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Government plans move away from proprietary software

by Rahiel Nasir

Cabinet Office minister Francis Maude believes the government could save millions by ditching proprietary office productivity software from big name brands and switch to using more open source platforms.

Speaking at a government technology event at the end of last month, Maude said that the software used in government was still supplied by a few large companies, with a "tiny oligopoly" dominating the marketplace. According to recent reports, Whitehall has spent around £200m since 2010 on *Microsoft Office* alone.

"Technical standards for document formats may not sound like the first shot in a revolution," said Maude. "But be in no doubt: the adoption of compulsory standards in government threatens to break open Whitehall's lock-in to proprietary

formats. In turn, we will open the door for a host of other software providers."

Last September, the Cabinet Office announced that the Open Standards Board had recommended the approval of the first open standards for government technology. It said: "The adoption of open standards will give government bodies access to a wider marketplace of innovative suppliers by encouraging a level playing field for open source and proprietary software providers. It will help the move away from restrictive long-term deals with a small number of suppliers."

Matthew Finnie, CTO of Interoute which claims to operate Europe's largest cloud services platform, says that while it is laudable for the government to want to switch to open source, it is missing the real

point: "With annual spending around £6.9bn, issues with efficiency are structural and policy-driven; they won't be fixed by swapping out one licence type for another. [This would be a] saving which accounts for nowhere near the whole cost of document management in Whitehall.

"Stripping back policies and bureaucracy – like a solid review of the protective marking system, the PSN and other cost hurdles – would open up public sector IT further to a far more competitive tendering process."

Open-Xchange, which makes messaging, collaboration and office productivity software, is naturally more supportive: "Microsoft has enjoyed a virtual monopoly in the office productivity software sector for over two decades," says CEO Rafael Laguna. "This has resulted in the public sector, businesses and individuals paying way over-the-odds for standard software, while many other applications used for business are available for free, or a much lower cost.



Interoute CTO Matthew Finnie says the government has missed the point – swapping one software licence for another is not the answer.

"Organisations have felt that the *Office* suite was the only option available to them. There are now multiple productivity suites capable of using Microsoft file formats, and the advent of applications being delivered through the cloud essentially mean that the traditional software licence as we know it is dead." ■



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See more details on page 4

Networks will be swamped by mobile traffic over next four years

Global mobile traffic is predicted to grow nearly 11-fold over the next four years, according to Cisco's *Visual Networking Index (VNI) Global Mobile Data Traffic Forecast* for 2013 to 2018.

It says the projected increase is partly due to continued strong growth in the number of mobile internet connections, such as personal devices and M2M, which are expected to exceed 10bn by 2018.

According to Cisco, last year M2M connections represented nearly five per cent of mobile connected devices in use and generated more than one per cent of total mobile data traffic. By 2018, they will represent nearly 20 per cent of mobile devices in use and generate almost six per cent of total mobile data traffic.

Among some of the other key predictions, the *VNI* says the incremental amount of traffic that will be added to the mobile internet just between 2017 and

2018 will be 5.1 exabytes per month – more than three times the estimated size of the entire mobile internet in 2013 (1.5 exabytes per month).

Over the next four years, global mobile traffic growth is expected to outpace global fixed traffic growth by a factor of three, while mobile cloud traffic will grow 12-fold. Wi-Fi offload traffic is also forecast to surpass cellular traffic – by 2018, 52 per cent will be offloaded onto small cell networks, up from 45 per cent in 2013.

The *VNI Global Mobile Data Traffic Forecast* relies upon independent analyst forecasts and real-world mobile data usage studies. Cisco uses this information as a foundation upon which to layer its own estimates for mobile application adoption, minutes of use, and transmission speeds. Key enablers such as mobile broadband speed and device computing power are also factored into the projections and findings. ■

BT to sue Scotland for £20m over SWAN contract

The Scottish government has, as expected, awarded the £110m Scottish Wide Area Network (SWAN) to Capita – but it faces a £20m damages claim from BT.

The telco says its bid came in £10m cheaper, and lodged an appeal against the award of the contract to Capita and Udata Infrastructure (see *News*, Jan 2014). However, following hearings in the Court of Sessions presided over by judge Lord Malcolm, BT has now dropped the appeal

but will continue to seek compensation. “The case will now proceed as a damages claim, Lord Malcolm having found damages to be an appropriate remedy for BT,” states the company.

A spokesperson for NHS National Services Scotland, which is overseeing the procurement, confirmed BT was cheaper by £10m. He added: “The best product for any given job is not necessarily the cheapest. Price was just one element in deciding the

best bid. The other factors we scored were technical standards, performance, and commercial/legal aspects. Each element was around 33 per cent of the total score.”

BT believes that it is now “unclear” whether Scotland will have the most “economically advantageous” contract.

The Scottish government claims SWAN will save it £300,000 a month compared to existing network contracts. It said it also offers: more secure transmission of data

between public sector partners; greater bandwidth; increased interoperability between public sector bodies; easier future integration; and the ability to accommodate other users more easily.

The initial SWAN contract is worth £110m and will connect more than 4,600 sites including NHS bodies, Education Scotland and several local authorities. The eventual value could be £325m once all the potential users are on the network. ■

iTrinegy ensures critical app performance for Yorkshire NHS

iTrinegy has helped NHS West and South Yorkshire, and the Bassetlaw Commissioning Support Unit to improve the performance of their networked applications.

The Commissioning Support Unit (CSU) has an extensive network that links more than 500 GP surgeries and clinics. It also provides connectivity to centrally stored national data which are accessed through a variety of secure networks.

The CSU's Network Division has to ensure that the performance of the data is at optimum levels and is easily accessible to the right departments. Paul Simms, the division's network support manager, says problems began after an apparent slowdown of the hosted clinical system caused severe disruption within the practice and was having a direct impact on patient care.

“We began to investigate the cause of the problem. Early checks indicated that all

was well with the local switches and other networked devices; we [therefore] needed to conduct a more thorough investigation to get to the cause of the problem.”

As a result, the trust introduced iTrinegy's *AppQoS* into its network environment where, over a period of seven days, it monitored all client-server interactions for the affected network segments and rapidly isolated the problem.

“*AppQoS* was able to produce a definitive list of the users and devices that had caused the bandwidth bottlenecks,” says Simms. “After consultation with the practice manager and staff, we quickly restored system access.”

iTrinegy claims that *AppQoS* can be used to deliver real-time application-level visibility without the need for hosted agents. It also offers the ability to drill down to deliver more granular information. ■

NAC seen as most effective security technology to counter cyber threats

Network access control (NAC) is seen as the best security technology to defend against today's cyber threats, according to a new survey. In its 2014 *Cyberthreat Defence Report*, specialist research firm CyberEdge Group found that 77 per cent of IT professionals are using, or plan to use, NAC for mobile security.

Respondents were asked to rate their perception on the effectiveness of various cyber defence solutions. NAC received the highest score at 3.71 (five being the highest). More than half said that NAC is the most often used technology to detect host security misconfigurations (53 per cent), as well as vulnerabilities and security misconfigurations within transient laptops and mobile devices (51 per cent).

According to the report, BYOD adoption will rise from 31 per cent in 2014 to 77 per cent in 2016. This is making data security more challenging for enterprises which are facing three disruptive changes. These are: infrastructure complexity due to an increase in network connections and use of mobile, virtualisation and cloud technologies; diminished capacity to manage endpoints caused by growing network-enabled and personal device use in the workplace; and difficulty to efficiently mitigate exposures within a growing attack landscape.

To address these challenges, CyberEdge



Scott Gordon, CMO of ForeScout Technologies, says NAC is a “cornerstone technology”.

says many organisations are supplementing their existing security investments with next-generation NAC to dynamically see and control user, device, application and access diversity. It adds that organisations are also progressing their traditional layered defence model to one that leverages infrastructure interoperability in order to better support continuous monitoring and mitigation processes.

CyberEdge carried out its survey with more than 750 security decision-makers and practitioners in organisations with 500+ employees in Europe and North America.

The research was sponsored by several infosec specialists, including ForeScout Technologies. Its CMO Scott Gordon says: “We believe that NAC, with its ability to dynamically resolve security exposures, enhance control content and automate remediation capabilities, is the cornerstone technology to advance continuous monitoring and mitigation programmes.” ■

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ShoreTel UC displaces Avaya for 8,000 workers at Brunswick

Brunswick Corporation has replaced its legacy Avaya/Nortel systems with a unified communications platform from ShoreTel.

Although based in the US, Brunswick's products for the marine, fitness, bowling and billiards markets are sold worldwide. It has 15,000 employees globally, and the new UC system is currently being installed for 8,000 of them at more than 200 sites. ShoreTel says that around a third of these are now live with more deploying each month.

Brunswick is using ShoreTel's UC and *Enterprise Contact Centre* solutions to enable employees to work more efficiently from anywhere in the world. The system is said to feature built-in N+1 redundancy for business continuity. The company is also deploying *ShoreTel Mobility* in Europe, the US, Middle East and Africa and expects this to help cut its mobile phone roaming costs in half.

