompass not only the technology, but also people and processes.

Daren Howell, the firm's proposition marketing manager, points out that a business continuity management (BCM) plan needs to go beyond simply writing up a new company policy.

"BCM plans need to be tested and rehearsed to the point where they become intuitive – second nature, no less. Everyone across the business needs to know what is expected of them, and what their role and responsibilities are when disruption or crisis occurs.

"Planning needs to be dynamic and revised frequently. No organisation is static, so if it is changing or growing (and let's face it, all healthy businesses do), then so should your BCM planning."

**"It would be somewhat short-sighted to regard any single solution as a 'silver bullet', but as it stands DRaaS is the perfect solution for those with complex IT systems."**

*Daren Howell,  
Proposition marketing manager,  
Sungard Availability Services*

## Cloudier outlook

Disaster recovery as a service (DRaaS) is predicted to dominate growth in the cloud service market for the next few years, with some forecasting it will overtake traditional data recovery services within a year.

Figures vary: according to Transparency Market Research, the global DRaaS market is worth \$621m (£407m) and is set to grow 36 per cent annually until 2022; Sandler Research says the market will increase at 53 per cent a year through to 2019. In its 'Magic Quadrant' for DRaaS published in April, Gartner estimates the total size of the global market to be around \$19.2 billion. The firm says: "By 2018, the number of organisations using DRaaS will exceed the number of organisations using traditional, syndicated recovery services."

Sungard AS was acknowledged by Gartner as a leader in its recent DRaaS Magic Quadrant. Howell says: "DRaaS is certainly the way forward, at least for the next 5-10 years. Given how quickly the business landscape has changed it would be somewhat short-sighted to regard any single solution as a 'silver bullet', but as it stands DRaaS is the perfect solution for those with complex IT systems – including across potentially many locations or geographies."

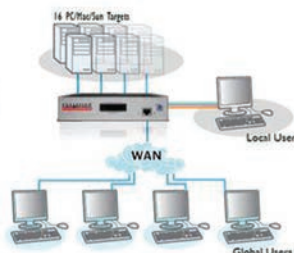
He adds that automation and virtualisation allows businesses to seamlessly move workloads between their production and recovery environments, which helps remove human error. "It's faster, more accurate and it will do what



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you planned for it to do when disruption occurs. Being a cloud-based solution also means that organisations can scale up and down based on their business needs, addressing a full range of recovery time and recovery point objectives – and, more pertinently, their business ones.”

Veeam’s Hazelman reckons a key advantage of DRaaS is that users don’t have to invest in their own data centres and can therefore avoid an initial capital investment.

“Using DRaaS doesn’t require the same level of investment as a non-cloud solution, and savings can be made on costs such as upgrades in software and hardware which you aren’t likely to incur when using a cloud-based solution.

He continues by saying the main emphasis of DRaaS is its round-the-clock availability. Whenever a customer is



**“Organisations should not rely solely on backup to keep vital data safe from disasters. If they do, they could be disappointed.”**

*David Fisk,  
EMEA sales director,  
Quorum*

having an issue, such as a network failure and downtime, it can immediately switch to the backup and carry on as usual. Of course, some companies can already

do this on-site. But some of the possible differentiators of using a DRaaS provider are said to be faster data recovery, cost-effectiveness, round-the-clock support,

and easy testing and automation. “DRaaS lends itself best to organisations that are data-intensive,” says Hazelman. “If a company is operating an always-on business where it’s essential that data is always available, DRaaS is essential.”

Dominic List, CEO of infrastructure monitoring solutions provider Aurora365, supports this view: “DRaaS is ideal for companies who need continuous protection of the data and applications that are essential for the operation of their critical business functions. DRaaS replicates your virtual machines and maintains standby copies on a resilient cloud virtualisation platform. With opex-based pricing, DRaaS offers a simple and cost-effective way to complement your investment in virtualisation and enhance your business continuity planning.”

### **Don’t just backup if you want to get back up**

In an era where data reigns supreme, many experts warn that merely backing it up is no longer enough. “Organisations should not rely solely on backup to keep vital data safe from disasters. If they do, they could be disappointed,” says David Fisk, EMEA sales director at BC & DR specialist Quorum.

