

networking

FIXED & WIRELESS NETWORKS FOR ENTERPRISE USERS

Out of this world

Wireless devices used to monitor astronauts on space station
News, p2



Eye on the ball

Network monitoring can save businesses from nasty own goals
Real World Networks, pp8-9



Mother board to board room

Do you need to be more business savvy to remain relevant in 2017 and beyond?
Feature, pp10-13



Power distribution

How some of the latest PDUs could save you time and money.
Off-the-shelf, p14



Separation for Openreach and BT following Ofcom intervention

by Rahiel Nasir

Ofcom has ordered BT and Openreach to legally split. The regulator's decision, which was announced at the end of November, follows BT's failure to offer voluntary proposals that addressed its competition concerns.

According to Ofcom, creating a more independent Openreach – which works in the interest of all providers, not just BT – is an important part of achieving its plans to improve broadband and telephone services across the country. In November's Autumn Statement, the Government unveiled a new National Productivity Investment Fund that includes £1bn to support the private sector in rolling out more FTTP broadband by 2020-21, and trialling 5G networks (*see <http://tinyurl.com/h7gafeo>*).

Ofcom said it considered calls for the structural separation of Openreach and BT into two independent companies under different ownership. But it regards this as the "most intrusive" form of regulatory intervention available and said it could also result in greater costs and risks.

Instead, the regulator has ordered a "legal separation" where Openreach becomes a wholly-owned subsidiary of BT. Its proposal requires Openreach to become a distinct company with its own board of mainly non-executive directors and chairperson who are not affiliated to BT. Openreach would be guaranteed greater independence to make decisions on strategic investments, with a duty to treat all of its customers equally.

BT has already appointed Mike McTighe



Time to go their own ways: Ofcom says BT and Openreach will be "legally separated" rather than structurally split – at least for now.

as Openreach's first chairman. He takes up the role from January. McTighe spent eight years on Ofcom's board and has also held

various non-executive roles with C&W, Philips, Motorola and GE.

(continued on page 2)

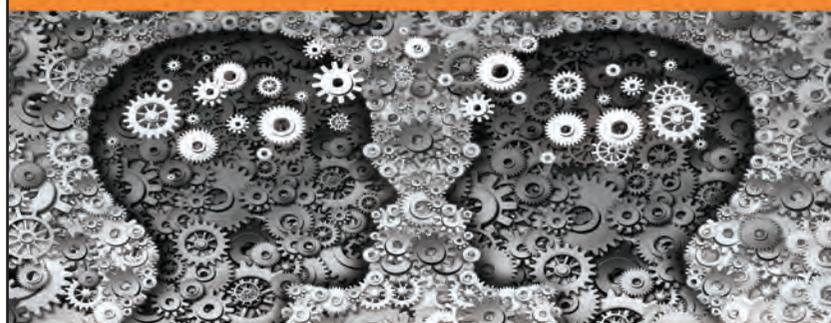
ARROW

Education Services

Get 2017 off to a good start with a free IT training course from one of the World's leading IT training companies, a prize worth up to **£4995**.

t: 0870 251 1000 e: educationteam.ecs.uk@arrow.com

ENTER
HERE!



ARROW
EDUCATION
SERVICES

V | Five Years Out

'Snooper's charter' passed into law

The House of Lords has passed the Investigatory Powers Bill. The legislation allows for the lawful interception of communications, equipment interference and the acquisition and retention of communications data, bulk personal data sets and other information.

Under the Investigatory Powers Act 2016, government agencies can order providers of public and private telecoms services and systems to hack into sold products for surveillance purposes. It also means they have to retain records on their users for up to a year.

As part of the new law, an Investigatory Powers Commissioner and other Judicial Commissioners will also be established. As well as overseeing the legislation, they will make further provision about investigatory powers and national security.

According to Jonathan Sander, VP of product strategy at Lieberman Software, there were two striking aspects to the bill that has now become an act of Parliament.

Firstly, he says that it managed to keep in provisions which, in theory, mean mobile phone and other tech manufacturers would need to build-in a

secret key for government spies. "If there is a magic key, and even if we assume the government itself will not abuse it, we still must assume the bad guys can steal it."