“Whether it's supporting new business processes or scaling up to incorporate different geographic locations, ShoreTel's unified communications platform has given us ease of deployment and flexibility,” says Mike Tegtmeier, director of enterprise



Brunswick specialises in products for the leisure industry including bowling equipment.

network services, Brunswick. “Above all, it has a clear return on investment for our business, and will pay for itself within two and a half years at some of our sites.”

In early results, Brunswick says the new IPT and UC platform has resulted in employees saving an average of 25 minutes per day by facilitating communication when they are working from home or abroad. ■

Vodafone claims UK first with indoor mobile service for businesses

Vodafone claims to have launched the UK's first enterprise-grade indoor mobile capacity and coverage service. *Sure Signal Premium (SSP)* is aimed at medium and large businesses who need high-quality 3G and ultrafast 4G (available in selected areas during the summer) mobile coverage throughout their premises.

According to the operator, SSP can be installed as "quickly and easily" as Wi-Fi, and seamlessly self-configures to provide "perfect" voice and data services indoors. It is intended for businesses with 320 or more employees, and more than 3,200m² of floorspace. Vodafone adds that it can scale up to support many thousands of users.

The service was developed in partnership with NEC and SpiderCloud Wireless. It will also provide a platform for future enterprise comms with support for location-based analytics and mobile device management.

SSP securely connects to Vodafone's network using *Sure Signal* technology that is said to be both robust and secure. As the only UK firm to own an integrated fixed and mobile network, the operator reckons it's ideally positioned to provide the best possible connection for large businesses.

"The rise of the smartphone, mobile apps and BYOD in the workplace means high-quality, high-speed indoor coverage is no longer just a 'nice-to-have' for business," says Vodafone UK CTO Fergal Kelly. "This new service is just one benefit from the £900m we spent last year on our fixed and mobile network in the UK."

■ Premier Foods has signed a multimillion pound deal with Vodafone for fully integrated communications. The five-year

contract covers fixed and mobile voice services as well as an upgraded, managed network linking all Premier's sites.

The company, which owns brands such as *Batchelors*, *Bisto* and *Mr. Kipling*, sees the single source agreement as an important step in supporting plans to simplify its organisation, improve operational efficiencies, and enhance collaboration.

Gavin Darby, CEO of Premier Foods, says: "Reducing complexity is a key part of our strategy to drive growth. By continually improving our efficiency and effectiveness, we will be better able to meet customer needs." ■



Vodafone's Sure Signal technology has already been used for other applications in the UK. For instance, the Open Sure Signal system provides 3G in areas which lack traditional mobile coverage. The units, about the size of a small carry-on suitcase, use existing broadband services to deliver a 3G signal. This Open Sure Signal unit is installed on Halecat Barn in Witherslack, Cumbria. Vodafone has deployed the technology in 11 other communities across the country.



THE WORLD ACCORDING TO...

Adrian Foxall, CEO, Camwood

'App chaos' could hinder economic recovery for some businesses

Over half the apps currently on the IT infrastructures of UK organisations are either obsolete or redundant. Such apps represent a staggering drain on resources, and may slow down the speed at which businesses can take advantage of the improving economic climate.

In an independent survey of 250 IT decision makers in companies with more than 2,000 seats, we found that almost half agreed that up to 60 per cent of the apps in their portfolio were superfluous. These unnecessary apps are costly to maintain and could have a negative long term impact on business innovation if IT departments do not take action now.

In our experience, mergers and acquisitions, rapid company growth, and lack of IT planning are the root causes of bloated IT infrastructures. Many organisations waste time, money and resource on maintaining legacy apps that they simply don't need.

It's understandable that, with a plethora of software requirements and trends such as BYOD and BYOA, busy organisations can lose track of their app portfolio. But the costs of doing so can be high. Many do not have a true picture of all the apps

provisioned on their estate, and are therefore unaware of the negative impact that these are having on the smooth running of their IT infrastructure. 'App chaos' can prevent firms from innovating and reacting to business transformation requests in an agile manner.

Unnecessary apps lead to excessive licensing and support costs, as well as over-use of system resources such as disk space, memory and network bandwidth. What's more, it is impossible to negotiate with software vendors in an informed way without knowing the true extent of your app use, deployment and spend.

Businesses are keen to take advantage of improving economic conditions. But in almost every example, the app is the critical blocker. Apart from the cost implications, legacy estates are frequently incompatible with the emerging needs of the workforce. Agile solutions like BYOD, BYOA, corporate app stores, cloud services and access via mobile devices are increasingly expected – but these innovative types of projects cannot be delivered with this degree of app chaos. *On-premise apps are becoming "too bloated" – news, p6*

UCLH improves IT performance with end-user analytics

University College London Hospitals (UCLH) NHS Foundation Trust will use Nexthink's V5 platform for real-time visibility and analytics across its technical estate and network infrastructure.

Nexthink says V5 proactively monitors networks and reports on events such as: infrastructure changes; application usage and bandwidth; error messages and crashes; and potential security risks. The modular system aims to ensure that IT performance is recorded and uniquely visualised from the perspective of the end-user.

UCLH is always looking to lower its costs and free-up resources as it strives to deliver improved levels of system performance and service quality across its technical estate, according to Mark Taglietti, head of ICT service delivery and vendor management.

He adds that V5 will help the trust to achieve its ambitious goals going forward: "Ultimately, more robust, secure and standardised IT services will allow our frontline practitioners to carry out their work more effectively, resulting in the delivery of improved patient care, patient services and patient experience."

UCLH is said to be one of the UK's largest NHS trusts. During the 2012-2013 financial year, it turned over £840m, treated 870,000 outpatients, and admitted 150,000 in-patients. It comprises six hospitals: University College Hospital; National Hospital for Neurology and Neurosurgery; Eastman Dental Hospital; Royal National Throat Nose and Ear Hospital; Heart Hospital; and Royal London Hospital for Integrated Medicine. ■

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Phoenix achieves ISO 22301 for business continuity

End-to-end service provider Phoenix has become one of the first UK companies to achieve ISO 22301, the new international business continuity standard. Lloyd's Register Quality Assurance, an independent provider of business assurance services, carried out the audit and has certified that the firm meets all the requirements. Phoenix's UK recovery centres and main administration office in Aston are all now ISO 22301 certified. The new standard specifies the setting up and managing of an effective Business Continuity Management System (BCMS) for any organisation, regardless of type or size. Phoenix says that it has now implemented a new programme to further develop its BCMS, and wants to work with customers to help them also achieve the standard. ■

Scottish institutions to benefit from latest IPT services

Daisy Group has been selected as one of the providers on the framework agreement for IPT systems and as the sole supplier for the procurement of Mitel and Avaya handsets to Scottish universities and colleges. The framework was created to provide handsets and IPT systems to members of APUC (Advanced Procurement for Universities and Colleges), offering them the best value without the need for high spend or volume commitments. The position on the framework agreements, which initially runs until September 2015 (with potential for extension beyond this), was awarded to Daisy after participating in an EU level tender led by APUC. ■

Datwyler UK re-brands

Datwyler UK Ltd has a new name – it will now be known as 'iDaC Solutions'. As the sole source for Datwyler Cabling Solutions in the UK and Ireland, iDaC is keen to point out that it will be "business as usual" as it continues Datwyler's 30 years of trading in the UK market. The firm says that its products, services, personnel and direct supply model remain unaffected. "This change enables us to re-launch the Datwyler Cabling Solutions brand as part of an integrated system of products for the data network, elevator and fire safety markets," says iDaC MD Paul Cattell. ■

UC lands at Belfast City Airport

George Best Belfast City Airport (BCA) has replaced its traditional phone system with business VoIP and cloud-based unified communications from 8x8 Solutions.

BCA serves a range of destinations in the UK and Ireland and is Northern Ireland's sole air link with Heathrow. It has 1,500 employees who work in eight buildings spread over a 100,000ft² site.

The airport's existing premise-based PBX system required expensive engineering input for simple administrative changes and did not have the capacity for expansion. In addition, there were very limited disaster recovery options with no straightforward mechanism to activate additional lines to deal with periods of high demand. The system also lacked detailed reporting and analytics capabilities, which were necessary



Belfast City Airport's existing PBX was unable to cope with the needs of its 1,500 employees who work across eight buildings.

to evaluate the effectiveness of aspects of the airport's customer service.

Terry Moore, CEO of BCA's IT solutions provider Outsourcing Solutions, says: "After a thorough assessment, a decision was made to replace the airport's old PBX system with

8x8's cloud-based communications solutions. The challenge we faced was upgrading the technology during the airport's normal day-to-day operations, which saw over 2.5 million passengers using the facility in 2013 making it one of the busiest periods in the airport's 30-year history."

The cloud-based platform 8x8 Solutions deployed for BCA is configured to not only handle present needs but to also scale for future requirements, seasonality and VIP communications. It also offers real-time reporting and analytics, enabling the airport to accurately measure, rate and analyse telephone-based service aspects.

8x8 Solutions was formerly known as Voicenet Solutions and is the European arm of California-based unified comms and collaboration specialist, 8x8 Inc. ■

Telehouse opens new colo floor at flagship centre

Telehouse has opened the final floor at its flagship London data centre. Telehouse West is located in East India Dock adjacent to the company's existing North and East facilities that consist of almost 20,000m² of occupied customer space.

Telehouse West can offer power capacity between 2 to 10kW per rack over shared, dedicated, cold aisle containment and high-density hosting areas. The new floor offers 1000m² of available colocation space.