His advice is for organisations to ensure they have a strategic and full data recovery plan in place to migrate to recovery servers in other locations when a disaster occurs. “Additionally, it is important that organisations are aware of how to recover the data and that their users know how to reconnect to the environment.”

Fisk also warns organisations against a temptation to minimise DR and treat it like an insurance premium. “The truth is that an effective DR strategy is much more than that. Any organisation that underestimates the importance of DR is in danger of failing to appreciate the vital role it plays in its business continuity. Simply put, without an effective DR strategy, there is no business continuity.”


He continues by saying that one of the main reasons why businesses are increasingly adopting DRaaS, and why the market is growing, is because customers have greater confidence that cloud-based solutions are becoming more secure. “Adopting cloud-based technologies doesn’t have to be risky or painful and it can bring advantages. For instance, an accredited Tier 3 data centre is often more secure than the average corporate data centre.”

Matt Kingswood, head of managed services at IT Specialists (ITS), says each individual business has different requirements, and BC & DR planners need to identify critical resources and processes using a business impact analysis.

“Planners should define recovery time objectives [RTOs] and prioritise the recovery of business units, applications and supporting technical infrastructure. Once businesses understand their RTOs and recovery priorities, they can develop a documented recovery strategy and seek a third-party recovery services provider.

“The advantage of working with a third-party provider is that these companies are fully invested in the industry. As such, they have the resources to maintain recovery solutions and the knowledge to help businesses develop an effective, compliant BC & DR strategy that adequately addresses the risks identified in the company’s business impact analysis.”

Databarracks, a provider of DR, backup and IaaS from UK-based, ex-military data centres, supports this view. Its MD Peter Groucutt says: “We were early to the cloud disaster recovery market and coined the



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term 'virtual disaster recovery'. In the last two years there has been a surge in interest in cloud-based disaster recovery."

But Groucutt points out that technology is only half of what it takes to deliver effective disaster recovery – for it to really work it has to be backed up by expert support.

"DRaaS is so significant because organisations can reduce their costs and improve their recovery compared with traditional disaster recovery services. Organisations don't want the expense of running secondary data centres purely for disaster recovery. With DRaaS, they get the flexibility of cloud computing combined with recovery experts they can rely on to get them up and running again in the event of a disaster."

## Should you get physical?

Kingswood makes the observation that DRaaS solutions were developed in response to the challenge of businesses needing a way to recover data from the cloud. Rather than simply storing customers' data in the cloud, cloud disaster recovery providers began helping businesses vault and recover their data to physical hardware, VMs or another cloud environment.

## Cloud rescues John Laing during Holborn fire

On 1 April, an underground fire led to a mass power outage in central London. It took 36 hours to put out the blaze in Holborn which, at its height, was tackled by 10 fire engines and around 72 fire-fighters and officers from the London Fire Brigade. Subsequent investigations revealed that an electrical fault in the Victorian tunnels underneath Kingsway damaged a gas main which then ruptured.

Around 5,000 people from local properties were evacuated during the incident, including staff from the John Laing Group. As an international investor and manager of infrastructure projects, continuing business on a day-to-day basis is crucial to the firm. On the day of the fire, this was exactly what happened.

John Laing was an early adopter of cloud having outsourced its IT to Wirebird as part of an office move in 2012. Wirebird proposed its *Infrastructure+* cloud-based solution for the firm's voice and data infrastructure and also reduced 120 physical servers to just 14 virtualised ones.

According to the service provider, one of the advantages of this physical separation is reduced risk, ensuring business continuity in the event of any disaster at John Laing's head office. This was certainly put to the test in April.

John Laing IT director Dylan Jones says: "With the support and solution from Wirebird we could carry on. Staff were evacuated but could work from anywhere with an internet connection. We could even hold an important investors meeting that still went ahead via a video and audio conferencing call. Essentially, the fire had no impact on how we conducted business nationally and internationally that week, despite the fact the offices were closed."

Wirebird – which is now part of the Timico Technology Group – supported John Laing throughout the incident providing daily updates on any damage the outage may have caused to hardware.