Sander reckons this secret key is likely to be ineffectual, as those who really want protection will simply use apps that weren't built-in by the manufacturers and therefore don't have the back door. "Then, only the uninformed, average user is vulnerable."

Secondly, he says that as with so much other law in cyber security, the Investigatory Powers Act ignores current thinking on what really reveals terrorist cells and operations.

"If the recent success in thwarting plots has shown us anything, it's that the machine learning and data science studying metadata – who called or texted whom but not the contents of these conversations – has the power to out the bad guys."

"The bill will strengthen this programme, but it missed the chance to double or even triple those efforts to yield the data we really need – who exactly the bad guys among us are."

US Rule 41 to comes into effect – News p2

Ofcom orders 'legal separation' of BT and Openreach

(continued from page 1)

Ofcom proposes to publicly scrutinise and monitor Openreach's effectiveness against several measures of success. The most direct will be whether decisions taken by the company's new board are made independently and without undue influence from BT Group. The regulator warned that if its monitoring suggests that legal separation is not delivering sufficient benefits for the wider telecoms industry and its customers, it will return to the question of structural separation and fully breaking up the companies.

In July, Ofcom told BT that it was concerned about competition. It said the telco has the incentive and ability to favour its own retail business when making strategic decisions about new network investments by Openreach. Ofcom asked BT to come up with proposals to address these concerns, but said the firm's suggestions did not go far enough (see *On The Network*, p3, Jul-Aug 2016).

The regulator is now preparing to notify the EC of its plans for the legal separation of Openreach. Throughout this process, Ofcom says it will remain open to BT bridging the gap between its proposal and what is required to address its competition concerns.

Commenting on the regulator's decision, Kester Mann, principle analyst, operators at CCS Insight, said: "No doubt BT's rivals will criticise Ofcom for not being brave enough to push for structural separation. But after many months of campaigning, they should see the regulator's efforts to engage with Brussels as a partial victory.

The move toward legal separation and greater independence will bring important benefits to companies like Sky and TalkTalk in the long-term."

However, Mann also pointed out that this latest announcement represents just the next stage in a long and protracted issue, and he expect further lobbying from all parties and old arguments to be "recycled".

Telecoms expert Professor Mark Skilton at Warwick Business School agrees that questions over how to build the UK's critical national infrastructure have been part of a constant battle. He believes the IoT, superfast broadband, 5G and other types of networks may be better delivered and served with having multiple large-scale companies in a more devolved network.

"This requires a huge investment to build fibre networks, but also a willingness to experiment and develop a full range of services that digitise and enable multiple networks and providers to give not just access but also high-performing data and network speeds. Separating the BT and Openreach monopoly will in my view help this move towards a faster network of providers and hence one that is not driven at the speed of one large operator's priorities."

Skilton adds that this has counter arguments of reliability and avoiding vested interests in focusing on specific cities and regions for preferential treatment. "But with Ofcom and government leadership now so critical in the Brexit era we now find ourselves in, we need to think faster and more nationally and internationally in how we connect to the wider world." ■

US can remotely access and seize computers anywhere in the world

Federal magistrate judges in the US can now issue warrants enabling the country's law enforcement agencies to remotely access data located anywhere in the world.

Rule 41 of the Federal Rules of Criminal Procedure defines, amongst other things, what judges are authorised to do when it comes to providing warrants for searches and seizures to help an investigation. Up until now, it only allowed them to issue warrants for searches in the judicial district where they were located.

An amendment to Rule 41 was approved by the US Supreme Court earlier this year and came into effect on 1 December. For the first time, federal judges are now authorised to issue warrants when technological means and proxy networks, such as Tor or VPNs, obscure the location of a computer. They can issue warrants to remotely access, search, seize or copy data on computers located anywhere in the world.

In addition, a judge can issue a single warrant authorising the search of potentially thousands or millions of devices. Warrants can cover any number of searches in any jurisdiction.

Speaking at an event highlighting cyber crime enforcement held earlier this month in Washington D.C., assistant attorney general Leslie R. Caldwell said: "We regularly encounter crimes like mass hacking through botnets that are carried out in multiple districts at once, all across the country. But in order to respond in a timely, comprehensive manner, the prior version of the rule arguably required authorities to obtain a warrant in each district – up to 94 in all, across nine time zones, ranging from the Virgin Islands to Guam.