The firm says it had taken a phased approach to selling space on West's five floors, opening a new one on average every 18 months. When the 5,000m² West centre

first opened in 2010, Telehouse claims that it had already pre-sold more than 1,300m² to a number of "well-known" multinationals in the telecoms and media industry.

Telehouse adds that the success of the project has brought forward its plans by three years. Led by its parent company KDDI Corporation, it has expanded its footprint in Europe as well as its local services to support clients in managing their data centres via newly improved migration, system integration and hardware solutions. The company has also expanded further colocation space in Telehouse East in Docklands and its Metro site in the City. ■



Based in London's East India Dock, Telehouse West offers 5,000m² of colocation space and power capacity between 2 to 10kW per rack.



Electricity North West is one of the six companies that operate Great Britain's 14 original electricity distribution networks. PHOTO: ELECTRICITY NORTH WEST

Sudlows in £1.7m data centre deal with Electricity North West

Sudlows will design and build a new data centre for power distribution operator Electricity North West (ENW).

In a deal worth £1.7m, the Manchester- and London-based communications systems specialist says it will deliver "a highly resilient, state-of-the-art facility" to support ENW's critical infrastructure.

Andy Hirst, Sudlows' global director, says: "It is essential that the new data centre is designed to operate at the highest of standards to maintain resilience and uptime." The new data centre will be located in northwest England.

Electricity North West delivers more

than 23 terawatt hours of electricity each year to 2.4 million properties and to more than five million people across the region. It is one of the six companies that operate Great Britain's 14 original electricity distribution networks.

Paul Geddes, IS capital programme manager for ENW, says Sudlows was chosen because of its reputation for delivering "efficient" data centre facilities. He adds: "Investing in a new data centre is part of our long term investment programme and it will help us continue to provide a reliable and efficient supply of power across the North West for many years to come." ■

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VIEW FROM THE TOP

Paul Evans, managing director, Redstor

Virtual disaster recovery solutions: a must for modern businesses

There's been a huge shift over the last year towards virtual disaster recovery, with the industry reporting 15 per cent growth in the past six months. Businesses are embracing the cloud and seeing the benefits it brings against outdated methods of physical disaster recovery. Yet there are still many that rely on traditional solutions to protect their most important asset, their data, in the event of a disaster.

Traditionally, contingency plans for business managers would consist of storing data on tapes and shipping them out to remote locations to ensure that critical information is protected from any eventuality. In the event of a disaster, accessing the stored data off-site would be expensive, stressful and time-consuming. All this can be easily averted with a virtual disaster recovery service. So shouldn't all business managers consider having such a system in place?

One of the key problems faced by businesses that rely on physical disaster recovery solutions is that there is more hardware to go wrong, increasing the risk of dissimilarities between devices and meaning that there is an increased chance that data may become corrupted.

Virtual disaster recovery replicates critical applications and operating systems, as well as the most recent

working data, into a secure cloud environment. These can be brought online almost instantly in the event of a disaster, keeping an organisation's wheels in motion and reducing downtime to an absolute minimum.

Physical disaster recovery is becoming a relic due to its slow speed and the inherent difficulties involved in its use. In contrast, virtual disaster recovery is not only dramatically quicker at getting a business back to normal, it is also often cheaper. One of the main reasons for this is that companies do not have to invest in their own physical space and hardware to store data; they simply rent space at low cost in a third party cloud.

Research from Neverfail shows that one in five businesses lose up to £10,000 an hour due to IT outages, and 92.8 per cent report that they have suffered problems in the past year. This simply reinforces the question of why more companies are not moving to virtual disaster recovery solutions.

Data and systems are everything in a world where being offline for too long can not only cost productivity but the business itself. Virtual disaster recovery is the best way to protect a firm from the old worry of losing everything when the inevitable does eventually happen.

On-premise apps are becoming "too bloated"

On-premise applications are becoming "too bloated" according to 72 per cent of IT directors surveyed by ICT services provider Damovo UK and Ireland. Many respondents reveal that some functionality of on-premise apps is unnecessary for their needs and only adds to the cost of upgrading to the latest version. As a result, they are turning to the cloud in order to regain control over the make-up of the software packages they deploy.

"Organisations are increasingly finding they have a whole host of application functionality that goes unused," says Alex Williams, operations director for Damovo UK and Ireland. "Unfortunately, businesses end up paying for this functionality when they upgrade to the latest version, whether they want it or not."

Williams says cloud services are the "natural remedy", giving businesses back control over which functions they buy and

cutting down the bloat in on-premise apps.

Sixty-two per cent of the IT directors polled cited cost reduction as their main driver behind cloud adoption. However, whilst public cloud services can offer cost savings and greater flexibility, Williams points out that their limited ability for customisation can make them unsuitable for users with more specific requirements. As a result, he says firms can end up in a position where they're trying to "force a square peg into a round hole".

"Private cloud solutions can offer the best of both worlds, enabling businesses to build a cloud around their specific needs and integrate it seamlessly with existing IT, whilst also benefiting from the cost and innovation benefits of public cloud."

Damovo carried out its survey with 100 IT directors at UK organisations with more than 1,000 employees working across multiple business sectors. ■

Silver Peak accelerates WAN performance

Silver Peak's virtual WAN optimisation software now supports deployments on VMware's vCloud Hybrid Service.

The firm says that cloud performance can be limited because of the bandwidth, latency and quality challenges that are inherent in a WAN. It has therefore teamed-up with VMware to alleviate these issues.

vCloud has been designed as a secure, dedicated hybrid cloud service and is built upon VMware's vSphere platform. Silver Peak says its WAN acceleration software complements the service in several key areas, such as initial data migration, ongoing data synchronisation, and multi-site access to the cloud. It accelerates data transfers to the cloud and provides, according to Silver Peak, "an ongoing LAN-like experience" for cloud-hosted applications, enabling users to more quickly and easily transition to a public or hybrid environment over distance.

"The performance of any cloud application is directly related to the performance of the network," says Marc Trimuschat, VP of alliances, Silver Peak. "Whether you plan to use vCloud Hybrid Service for hosting business applications or backing up



Silver Peak claims its WAN acceleration software provides an "ongoing LAN-like experience" for cloud-hosted applications.

data, our software installs quickly and easily to make your cloud resources feel like they are in the same building."

Silver Peak has two versions of software available from the vCloud Hybrid Service marketplace: VX is for geographically distributed, multi-site access, while Velocity Replication Acceleration is for secure site-to-site data migration, ongoing replication and backups. The software is deployed at each end of a WAN connection. ■

Lend Lease moves to IaaS

Global property developer and infrastructure group Lend Lease is now using IaaS. Its aim is to align IT to business strategy, and free in-house resource to develop IT programmes that can generate new revenue streams and support expansion.

With its existing data centre in Harrow almost 10 years old, Lend Lease knew it needed a new solution but wanted to migrate to a more agile and scalable infrastructure. "We wanted to focus on innovation in the business rather than just keeping the lights on," explains Chris Lemon, regional infrastructure manager, EMEA. "We knew we didn't want to build from scratch (the business case just didn't stack up) so we chose to explore an IaaS model. We sought a partnership where we could retain

in-house what we needed to make our speed of delivery right and stay agile, but let the experts take care of the rest."

Working with Lend Lease's team, Logicalis designed and migrated the company's infrastructure into its *Optimal Managed Service* model. This included the re-platforming of legacy applications, implementation of a cloud model, colocation, and a range of managed services.

Lemon says deploying IaaS is less than half of what it would have cost Lend Lease to build a new data centre. Over the next three years, it is expected to deliver further savings on IT resource, management and energy bills. "Not only are we making a substantial saving on energy costs, we've also moved out of a costly refresh lifecycle." ■

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Governed by technology

Faced with funding cuts and the continuing need to save money, here's how ICT is playing a key role for local and central government departments.

Colt provides more than just VDI for HFC

Virtualisation has enabled Hammersmith and Fulham Council (HFC) to cut the total cost of ownership of its desktop environment by one third. The deployment, carried out by Colt Technology Services, has led to a 20-25 per cent reduction in per-user seat cost and an 80 per cent reduction in power consumption thanks to thin clients that have replaced the council's aging PC estate.

HFC pioneered desktop virtualisation 10 years ago but the solution it had in place was limited in the number of users and services it supported. After scoping the technical, service and commercial requirements, Colt recommended a solution that addressed the different needs to virtualise and package the 300 applications HFC has to maintain. Paul Calvert,

IT services solution director, says: "Colt worked with the council and its partners to conduct a virtualisation assessment of the applications and users before developing a proof of concept to allow them to experience how applications would perform in the new environment."

Colt worked with the Hammersmith and Fulham Bridge Partnership, a joint venture setup in 2006 between the council and Agilisys, utilising technology from Cisco and VMware. The VDI solution is hosted across two of Colt's data centres for disaster recovery and delivered on a price per user basis, providing a transparent, opex-based cost model. The service is backed up with an end-to-end SLA for an all-inclusive flat monthly fee.