Wirebird MD Nabeil Samara says businesses are still wary about hosting voice and data in the cloud but needn't be as it's totally secure. "This incident is a great testament to the advantages of cloud technology and demonstrates how vital it is for a disaster recovery plan," he says. ■

"Over the last couple of years, several providers have begun offering hybrid-infrastructure DRaaS to allow businesses to store high-priority data or unique applications on-site in addition to vaulting data to the cloud," says Kingswood. "For example, ITS' DRaaS solution uses a fully managed data storage appliance called *BlackVault* in conjunction with *BlackCloud*, a private cloud environment that provides secure and compliant vaulting and recovery."

He adds that with so many DRaaS providers clamouring for attention, the key to their success is to adapt to a business's individual needs and provide unique, high-quality services.

Hybrid DRaaS solutions seem to be gathering momentum. VMware says the main target for its recently launched *VMware vCloud Hybrid Service – Disaster*

*Recovery* is network managers who use *vSphere Hybrid Service* as part of their cloud computing infrastructure. Bill Fathers, SVP and GM of hybrid cloud services, said the company was aiming to "distinguish itself from other cloud providers by making disaster recovery simple and cost-effective with the new service."

"[It allows] our customers to use a hybrid cloud approach to deliver business value, without wrestling with operational complexity and incompatibility inherent to other public clouds."

Meanwhile, Silicon Valley-based Zetta claims it's developed a complete three-in-one backup, disaster recovery and archiving service that can be managed within an organisation's existing IT environment. The firm says its *Zetta.net* DRaaS is capable of backing up both virtual and physical servers.

"The current DRaaS approaches include data recovery of files, appliance-based recovery-as-a-service, virtual-only DRaaS, and traditional DRaaS that is only affordable for larger enterprises," says the company's VP of products, Chris Schin. "These approaches don't give most businesses true DRaaS to keep their entire business operational after a disaster."

All the indications are that the DRaaS market will keep growing, particularly when you consider that at least half of all businesses still do not have disaster recovery services. But according to Sungard's Howell, succeeding in the market is all about offering a comprehensive approach to disaster recovery. That means widening out an understanding from just IT to all of the factors that will deliver an effective recovery strategy, embracing digital as well as traditional means. ■

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## off-the-shelf: voice systems

## Let's talk business

**IP telephony and unified communications continue to spawn a new generation of devices, handsets and headsets.**

**Alcatel-Lucent** says its *8088 Smart DeskPhone* features new visual communication and collaboration capabilities to help employees be more productive in the workplace.

The new phone is part of the company's recent *OpenTouch 2.1* update. It includes the *OpenTouch Conversation* tool interface that is said to enable workers to easily navigate between workstations, tablets, smartphones and the *8088*, and use the most appropriate device for their needs.

Alcatel-Lucent claims the *8088* offers advanced features for wideband audio and HD video conversations. It has a seven-inch touchscreen WVGA 16:9 LCD, as well as a built-in five megapixel HD autofocus camera with an ambient light sensor. There's also an HDMI 1.4 port to connect an external HD display for screen replication. The company says this presents an opportunity to transform regular meeting areas into video-enabled conference rooms.

Other features include Bluetooth 2.1, support for secure SIP and RTP, and Gigabit Ethernet PC-through ports with 802.3AF PoE (class 3) and 802.3az power-saving management.

Alcatel-Lucent reckons the *8088* is ideal for hospitality applications where the open APIs can be used to create customised capabilities such as room automation and video concierge services.



**Gigaset pro** has introduced its hybrid *T440 PRO* and *T640 PRO* IP PBX platforms so that customers can still use their existing ISDN and analogue lines while seamlessly moving into VoIP and SIP.

It says the *T440* is capable of handling 40 users, 100 devices and 20 parallel calls, while the *T640* supports up to 80 users, 250 devices and 40 parallel calls. Gigaset adds that all users have access to

a "highly intuitive" web-based interface for easy management of their calls, voicemail messages, contacts and more.

The platforms integrate with the vendor's *PRO* SIP-based desktop phones as well as its business DECT models. The firm says all connected devices are fully auto-provisioned, making installation and setup simple.

Both also support various telephone directories, and users are able to use any Gigaset pro device to access and compile their own phone directory.