"Now, when criminals hide the location

Assistant attorney general Leslie R. Caldwell said law enforcers no longer need to go to different judges to obtain search warrants when criminals hide their computer locations.



of their computers through anonymising technology, we don't have to figure out in which federal district the computers are physically located before we can act to stop criminal activity."

Simon Hansford, CEO of UKCloud, says the US legislation highlights the importance of data sovereignty and of 'buying British' when it comes to cloud services. He points out that the major public cloud providers – including Amazon Web Services, Apple iCloud, Microsoft and Google – are all US-headquartered firms so are subject to US law and therefore Rule 41. "Data stored in their data centres, regardless of whether these facilities are located in the UK or anywhere else in the world, will be subject to the rule. This means that, with the correct warrants in place, US judges will be able to authorise legal access to any data that British citizens and organisations choose to store using these services."

Hansford says UKCloud holds all of its data at facilities in Hampshire and Wiltshire, and is subject only to UK law. "This protects customers – which are exclusively public sector organisations, many of which are storing data about British residents – from the jurisdiction of foreign courts and regulations." ■

Wireless devices help monitor astronaut health on space station

The European Space Agency (ESA) is using wireless devices to monitor the health of astronauts on board the International Space Station (ISS).

The devices are being used as part of the agency's EVERYWEAR programme. This is an ambulatory data collection system that makes use of wearable wireless sensors connected to an ISS iPad which itself is wirelessly synchronised with computers on the ground. Thomas Pesquet is the first ESA astronaut to use the system as part of his six-month mission which began last month.

EVERYWEAR combines input from three wearable sensors, two of which were provided by France-based BodyCap which specialises in miniaturised wireless monitoring devices.

They include the Blood Pulse Wave to record how an astronaut's arteries react to weightlessness. BodyCap describes the device as a piezoelectric flexible sensor based on its patented Upper Skin technology. Developed in partnership with Paris-based engineering school ESIEE, it can detect the blood pulse wave and its changes while exposed to long-term microgravity.

The second device supplied by BodyCap



The Blood Pulse Wave sensor is a tonometer that will be used to record how the astronaut's arteries react to weightlessness. © ESA/NASA

is e-TACT which will be used to study sleep patterns in space. The company says the wearable device was designed to combine activity tracking, skin temperature monitoring and body position detection, with data sent wirelessly in real time or stored on the device for subsequent analysis.

BodyCap plans to make e-TACT commercially available in Europe and the US from February 2017. ■

Save 90% On IT Cooling Costs With EcoCooling

Energy Efficient Cooling

Ventilation and Evaporative Cooling

Use outside air most of the year in the UK | Energy efficient natural cooling | No refrigerants | 350 IT installations worldwide | UK based

Data Centre and IT Cooling

Achieve PUE of <1.1 | ASHRAE compliant | ROI in 1 year | Telecoms | Data Centres | IT and server room | UPS rooms

Control Systems

Remote monitoring | Versatile connection to BMS and fire systems | In-built resilience | Touch screen interface | Energy monitoring

Proven Savings

Energy savings calculator available | Relevant case studies and testimonials | Clients include Monex, BT, Unum, CGG, S3, Talk Talk and Cap Gemini.

Upcoming Events!

Data Centre Summit,
Barbican Exhibition Halls,
London,
8th February, 2017

EcoCooling Ltd, IP28 6RE | 01284 810586 | sales@ecocooling.org | T@EcoCooling1 | ecocooling.org



THE WORLD ACCORDING TO...

Duncan Hughes, director of systems engineering EMEA, A10 Networks

How to rid the internet of DDoS

The worst DDoS attacks are the lengthy ones, disrupting service for days, or even weeks on end.

To make a big sustained attack possible, the attacker must use many hosts. Imagine it all came from a single data centre – the attack would quickly be stopped by the data centre operator (less than a day, anyway). But considering how many home networks participate in an attack, it is no wonder they are almost impossible to shut down. 30,000 systems sending 10Mbps of attack traffic results in 300Gbps of attack traffic. Many small trickles come in from many directions, becoming a massive flood once it reaches the target.