From a technology perspective, Colt says it's offering HFC a complete IaaS platform that can support cloud-based telephony, video and collaboration services equally. It integrates with the council's remote access service, enabling HFC's 2,700 employees to work away from the office, securely accessing the information they need via laptops, smartphones or tablets. This will support the council in its bid to reduce office space and improve the way it provides services to its residents. Colt's WAN encryption services ensure sensitive residential data is secure when an

employee sends and receives data while working away from the office. The VDI rollout complies with government IL2 regulation that exists to ensure sensitive data is stored and protected appropriately.

"With data accessed from various devices, local authorities face a huge challenge to keep information safe," says Calvert. "With a VDI environment, the data is not held locally, which addresses concerns around security. This becomes increasingly important as more and more council workers are now working remotely."

Unified comms for West London tenant organisation

The Kensington and Chelsea Tenant Management Organisation (KCTMO) was established in 1996, following a decision by the tenants and leaseholders of the Royal Borough of Kensington and Chelsea to pursue their legal right to manage their own homes. The organisation now manages around 10,000 properties on behalf of the borough in this area of West London.

Recently, KCTMO opted to upgrade its Siemens *Hi-Path Pro-centre Agile* telephone system. It did not want to incur huge costs for the 'rip and replace' of its existing communications estate and therefore decided to leave its remaining legacy Siemens systems in place.

Initially, Annodata – which specialises in UC and managed print services – replaced KCTMO's contact centre with the *Mitel 3300 Contact Centre Manager Business Edition (CCM BE)*. This offered the organisation enhanced networking capabilities, resulting in an immediate improvement of frontline customer services to all residents which in turn significantly reduced legacy service costs.

Replacing the contact centre element with *CCM BE* has provided KCTMO with an IPT platform. The business can now plan and manage a staged migration for its remaining users onto the 3300 solution.

The system also provides the flexibility to allow staff to access it remotely, and gives KCTMO an extensive level of control and functionality. "The digital display keeps our customer service centre staff up to speed with call volumes and response percentages," says Nurul Miah, head of ICT services. "Additionally, we needed the system to enable us to easily generate call data reports. We share this data frequently and it helps to drive customer service centre efficiency."

In addition, home working for staff and contact service agents, coupled with the integration into the existing mobile estate, has provided extra features such as call transfer, third-party conferencing and disaster recovery resilience.

KCTMO is now moving towards a truly unified communications approach. As part

of its ongoing business partnership with Annodata, it is currently in the process of upgrading to *CCM Enterprise Edition* which will lead to further improvements in the contact centre. The identification of problem calls, quality control issues, the review of KPIs and future integration of social media sites will all help KCTMO to understand its customers perceptions of services offered throughout the borough.



IBM helps MoJ with Big Data

One of the most important objectives for the Ministry of Justice (MoJ) is to analyse vast amounts of crime and offender data to identify hidden patterns of behaviour and prevent reoffending.

The principal risk assessment and management tool used by the National Offender Management Service is the Offender Assessment System (OASys). This is used by around 140 prisons and 35 probation trusts. Information from all completed OASys assessments is collated centrally within the OASys Data Evaluation and Analysis Team (O-DEAT) database, which records information from millions of prisoner assessments. It includes data on individual offender circumstances such as accommodation, education, lifestyle, financial management and income, relationships, etc.

The MoJ identified that merging OASys data with other types of data held in its files would be essential in order to gain a clearer and more comprehensive view of the offender. But with almost four million records on file, it wasn't feasible to trawl through the data manually in an attempt to identify those factors that may mean a prisoner is likely to reoffend.

The ministry turned to IBM's *SPSS Statistics* and *SPSS Modeler Premium* software to analyse the files. For example, the technology helps identify whether offenders with specific problems such as drug and alcohol misuse are more likely to reoffend than other prisoners.

As a result, forecasts about recidivism have substantially improved. In the case of violent crime, forecast accuracy has gone up from 68 to 74 per cent, while predictions for general offences have improved from 76 to 80 per cent.

The MoJ says: "IBM *SPSS* predictive analytics technology enables us to advise on preventative measures, such as appropriate programmes addressing offender behaviour, before a prisoner's release."

In addition, O-DEAT deals with *ad hoc* requests for data analysis, providing vital management information to policy colleagues, management, and practitioners in the field. IBM says the *Modeler* data mining workbench has also helped to speed up and simplify the process of data extraction and manipulation to meet such requests.



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Classroom Wi-Fi fails BYOD test

Could the physical classroom become redundant as teaching centres beef-up their wireless communications networks? PHOTO: CISCO

Just as IT managers in the 1980s found it impossible to resist PCs creeping into the workplace, schools and colleges now face a plethora of mobile devices in the classroom. How are they coping with 'Bring Your Own Device'? IAN GRANT finds out.

Here's the upside to BYOD in the classroom: you get rid of textbooks (as all course material is delivered from centralised cloud servers); manky school satchels and rucksacks disappear, (improving student posture); PCs vanish from school budgets (and reappear on the parents'); teachers hardly need classrooms because students can get everything online (and they can give personalised attention to those that need it).

But what's the reality? Too little bandwidth; few standards; coursework that's not digitised; coursework that you can see properly only on one device; teachers that are neither technically nor pedagogically trained to take advantage of the technology; identity management and authentication issues; network and data security issues; and too little money.

"Schools and parents have jumped [into BYOD] with both feet without really looking," says James Griffiths, senior pre-sales engineering with Boston Networks which has installed wireless networks in hundreds of Scottish classrooms. He reckons the situation is particularly bad in private schools. Parents have bought tablets (typically iPads) for their kids and now insist the schools increase the return on that investment beyond expertise at *Candy Crush* and downloading stuff from BitTorrent sites. Public sector schools seem to be better organised in terms of equipment procurement, but both remain stymied by the impact of BYOD on network bandwidth, management and content provision, according to Griffiths.

Part of the problem is organisational. The distributed structure of education in the UK makes it hard to develop standards and create economies of scale in procurements. It is difficult to discover how much money is actually spent on computers, access devices and networks in education.

That said, figures from the Institute for

Fiscal Studies and the UK Public Spending website reveal that more than £88bn will be spent on education this year. That's 12 per cent of the national budget or about 4.6 per cent of national income. The ones actually doing the spending include the country's 163 universities and colleges, and 32,746 primary and secondary schools. The potential market of learners is close to 10.6 million, of which 8.25 million are in schools and 2.35 million are in higher education.

Despite 32 years elapsing since the *BBC Micro* was launched, there appear to be only patchy examples of good practice in applying digital devices to educate and train citizens. This is also despite a 2003 report from the Joint Information Systems committee (the forerunner to education technology consultancy, Jisc) which warned that mobile digital devices were likely to completely change the classroom and teaching.

It said: "The concept of teaching *per se* is moving away from the 'whole course' approach towards the provision of resources which can be combined to give the students the individualised learning experience they increasingly want. E-textbooks and e-learning content must also be seen in a (higher education) context now rich in digital content of all kinds, much of which is purchased, licensed and mediated through the library." Today, for "library" you can substitute "cloud".

DEVELOPED MARKETS				DEVELOPING MARKETS			
Download Data per User		Uplink Data per User		Download Data per User		Uplink Data per User	
Apple iPhone 5s	684 %	HTC Sensation	771 %	Apple iPhone 5s	2040 %	Samsung/Galaxy S4	1100 %
Apple iPad (4th generation)	651 %	Apple iPad (4th generation)	650 %	Apple iPad (3rd generation)	1564 %	Apple iPad (3rd generation)	919 %
HTC Sensation	641 %	Samsung Galaxy S4	584 %	Samsung/Galaxy S4	1327 %	Samsung/Galaxy S III	522 %
Sony Xperia SP	611 %	HTC Desire S	584 %	Apple iPhone 5	1274 %	Samsung/Galaxy Note II	877 %
Apple iPhone 5	573 %	Apple iPhone 5	483 %	Apple iPhone 4s	1167 %	Apple iPhone 5	815 %
Apple iPhone 5c	562 %	Apple iPhone 5c	484 %	Apple iPhone 4	1123 %	Apple iPhone 4	809 %
Apple iPad (3rd generation)	515 %	Sony Xperia 1	470 %	Apple iPhone 5c	1019 %	Apple iPhone 4s	799 %
Apple iPhone 4s	515 %	HTC One	462 %	Samsung/Galaxy S III	951 %	Samsung/Galaxy S III	758 %
Samsung Galaxy S4	485 %	Samsung Galaxy S III	443 %	Samsung/Galaxy Note II	869 %	Samsung/Galaxy Note	673 %
Samsung Galaxy S II	483 %	Apple iPhone 5c	443 %	Samsung/Galaxy Tab 2 7.0	362 %	Apple iPhone 5s	673 %
100% = Apple iPhone 3G				100% = Apple iPhone 3G			

Early adopters

Educational establishments were among the first to wake up to the advantages of wireless networking, not just for administration, but also in the classroom. After all, Cat5 and Cat6 cabling is expensive and inflexible once installed. As a result, wireless vendors such as Cisco, Meraki, Meru, Ruckus Wireless, Xirrus, *et al* have done very well. Now it's time for *Wireless Classrooms 2.0*.

Those initial networks paved the way for schools and colleges to consider moving to a BYOD policy for both staff and students. This is seen as a way to relieve budget pressures, expand 'computer literacy', replace textbooks, supplement course content, speed up admin, and generally prepare students for life outside the cloister. But all this raises a lot of other issues.