The *T440* and *T640* can be used to automatically connect incoming calls to the right person or group. A configurable automated

attendant makes it possible to offer callers a range of call destinations, and the PBX includes a free queuing system that informs them about their position in the queue.

Gigaset adds that each platform features an "advanced" voicemail system that is accessible from outside the office, and messages can be sent as audio attachments to a smartphone.

Users also have the option of configuring the main screen to suit their personal requirements. The interface is automatically scalable and adapts quickly to any screen size, from smartphone to desktop screen.



**Mushroom Networks** reckons it's come up with a solution that significantly enhances the voice quality and reliability of calls made using VoIP.

The firm says while VoIP is gaining wider adoption in enterprise networks, it still suffers from inconsistencies in voice quality and a reliability. It claims *VoIP Armor* directly addresses these problems by creating a bonded IP tunnel that adds redundancy and protects against any negative network conditions.

The new solution is built into Mushroom's patented *Truffle* appliances.

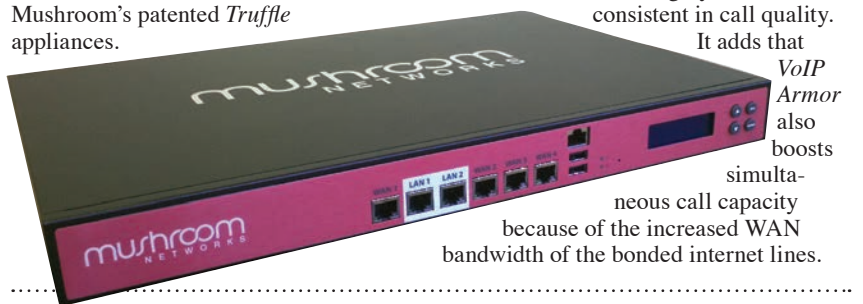
These use 'Broadband Bonding' which is designed to aggregate and intelligently orchestrate multiple internet access lines.

The company says *VoIP Armor* shields VoIP traffic against any type of WAN link performance fluctuations and link failures. The technology relies on two or more Broadband Bonded internet links to protect VoIP packets against loss, delay and jitter, as well as against starvation from other cross traffic.

According to Mushroom, the end result is that VoIP calls are highly reliable and consistent in call quality.

It adds that *VoIP Armor* also boosts simultaneous call capacity

because of the increased WAN bandwidth of the bonded internet lines.



**Plantronics** claims its *Blackwire 725* USB headset is the most productive and versatile corded model on the market.

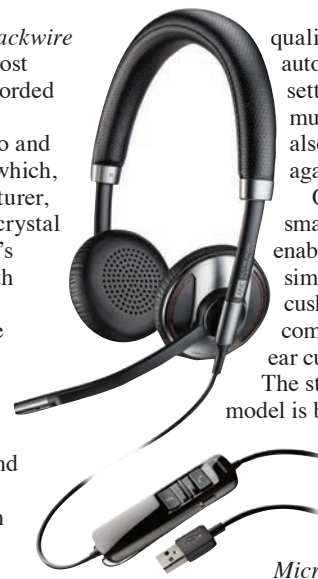
It offers wideband audio and digital signal processing which, according to the manufacturer, mean incoming calls are crystal clear. It adds that the user's voice is also delivered with clarity thanks to a noise-cancelling mic and Active Noise Cancelling (ANC) technology. This reverses surrounding soundwaves to cancel low frequency noise in order to isolate and minimise ambient noise.

A dynamic equalisation feature is also included to optimise the user's voice

quality when on calls, and automatically adjusts the EQ settings when listening to music or multimedia. There's also *SoundGuard* to protect against harmful audio spikes.

Other features include smart sensor technology which enables users to answer a call by simply putting the headset on, a cushioned metal headband for comfort and durability, folding ear cushions, and a carrying case.

The standard *Blackwire 725* model is built for UC applications from Avaya, Cisco, Skype, *et al*, while there's also version available that is optimised for use with *Microsoft Skype for Business*.



**Spectralink Corporation** has launched the *PIVOT:S*, the latest handset in its *WorkSmart* range of enterprise mobile communication devices.