Jisc management operations expert Jason Curtis says mobile devices in classrooms are like rabbits: "They're cute and they are multiplying at an enormous rate. People have underestimated what's going on."

Noel Davis, a technology expert with Jisc, adds that keeping up with the rate of change in the technology has been a big problem. Previous efforts have variously brought in PCs, PDAs, laptops, netbooks and mobile phones. But tablet-based computing has the potential to revolutionise how students are taught – indeed, how they

learn. He notes it is not yet four years since Apple introduced the *iPad* and really brought mobility to the education market. Already, we are on the fifth generation of tablets with others such as Microsoft's *Surface* just starting to gain traction.

While Pythagoras' Theorem hasn't changed in 2,500 years, the rate at which hardware becomes obsolete/uncool tracks Moore's Law. Matching content to the delivery medium to transfer the knowledge more effectively is still an art. Davis says the plethora of screens and operating systems means content developers should now be working in HTML5 just to get around the issues associated with displaying their content properly.

He also notes that most learning establishments are unprepared for the hit on their networks in terms of bandwidth, access management and security. Half a dozen students latching onto a traditional 2.4GHz Wi-Fi hotspot are enough to kill it. 5GHz APs should therefore now be the minimum, according to Davis. Boston's Griffiths adds that schools are now starting to specify the 802.11ac standard, ratified only in January 2014, which will provide 1Gbps links in the classroom.

That's not all. A recent study by JDSU (which is best known for its test and measurement gear but is now also a networking location expert since its acquisition of Arieso) showed that users of Apple devices are the most greedy "data hogs" (see table left). The survey found that *iPhone 5* users download seven times as much data as its benchmark *iPhone 3G* users do. And *iPad 4* users are close behind at 6.5 times. Samsung users uploaded more stuff. Other researchers have found most classroom traffic is download, which suggests interactivity or at least peer-to-peer learning is still latent.

Few education authorities factored any of this into their calculations when they

specified their earlier Wi-Fi networks. And the indications are that few do today. But the impact on bandwidth is huge. Speaking about the wider market, JDSU CTO Michael Flanagan says the fact that 0.1 per cent of 4G subscribers consume half of the data may prompt operators to identify these extreme users. "This in turn may make it easier to deploy small cell and Wi-Fi access points to ease network congestion. However, the accuracy of these placements should be of paramount importance to operators due to the limited range of the small cells and Wi-Fi."

BYOD hits the schools

Renfrewshire Council has hired local network integrator Boston Networks to design and install the infrastructure for a council-wide wireless LAN rollout at 63 schools. This follows a similar Boston project for hundreds of schools in Dumfries and Galloway.

The network will extend the council's existing LAN across its schools estate to enhance the virtual working environment and provide mobility. Users will start with council-provided devices to access resources, but the infrastructure will also enable BYOD and public access, if needed.

Boston designed the communication infrastructure and structured cabling networks to connect more than 550 wireless access points throughout every school campus within the Renfrewshire estate. In addition to deploying Brand-Rex Cat6 structured cabling, Boston also upgraded and installed more than 150 network cabinets to accommodate PoE

Backhaul

Since classrooms will generate a lot more (bursty) traffic than average hotspots, schools and colleges may offer to backhaul 4G traffic over their Wi-Fi and fibre connections. However, there are regulatory barriers to the use of public assets for private purposes and profit. Nonetheless, backhaul remains an issue alongside bandwidth. Brian Durrant, CEO of the London Grid for Learning Trust (LGfL), took early steps to ensure that the 2,500 schools he serves are adequately

and enhance the wireless LAN.

Elsewhere, London's Giffard Park Primary School faced an influx of Wi-Fi-enabled devices that now consists of 219 notebooks, 20 laptops, and 14 tablets. It is also planning to migrate pupils from notebooks to iPads over the coming year, so needed to future-proof its wireless network.

Natalie Goodman, the school's business manager, said the existing wireless network had been in place for about five years but didn't provide complete coverage. "We regularly experienced coverage blackspots and it wasn't fast enough to deliver learning in a seamless way."

As a result, Giffard Park now has a network based on Xirrus' arrays which support two to 16 radios. This will enable it to upgrade and scale in line with changing user demands. The wireless network will facilitate the delivery of digital learning within every subject, with mobile devices provided for all Key Stage 2 pupils.

provisioned. "The rollout of LGfL 2.0 was completed at the end of 2012 and 2,500 London schools are benefiting from a fast, reliable service at lower overall costs. Schools are served with an uncontended, symmetrical service at bandwidths from 10Mbps to 1Gb, depending on their size and budgets; 10Gbps would be available if required and financed."

The London Grid is said to be the largest educational metropolitan network in the world. It was deployed by Virgin Media Business (VMB) and runs Ethernet over fibre using Juniper's Junos network operating system to connect primary and secondary schools in the Greater London area. When the VMB deal was signed in June 2010, the Grid expected to save £131m per year.

According to Durrant, schools need to exercise caution in opening their local networks to devices brought in by pupils and staff. "BYOD can be very attractive from a curriculum perspective, allowing pupils to have a greater degree of ownership of their own learning. It extends learning activity beyond lesson time and the school gate."

"On the downside, allowing such devices onto the school network has security and safeguarding implications. Schools which consider miscreant behaviour a possibility will usually [for example] disable USB ports on school-owned devices to prevent inappropriate content or tools [proxy anonymiser technologies, for instance] being used. Obviously, allowing users' own devices to connect to the school LAN effectively re-opens the way."

Durrant recommends that any school that considers allowing, for example Wi-Fi access, should first consider creating a separate and secure VLAN. That way, BYOD and authorised traffic is kept separate.



"BYOD can be very attractive from a curriculum perspective, allowing pupils to have a greater degree of ownership of their own learning. It extends learning activity beyond lesson time and the school gate."

Brian Durrant,
CEO,
London Grid for Learning

While congestion in the classroom wireless network is likely to remain an issue for the time being, more bandwidth may arrive in the form of access via the LTE mobile networks now being built. O2's licence requires it to provide indoor



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coverage to 98 per cent of the UK, and EE and Vodafone are likely to follow suit. This means students could use the mobile network either as a primary or alternative way to access the local Wi-Fi system. There are already anecdotal reports of students using their own data plans rather than the classroom network to go online.

While Jisc's Davis believes LTE will be a "big help", Durrant is more nuanced: "LTE, where available, is a service to the device from an external provider in the same manner as 3G or HSPA. This service would usually be unfiltered, unmonitored and outside of any control exercised by the school. BYOD, for which the user has an external (usually unfiltered) internet accessing account, is a matter for local school policy, much as permitting or proscribing mobile phones in the classroom. Hence, LTE in this context is unlikely to supersede Wi-Fi, with which (given appropriate configuration) a school can at least exercise a degree of access control."

LAN lockdown

Locking down the LAN may be counter-productive. So too is restricting the choice of device. Several sources say that while centralised purchasing can help to lower cost per device, learners are more likely to become expert users of the device of their choice, and therefore more likely to use it to access content in the classroom.

Ennio Carboni, president and GM for network and IT operations management at Ipswitch, says "COPE" (company-owned products and equipment) policy control probably won't work in the long term. Instead, he believes a hybrid solution that gives users the choices they want but protects the corporate assets (data and content) is needed.

Carboni points out that the big US universities have been extremely proactive in this field. "Every September, thousands of new (and increasingly digital native) students arrive with their mobile devices, and the first thing they want is to get connected. As a result, universities have

become adept at provisioning user accounts, setting up authentication processes and using network policy management tools to control bandwidth, access to content, and other permissions.

Jisc's Curtis agrees, and says that most people will behave themselves online provided the policies are sensible and fair and the reasons properly explained. Davis adds that educators need to stop focusing on the end point device: "Service delivery is the thing they need to think about. Whether it's *Google Docs*, *Microsoft Office 365* or virtual desktop infrastructure, they have to focus on service delivery and content types. HTML5 still has some problems but it's the best solution there is at the moment. They really need to get their skills up, and there needs to be better tools to produce content more easily for cross-platform delivery." ■

BYOD – not the death of the textbook

Textbook publishers the world over need to change their business model in the face of BYOD to the classroom.

According to the Publishers' Association, the sale of school textbooks rose four per cent in 2012 to £290m, thanks largely to a 51 per cent rise in the sale of digital products to £13m. The proportion of digital to paper sales has stayed constant at around four per cent for several years. But is this due to publishers' reluctance to create digital content, schools' capacity to absorb and apply it, or something else, like copyright and digital rights management?

The answer is not clear. But the industry experts we spoke to were unanimous that future course material needs to be

produced using HTML5. This will avoid the problems associated with publishing content to devices with different operating systems, browsers and screen formats.

The pan-European 2010 Motill study into mobile learning (mLearning) found that it offered an excellent way of socialising education, helping small groups to integrate with society. It also broadens the learning field as students invariably read wider and deeper into their subjects.

However, it concluded national accreditation of e-learning courses remain problematic, curricula need to be re-organised to accommodate mobile learning, and that open content systems are viable but need more work. Motill also noted that new ways to finance mLearning are required because educational institutions have found it hard to integrate it into existing admin and educational processes.

Enabling the Cloud with High-speed Data Transfer

Companies today are struggling to manage increasing volumes of structured and unstructured data created by everything from sensors to social media. They must accelerate the velocity of sending and receiving this data to more quickly uncover valuable business insights, bring products to market faster and improve employee productivity. This becomes even more critical with the growing adoption of cloud computing, where enterprises need a more effective way to transport extremely large files to and from cloud platforms.

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"HTML5 still has some problems but it's the best solution there is at the moment. They really need to get their skills up, and there needs to be better tools to produce content more easily for cross-platform delivery"

Jason Curtis,
management operations expert,
Jisc





Investing in testing

According to industry experts such as Livingston, a combination of good planning and effective test procedures can dramatically improve the quality of network operation.

With networks getting faster and data volumes growing, managing, monitoring and optimising your LAN has never been more vital. RAHIEL NASIR looks at the options.

“Network monitoring is dead” proclaims cPacket, the US-based network intelligence specialist. In a statement issued last October, it said that today’s legacy monitoring solutions cannot address the demands of modern networks because they were not conceived to handle the problems that arise in large-scale data centres and high-speed networks. What’s needed are solutions that are more agile and able to deliver real-time visibility, while keeping up with the increasing complexity, volume and speed of network traffic in virtualised and cloud application delivery environments.

“Traditional monitoring architecture is like the cashier in a struggling legacy retailer,” explains Rony Kay, cPacket founder and CEO. “At legacy retail stores, during busy times the centralised cashier is a bottleneck that causes customers to stand aimlessly and wait. However in an Apple store [for example], the approach is more agile and distributed. Every employee at the store can help you with your needs and take

your payment from anywhere on the floor, instantly. This distributed model delivers higher customer satisfaction and enables more efficient utilisation of space and time.”

In simple terms, cPacket says that legacy architecture relies on aggregating all the traffic and analysing it “after-the-fact” in a centralised location. But increasing volume and speed of network traffic makes this legacy approach a “bottleneck by design”. It implies lower operational agility, restricted visibility, and slow response time to situations that require corrective actions, as the operation teams do not have proactive situational awareness and real-time access to true facts.

In contrast, Kay claims that ‘pervasive network intelligence’ – which is physically distributed across the network and virtually centralised – allows the “heavy lifting” of inspecting every packet and every flow in real-time. “A novel hardware-software architecture can be deployed to deliver pervasive real-time intelligence. It should combine real-time hardware inspection of every bit in every packet and every flow across the entire network environment, with radically simplified software to allow instant access to relevant information from any web browser. It’s time for monitoring solutions to catch up with the rest of the networking and data centre world.”

The need for speed

That all sounds like a serious wake-up call for the industry. But away from the data centre, do issues such as virtualisation, cloud, unified communications, BYOD, etc, have an impact on the types of functionality vendors need to build into their LAN monitoring tools?

“They could, but not necessarily,” says Reinier Treur, marketing director of test equipment supplier Livingston. “We see a clear shift in where testing is focused. There is now much more emphasis placed upon testing the telecommunication connections to buildings, because this has become a major bottleneck in speed and needs to be taken care of.”

It’s those bottlenecks again. WildPackets, which specialises in network and application performance analysis solutions, reckons it may have the answer in the shape of its *Omniplicances*. It claims these offer the “most powerful, accurate and affordable” solutions available for monitoring and troubleshooting high-speed networks.

The company says that as networks get faster, traffic volume rises but IT organisations are seeing less because traditional network monitoring and security tools cannot keep up with 10G and 40G data rates. In its recent *State of Faster Networks* survey, WildPackets found that 43 per cent of network engineers and IT directors reported limited or no network visibility as their biggest challenge. And while 85 per cent thought network forensics were essential, only 31 per cent implemented such a solution on their company’s networks.

On top of all that, a study by TRAC Research reveals that 59 per cent of IT leaders are concerned about the number of dropped packets, and a little over half are worried about the reliability of network data captured by current analysis solutions.

WildPackets says its *Omniplicances* deals with these challenges by providing IT organisations with the same comprehensive network visibility and control they have on traditional LANs and 1G networks, on 10G and 40G networks. It adds that the three models in the range are designed for rapid deployment, and offer real-time network analytics and monitoring, as well as high-speed forensics for post-incident analysis.

The *CX* is the entry-level model and is aimed at SMEs and remote offices of larger enterprises. The *MX* is said to be a “work-horse” for data centres and constantly monitors network health with its “unique” traffic capture, recording and deep packet inspection technology. The high performance *TL* offers continuous network traffic capture, allowing for analysis of historical network traffic and quick data retrieval for troubleshooting. The vendor says that by running its newly optimised *OmniEngine* software, the *TL* achieves packet capture at 20Gbps.



WildPackets claims its *Omniplicances* offer the “most powerful, accurate and affordable” solutions available for monitoring and troubleshooting high-speed networks. From top to bottom: the *TL*, *MX* and *CX*.

Finding the bandwidth hogs

In response to its own call for solutions that need to be more agile, cPacket has expanded its *cVu* range of traffic monitoring switches which now include new entry-level models for branch offices and remote sites. They include, for example, the *cVu-16G* which features 16 interfaces in a 1U form factor, built-in LCD, and redundant power supply.

The switch is said to combine cPacket’s “unique” features of granular monitoring, performance visualisation, and proactive alerts, with the functionality of common packet brokering and matrix forwarding. It also offers: real-time pattern search (grep) by inspecting every bit in every packet in every flow; dynamic flow balancing; tunnelled meshing; user-defined triggers; automatic microburst detection; and nanosecond time stamping.

cPacket says the new switches connect seamlessly to *SPIFEE*, its centralised dashboard. This unifies access to all *cVu* devices in the entire corporate network, regardless of their physical locations. The company adds that *SPIFEE* offers access to visual KPIs, proactive alerts of undesired behaviours like spikes, and enables users to search for specific traffic profiles according to any combination of header fields and payload patterns.

“Our new entry-level models deliver unprecedented network visibility to teams that support branch offices and remote sites,” says Kay. “While common packet brokering functionality is also available from other companies, no other solution delivers the unique benefits of integrated performance visualisation, proactive alerts, and interactive pattern search at line rate across a distributed infrastructure.”

Ixia may take issue with cPacket here. The network test and monitoring specialist has also unveiled two new network packet brokers as part of its *Net Tool Optimiser (NTO)* platform to provide enterprise visibility for remote and branch offices.

“IT teams use an array of tools to proactively monitor networks and applications,” says the firm. “However, obtaining the complete data needed for in-depth, network-wide analysis is a growing challenge due to increasing network speeds, sizes and the dynamic nature of IP networks. *NTO* [devices] intelligently connect the network with monitoring tools to aggregate, filter, load



“Traditional monitoring architecture is like the cashier in a struggling legacy retailer. During busy times the centralised cashier is a bottleneck that causes customers to stand aimlessly and wait.”

Rony Kay,
Founder & CEO,
cPacket

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balance and de-duplicate network traffic to make their existing tools more valuable.”

Ixia says the 2112 and 2113 network monitoring switches combine the essential core capabilities of its enterprise-class NTO platform with the port capacity and entry-level price point needed for smaller network deployments. The new switches are said to provide: a cost-effective monitoring solution for distributed deployments; pre-configured and fully activated ports to make deployment fast and easy; and the same OS, features and UI as Ixia's other NTO products, giving customers the ability to “learn once and deploy everywhere”.

In addition, the vendor claims the 2113 is the only full featured network monitoring switch in its class with packet filtering, load balancing, packet de-duplication and trimming, advanced header stripping and burst protection.

In December, IT management software specialist SolarWinds unveiled an enhanced version of *NetFlow Traffic Analyser (NTA)*, its real-time network utilisation and bandwidth monitoring solution. It claims the latest version has the ability to process 50,000 flows per second or more, making it 400 per cent faster than its predecessor.

NTA is designed to analyse Cisco *NetFlow*, Juniper *J-Flow*, *IPFIX*, *sFlow*, Huawei *NetStream*, and other flow data. SolarWinds say it enables users to quickly capture finely granular data from continuous streams of traffic and convert those raw numbers into charts that quantify exactly how the corporate network is being used, by whom, and for what purpose. It highlights the IP addresses of “bandwidth hogs”, and allows administrators to restrict undesirable or hazardous practices.

“IT pros can see exactly when an issue occurred which allows them to make a fast and accurate diagnosis of network traffic issues such as bandwidth spikes or micro-bursts,” says the firm. “They can then view the data, up-to-the-minute, on interactive charts and generate reports on historical traffic usage for any applications, endpoints, or domains over a specified time interval.”

Getting a handle on power

Livingston's Treur says that as networks become more complex and faster, the industry will witness the introduction of more specific network testing instruments. One element of the network that has become increasingly important to manage, monitor and optimise is power usage.

For instance, Livingston says modern data centres need a more comprehensive

and in-depth understanding of their deployed hardware's overall power efficiency, so that opex is curbed and compliance with increasingly stringent environmental regulations can be attained.

Earlier this year, the firm added Dent Instruments' *ELITEpro XC* to its range, claiming it offers a complete solution for accurately monitoring electric energy usage and recording key performance metrics. It says the *XC* is capable of logging, storing and analysing power consumption data derived from voltage and current inputs with typical accuracy levels of <0.2 per cent.