Designed to bridge the gap between consumer smartphones and purpose-built mobile solutions, Spectralink says the *PIVOT:S* further expands its line-up of VoWi-Fi handsets. It claims the device delivers more flexible enterprise-grade, on-site voice mobility with a user-friendly interface on an extensible application platform.

The handset is said to offer HD voice quality, seamless VoWi-Fi roaming, durability, broad telephony support, and

WLAN interoperability. It is built on *Android OS* and is also certified for *Google Mobile Services*.

Spectralink says the *PIVOT:S* offers instantly familiar and intuitive smartphone-like usability, as well as access to a vast ecosystem of enterprise workflow applications.

It will also support specialised, workplace-specific applications through Spectralink's AIMS (Application, Integration and Management Solutions) partners. The vendor claims this will enable users to customise their devices to their unique workflow requirements, and opens up new opportunities for end-user efficiency solutions.



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## How does your salary compare?

Recent research from salary benchmarking site Emolument.com reveals how much leading technology companies pay their employees. It found that software and internet focused companies offer the highest salaries to junior employees in the tech industry, with hardware firm HP paying just half of the average junior salary at LinkedIn.

According to Emolument, this trend appears to highlight a recruitment strategy by some of the leading companies to attract the best young developers who can add more value to their non-hardware based products or services.

"As a brand, LinkedIn arguably doesn't have the same level of prestige or glamour as Google or Facebook, which may explain why they pay junior employees as much as 20 per cent more, in order to attract the right kind of talent," said Emolument. "Similarly, Amazon has previously faced high profile criticism for its poor working conditions, but offering such attractive salaries for junior employees will go some way to establishing the company as a desirable employer for technology talent."

The study also revealed salary details for senior employees. For example, Emolument found earnings for employees in Europe with more than 10 years of experience are typically higher at Apple at £76k compared to £69k for Microsoft.

The statistics come from crowdsourced pay data submitted anonymously at Emolument.com by more than 46,000 individuals in order to access their own personal salary benchmarking report. To see how your earnings compare for free, visit [www.emolument.com](http://www.emolument.com).

Company	Salary
LinkedIn	£60,000
Amazon	£55,000
Microsoft	£51,000
Facebook	£49,500
Google	£48,000
Criteo	£41,000
Intel	£40,000
SunGard	£35,000
IBM	£35,000
eBay	£33,000
HP	£30,000

**Average salaries for junior employees in Europe from some of the world's highest profile technology companies.** SOURCE: EMOLUMENT.COM

## Students train as cyber warriors

University of Wolverhampton computing students have trained as 'cyber warriors' in a bid to tackle hackers and boost their career prospects.

Six students from the Faculty of Science and Engineering attended a residential Cyber Camp in Coventry, where they learned to pit their wits against hackers and work in teams to combat cyber attacks.

The three-day event was hosted by Cyber Security Challenge and included information about the industry and the job opportunities within it, as well as talks by specialists that included the National Crime Agency.

The CyberSecurity Challenge is a Government-backed national programme to develop the cyber security skills that are needed now and in the future. The students' participation was arranged by Tony Proctor, principal lecturer in the School of Maths and Computing. He said it was a unique opportunity for students.

"It allowed them to hear first hand from experts in cyber defence, and as a result of it they will be going on to achieve an

industry recognised qualification. This will further enhance their employability when they graduate this year," he said.

The qualification students will gain is Comptia Security+. One of those who took part, Tahlil Ali, said the cyber security camp was a great experience: "Hearing from companies in the industry was really helpful. On the final day we were put into a disaster recovery simulation and tested on how well we worked together as a team to produce a solution to the task."

## NEW COURSES

**Advanced Cisco certifications for cloud and IoE – New Horizons**

Cisco has announced new certifications for developing the competencies needed for the Internet of Everything (IoE). They

focus on connecting, orchestration and automation, and creating infrastructure to enable data analytics in real-time.

**Certified Network Associate (CCNA)** is used primarily for industrial purposes in conjunction with the IoE. The certification is a part of Cisco's Industrial Education curriculum which focuses on IT, control engineers and plant administrators. New Horizons says the curriculum aims to close the skills gap as manufacturing and industrial infrastructure converge into one.