Suitable for both single and three-phase systems, Livingston says the quad-channel analysis tool can deal with currents up to 6,000A. A waveform sampling frequency of 12kHz is supported, allowing real-time display of both voltage and current waveforms as well as harmonics. User-selectable recording intervals can be set as short as every one second, while a 16MB non-volatile memory is said to provide months of recording time. Connectivity is via USB and standard Ethernet ports, and an optional Wi-Fi function allows remote data collection over 2.4GHz wireless networks.

Remote power monitoring is also the thinking behind two new services from UPS experts Socomec and Uninterrupted Power Supplies Ltd (UPSL).

Socomec says its *Link-UPS* provides a permanent connection between the internal monitoring system of any installed Socomec UPS and an authorised local service centre. If the UPS' operating parameters fall outside the permitted range, the system will identify the anomaly and automatically notify the nearest centre. A specialist Socomec engineer will then carry out a diagnostic check by remotely accessing the parameter dashboard, and conduct a root cause analysis for corrective action.

To ensure that *Link-UPS* operates continuously, Socomec says the connection between the UPS equipment and its service centre uses two autonomous and redundant channels; normal operation is via a secure LAN/WAN connection, but the system will automatically failover to GPRS if needed.

Link-UPS also provides predictive analysis by recording and processing the UPS' monitoring data. Andrew Wilkinson,



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“There is now much more emphasis placed upon testing the telecommunication connections to buildings, because this has become a major bottleneck in speed and needs to be taken care of.”

Reinier Treur,
Marketing director,
Livingston



RF Code and Server Technology's integrated system provides a consolidated view of power and environmental data.

Socomec's regional MD, says that by combining this with constant monitoring, users can build a truly in-depth knowledge base of the equipment and the installation: "Via *Link-UPS* we can detect performance issues and prevent malfunction before the situation becomes critical. This holistic approach to maintenance has a positive impact in terms of the management of operating expenditure and virtually eliminates downtime costs."

UPSL claims its *PowerREPORTER* service is like having a "virtual power engineer on your site 24/7". Designed specifically for continuous monitoring and management of UPS devices, it says the service ensures that a business' critical load and mission-critical systems are protected, even during unmanned hours.

Like *Link-UPS*, *PowerREPORTER* is also in constant communication with a user's installed UPS system and automatically detects all error and alarm messages which it relays to engineers at a service centre for remedial action (via the user's LAN). But unlike Socomec, UPSL says its service can work with any UPS that has an internal monitoring system that can supply the required data.

RF Code provides IT asset management and environmental and power monitoring using unique active RFID-based solutions. It has teamed up with Server Technology to provide an integrated system for monitoring and managing data centre power usage. The new system combines RF Code's wire-free *Sensor Manager* with Server Technology's *Sentry Power Manager* (SPM) power monitoring platform. RF Code says data gathered from its sensors flows into SPM software via an APM to provide a consolidated view of power and environmental data. The information gathered includes power utilisation (which RF Code's sensor collects from a Server Technology intelligent PDU); temperature, humidity, etc; door open/close for greater security; and more.

Emerson Network Power (ENP) has added two new modules to its *Trellis* data centre infrastructure management (DCIM) platform. *Power System Manager* and *Mobile Suite* are said to provide a "complete visualisation" of the power system, including utilisation and dependencies, as well as secure, real-time mobile access.

Steve Hassell, president of ENP's data centre solutions business, says: "These new modules take the most comprehensive DCIM solution to the next level by giving the user greater insight for managing their assets on the go or on the data centre floor, allowing them to reduce downtime risks, improve operational efficiency, and cut costs."

According to the firm, *Trellis Power System Manager* introduces the unique ability to view the complete power chain from the grid to the rack via a one-line diagram. It says that when armed with knowledge of their current capacity and the ability to predict future needs, users can plan for capacity additions more accurately.

"When users know exactly which racks or devices will be affected by any power system failure or by scheduled maintenance, they can identify and address potential issues before they cause an outage. Additionally,

the module lets users better plan for power maintenance and perform risk assessments." Furthermore, ENP says that *Power System Manager* enables a global view of power across the data centre and down to a single device. "This insight enables users to gain information to manage the power system more efficiently, resulting in reduced risk of downtime and – as typically happens when efficiency is improved – lower costs."

Trellis Mobile Suite is an iOS app that allows users to manage data centre assets from anywhere and at anytime. Because the app is linked to the company's *Trellis DCIM* platform in real-time, ENP says users can also take it to the data centre floor where they can find, add, move and remove racks and devices faster; carry out audits easily; and configure the database without returning to a computer.

The suite is also said to feature unique and innovative image recognition technology and barcode scanning capabilities to enable real-time updates right on the data centre floor. As a result, Emerson reckons users can save time tracking assets and updating their system while reducing the risk of human error that comes with entering data.

The bottom line

According to Livingston's Treur, a combination of good network planning and effective test procedures can improve the quality of network operation dramatically.

But he goes on to point out that network managers investing in test tools often end up having to make compromises because the equipment they acquire has to be used over a broad cross-section of different jobs.

This could be network performance testing, delay measurement, cable testing, or troubleshooting. Sadly, says Treur, no single device offers the perfect choice. But he does offer some hope and says that net managers can avoid having to make compromises and big investments by renting, rather than purchasing, the best and latest instrumentation for any particular job.

"Very often, when we speak with network managers, they ask if we could help them with the disposal of their test tools. Sometimes, tools bought just six months earlier can already be out of use due to network changes being applied. As your network evolves quickly, our recommendation is to always keep your instrumentation pool as flexible as possible. Why invest in test tools with an operational life of three to four years if your network planning horizon is a maximum of just one year?" ■



Lab Testing Summary Report

January 2014
Report 140109

Product Category:
Network Analysis and Recorder Appliance

Vendor Tested:


Product Tested:
Omnipliance TL



Miercom Report Finds WildPackets Omnipliance TL Leads Industry in Performance Capabilities

Series of independent tests confirm Omnipliance TL offers the fastest, continuous network recording and analysis solution on the market

Miercom, an independent product test center and consultancy for the networking industry, has awarded WildPackets Omnipliance TL network analysis and recorder appliance "Performance Verified" based on Miercom's independent testing. The testing results confirm Omnipliance TL is the fastest, continuous network capture and analysis solution available on the market.

"The capture-to-disk performance of WildPackets Omnipliance TL with a 10G and a 40G OmniAdapter proved best overall effectiveness by a network analysis appliance observed to date in hands-on testing," said Robert Smithers, CEO of Miercom. "With a capture-to-disk rate of 25.33 Gbps and zero packet loss with 40G networks, the Omnipliance TL's superior performance is well-suited for use in network forensic analysis. The intuitive visual format of the Omnipliance TL displays crucial network statistics with no significant impact on the capture-to-disk rate."

Omnipliance TL network analysis and recorder was evaluated by Miercom for performance and functionality of its forensic capture and real-time monitoring capabilities. Miercom's testing showed that Omnipliance TL records network traffic at a sustained rate of up to 25 Gbps with zero packet loss on 40G networks and can deliver full line-rate packet capture on 10G networks. Miercom also confirmed the intuitive visual format of the Omnipliance TL displays crucial network and media statistics in real time with no impact on the capture-to-disk rate.

The Miercom report confirms that WildPackets is the first and only vendor to capture 40G network traffic without dropping packets, which is a significant development for network forensics capabilities. Network forensics is the only practical analysis solution for 10G and 40G networks because traffic is flying by too quickly for IT engineers to monitor and analyze in detail through real-time dashboards. Analysis of packet-level network traffic enables organizations to detect technical and operational issues and respond with quick troubleshooting when problems arise. WildPackets' zero-packet dropped solution is the only viable and cost-effective appliance for reliable network forensics.

"Omnipliance TL offers organizations the most comprehensive and accurate network recording for continuous traffic capture at 10G and 40G data rates," said Mandana Javaheri, product management at WildPackets. "Miercom's testing results confirm Omnipliance TL's high-achieving performance capabilities and validate its position as the most powerful solution available on the market."

According to the final report published by Miercom, "We were impressed with the performance of the Omnipliance TL. It achieved line-rate capture-to-disk when equipped with a two-port 10G OmniAdapter. In addition, the appliance with the 40G card verified that capture-to-disk rate was not impacted significantly with capture statistics and analysis functionality enabled. The Omnipliance TL is well-suited for its designed role in 10G and 40G networks segments, such as data centers and network operations centers as well as on WAN links."

www.wildpackets.com

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Some of the latest routers and access points to help get enterprises and employees connected without wires.

DrayTek says its latest *Vigor 2860* router/firewall is compatible with all mainstream broadband line types including ADSL, ADSL2, VDSL (*BT Infinity*), cable modems and 3G/4G modems. Up to two 3G/4G modems can be connected to provide additional redundancy.

The router also support simultaneous dual-band wireless standards allowing modern laptops, phones and tablets to make use of the less-congested 5GHz band, whilst still providing 2.4GHz access to other devices at the same time.

DrayTek says that all of the WAN connectivity can be used simultaneously to increase the user's overall bandwidth (load balancing) or set to failover mode so that a secondary internet connection kicks in if a primary one fails (for example VDSL to 3G).

Other functions include support for IPv6, VLANs, wireless guest access, and QoS priority assurance. VPN access is

provided for up to 32 remote offices or teleworkers, allowing them to access remote systems via a secure encrypted tunnel. The routers can also host teleworkers through SSL VPN connections, enabling remote access from a browser on any guest PC.

Draytek adds that a six-port GbE switch on the LAN side provides high-speed connectivity for servers, other local PCs, or for uplink to a larger Ethernet switch. It also says that "comprehensive" security features include content filtering, web application controls, and a firewall that offers "huge flexibility" as well as an object based management system.



Machine-to-machine (M2M) specialist Eseye has launched the *HERA600* series, a range of high-performance integrated service routers. According to the firm, the new line-up of dual SIM, 3G and Wi-Fi M2M-grade routers offer the "perfect"

cellular data connectivity solution for sensor technology. It says the robust Wi-Fi and 3G routers provide secure and reliable connectivity to multiple devices, along with full network redundancy thanks to the dual SIM failover solution.

Eseye reckons the *HERA600* will allow M2M users to manage their operations "everywhere without going anywhere". It features an optional embedded *AnyNet* SIM which selects the best available network, and allows management using TR.069, Telnet, SSH, CLI, HTTP, HTTPS, or over-the-air via USSD/SMS/IP.

It adds that four devices can be connected to the Ethernet ports and a further 64 wirelessly, thus offering greater freedom to users wanting to connect multiple mobile devices with low data requirements. Eseye



claims the routers are ideal for industries that are reliant on sensor technology, such as healthcare and security, where real-time reporting and reliable connectivity are crucial.

Linksys has released two commercial-grade VPN routers, the *LRT214* and the *LRT224*. Both models allow OpenVPN clients running on employees' laptops, smartphones and tablets to connect to the corporate network using two-factor authentication.

The devices support URL filtering and access rules, enabling administrators to further regulate traffic within the business network based on the services (i.e. TCP/UDP ports) and source/destination IP addresses. Rate control enables them to limit upstream and downstream bandwidth per service and IP, while a priority scheme allows services to be mapped according to three levels.

The routers also support 802.1q (VLAN tagging) to provide separation between resources in different SSIDs/VLANs. Linksys says that with inter-VLAN routing, each model allows specified traffic to traverse between

VLANs. Five tagged VLANs and VLAN trunking can be used to connect to APs (with multiple SSIDs) and additional smart or managed switches.

Both routers include an integrated firewall with stateful packet inspection, DoS prevention, up to 50 schedule-based access rules, and web filtering.

The *LRT224* adds dual WAN gigabit connectivity to support failover. Linksys says it can aggregate the bandwidths of both WAN connections to achieve a higher internet bandwidth than a single connection.



Solwise continues to boost its range of Wi-Fi hardware with the introduction of its first 4G router as well as a new discreet access point from Pheenet.

The firm says its *4G-LTE-S4* is a full 4G router that features 150Mbps 802.11n Wi-Fi and WAN connectivity. It includes a 4G modem with a standard size SIM slot – users simply insert their 4G SIM card, configure the unit with the login details for their mobile data account, and they're then ready to share their 4G data connectivity. The device also supports 3G data SIM cards.

The *S4* has a built-in Wi-Fi antenna as well as two connectors for 4G to allow users to attach an external antenna which may improve the LTE signal in their premises. The router is compatible with UK standard 800MHz, 1800MHz,

and 2600MHz bands, and is claimed to offer 4G download/upload speeds of 100Mbps/50Mbps, and 3G download/uploads of 42.2Mbps (DC-HSPA+/-) 5.76Mbps.

Solwise says the Pheenet *WAP-3150NP* plug-in AP (pictured) is ideal for use in a hotel to give guests wired and wireless internet access. It offers 150Mbps 802.11n wireless connectivity powered by 802.3af PoE. Two 2 RJ45 ports are included: one allowing wired access for guests, and

another for PoE. The AP also has an RJ11 passthrough port on its rear that can be used for a telephone (an adapter will be needed if using a phone with a BT standard plug).

The *WAP-3150NP* can be centrally managed via a web browser, an SNMP MIB browser, or by using the optional Pheenet *Hotspot Controller*.



The *UAG4100 Unified Access Gateway (UAG)* from **ZyXEL Communications** aims to deliver best-in-class connectivity services in the hospitality industry.

The firm says that while many people now carry more than one mobile device with them, most of the existing networking infrastructures in hospitality environments cannot cope, resulting in intermittent connection and customer complaints.

ZyXEL claims the *UAG4100* supports dual radio frequencies, 2.4GHz and 5GHz, to serve twice the number of users than legacy Wi-Fi gateways. It automatically switches to 5GHz when the 2.4GHz band is fully occupied, and "digests" traffic flow to avoid unstable data transmission due to the shortage of bandwidth.

The gateway also adopts a management platform that is said to handle up to 300 wired or wireless users simultaneously while prioritising the bandwidth usage of each account. It takes advantage of embedded billing

functions, enabling premise owners to generate optimal access privileges to customers. Billing features include web portal authentication, user-agreement login, and RADIUS server authentication.

In addition, it supports an SMS ticketing feature that passes the user name and password required for logging into the mobile devices owned by a particular user. Subscribers can conveniently keep the information on their devices while preventing the risk of losing printed ticket.

ZyXEL says the *UAG4100* helps hospitality businesses confront regulatory compliance challenges by recording user account information, MAC addresses, source and destination IPs, etc, for government auditing if requested.



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Government to help unlock Big Data potential

Universities and Science Minister, David Willetts, has unveiled £73m of new funding to help the public and academics unlock the potential of Big Data.

It is estimated that the Big Data market will benefit the UK economy by £216bn and create 58,000 new jobs before 2017. Speaking at a GovNet conference in early February, Willetts said the new funding will help the UK grasp the opportunities and get ahead in the global race: "Big Data is one of the eight great technologies of the future and a priority for government. It has the potential to transform public and private sector organisations, drive research and development, increase productivity and innovation, and enable market-changing products and services."

Fifty-five projects will receive the government funding for research in a number of diverse areas including developing a better understanding of human disease, tackling obesity and solving transport problems. Some of the beneficiaries include the Medical Research Council (MRC) and the Economic and Social Research Council (ESRC).

MRC will invest £50m in bioinformatics which uses many areas of computer science, statistics, mathematics and engineering to process biological data.

ESRC will invest £14m in four new research centres at Essex, Glasgow, UCL and Leeds Universities. The centres will make data from private sector organisations and local government accessible to researchers investigating anything from transport to obesity. At present, the data is being collected by these organisations but is not being used for research purposes.

IT employers urged to act ahead of legislation

Accountancy and payroll firm Danbro is urging self-employed contractors and recruiters operating in IT to prepare for the impact of the Government's draft legislation to tackle 'false self-employment'.

Danbro says that at present, intermediaries are used by companies to save paying National Insurance and other employment-related costs such as holiday and sick pay, redundancy and pension contributions, and deducting PAYE tax.

The proposed change to legislation is designed to ensure that people engaged by or through an intermediary will receive the same benefits as someone who is contracted directly by the employer.

Danbro MD Damian Broughton says the impact of the planned changes will create additional admin costs for recruiters. He urges contractors to think about switching to a compliant umbrella scheme or limited company ahead of the changes. According to Broughton, those who do so will not be affected by implementation of the new legislation in any of its proposed forms. He adds that while the structures of such

setups are quite simply the "best way" to protect yourself, they will also help contractors to maximise take home pay.

NEW COURSES

Various courses – Society for Broadband Professionals Communications Society
The Society for Broadband Professionals (SCTE) has announced three new courses: *Network Architecture and Design*; *Introduction to Broadband*; and *Fibre Optic Transmission for Technicians*.

The society says engineers and students helped to formulate the content and presentation of the new programmes which have been designed to combine traditional good practice with up-to-date information on the latest industry requirements.

The first four courses (*Installation Technician*; *Service Technician*; *Network*

Technician; and *Network Architecture and Design*) are available in a variety of formats. Upon successful completion, students become accredited SCTE Technicians and are issued with SCTE certification.

Introduction to Broadband is a half day course aimed at non-technical employees in broadband companies, and covers the basic technical principles employed by broadband operators. Further information: www.thescte.eu/index.php/professional-development

Virtual Classrooms – SolarWinds
IT management software specialist SolarWinds has launched *SolarWinds Virtual Classrooms* – a free virtual learning experience for eligible IT professionals that have purchased the vendor's product maintenance.

In virtual classrooms, the company

says its product experts will host live, interactive training sessions designed to help IT pros harness the power of their SolarWinds deployments.

"Unlike the 'Big Four' IT management vendors, we've never required professional services or training with our products," says Chris LaPoint, VP of product management for SolarWinds. "By offering this alternative to expensive professional services included with our standard maintenance, we're answering the need our customers have expressed for comprehensive, relevant IT management training."

Each session will be scheduled at varying times to assist customers in multiple time zones. It will include lecture and lab segments in a small, virtual classroom setting, allowing IT pros to apply their training within their own environments. <http://tinyurl.com/pwbghta>



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Danbro MD Damian Broughton says the impact of the planned changes will create additional administrative costs for recruiters.

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