**Cloud Certification: CCNA and Certified Network Professional (CCNP)** will allow IT professionals to build and manage cloud-based systems. The certification distinction is for entry-level employees to provide IT and cloud support, whereas the CCNP certification gives candidates the skills to discuss and explain cloud software and concepts. CCNPs are also able to build

and operate complex systems in various environments. [www.newhorizons.com](http://www.newhorizons.com)

## Apple Devices in the Enterprise – QA

With the majority of organisations considering or already utilising a BYOD policy, QA says IT managers are being put under pressure to support the transition and business strategy moving forward.

In this two-hour seminar, QA aims to cover the important aspects of using Apple devices in a business environment. Delegates will learn how to integrate OS X with Microsoft Active Directory, use Microsoft Office on Apple devices, secure iOS and OS X in a corporate environment, and how Apple deals with security.

Seminar sessions were recently held at QA's London training centre, but other locations in the UK are also available on request. <http://tinyurl.com/ghlvvwx>

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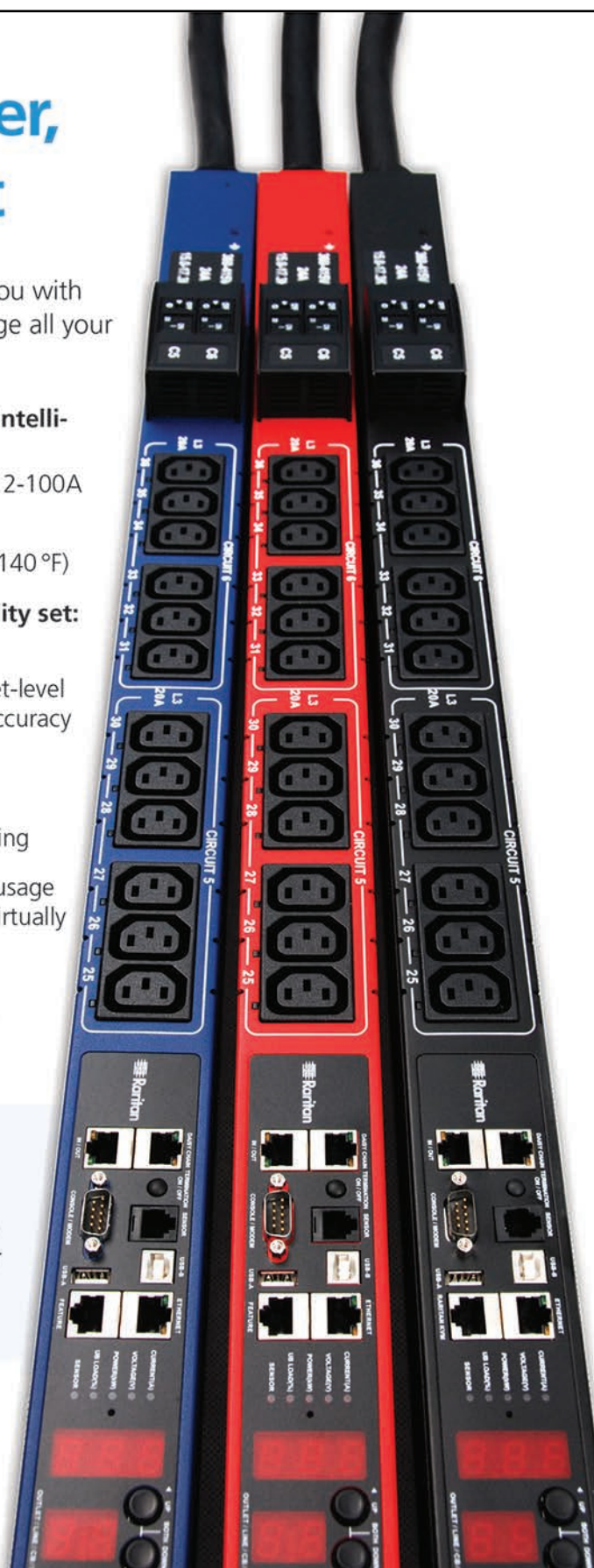
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