Ideally, these attacks would be prevented outright by people keeping their home systems clean and up-to-date on patches. Maybe they'll floss more, too. Scrubbing at the target site is a tried-and-true technique, but it's a matter of capacity: scrubbing 300Gbps of attack traffic takes some serious muscle.

Stopping a DDoS attack near its many sources is much better, and this is a matter of being a good internet neighbour.

And this is where the true opportunity lies. By deploying smaller-scale scrubbing technology at the edges of the internet, closer to office buildings and closer to home users, most DDoS attacks can be mitigated before they even make it out of the neighbourhood. This is especially true for ISPs and providers that operate sub-10Gbps links to hundreds or dozens of end customers.

By cleaning egress traffic before sending it upstream, you are not only a good internet neighbour, you can also save substantial peering costs over the years. Just as it is good common sense to drop any packet with a non-local source address, it is equally good sense to scrub malformed packets that have no business on the internet.

The big sites and the big links will always need special protection, but we must recognise that DDoS is a common problem we all face, and we all play a role in minimising it. If everyone is prepared to scrub a couple Mbps or Gbps of outgoing traffic, then nobody has to scrub hundreds of Gbps of incoming traffic: in effect if we can turn off the trickles, we can turn off the flood.

Aerohive deploys massive wireless network in Aberdeenshire

Aerohive Networks will deliver thousands of access points to Aberdeenshire Council as part of a project that represents the firm's biggest UK rollout to date.

The company will deliver a wireless system across the council's entire estate. The deployment will involve more than 4,000 access points installed at 170 schools and 50 additional sites including libraries and office buildings.

As well as supporting an increasing move towards digital learning in schools across the area, the wireless system is seen as a key enabler for 'Innovate Aberdeenshire', the council's new digital strategy.

Nicola Graham, head of service (ICT), Aberdeenshire Council, says: "We noted a 50 per cent increase in internet bandwidth demand over the last three years, and it is anticipated that this demand will only continue to grow as schools increase their use of mobile devices in the classroom, staff work more flexibly, and further public internet access is provided in public buildings."

The deployment will involve more than 4,000 access points, such as Aerohive's AP550 shown here.



According to Aerohive, its cloud-based solution was one of the reasons it was chosen for the deployment.

It says the challenges of serving an area of 2,437 square miles meant that the council's IT team was unable to monitor and rectify problems in a streamlined and efficient way. Team members would often have to drive huge distances to evaluate problems, but Aerohive claims its single-view console gives them the necessary visibility to identify issues remotely, decide upon the appropriate action, and ultimately fix connection problems more effectively.

Aerohive is also being used to underpin the council's *myaccount* portal, allowing residents to access a range of services, from making school meal payments through to signing up for job alerts. ■

EDITORIAL:

Editorial director: Rahiel Nasir
rahiein@kadiumpublishing.com

Designer: Alan McClenaghan
alanm@kadiumpublishing.com

Contributors:
Duncan Hughes, Paul Liptrot, Ed Thewlis

ADVERTISING & PRODUCTION:

Sales executive: Andy London
andrewl@kadiumpublishing.com

Publishing apprentice:
Jennifer Coates
jenniferc@kadiumpublishing.com

Production: Suzanne Thomas
suzannet@kadiumpublishing.com

Publishing director:
Kathy Moynihan
kathym@kadiumpublishing.com

networkingplus is published monthly by:
Kadium Ltd, Unit 2, 1 Annett Road,
Walton-on-Thames, Surrey, KT12 2JR
Tel: +44 (0) 1932 886 537
www.networkingplus.co.uk

Annual subscription: £80 (UK); £95 (Europe), £100 (USA and the RoW) airmail. Cost per single copy is £8.25.

Printed in England by
The Magazine Printing Company
© 2016. All rights reserved.

The contents of the magazine may not be reproduced in part or whole, or stored in electronic form, without the prior written consent of the publishers. The views expressed in this magazine are not necessarily those shared by the editor or the publishers.



Campaigners urge Ofcom to restrict spectrum ownership

Ofcom should ensure that no one mobile network can own more than 30 per cent of spectrum, according to a newly formed campaigning organisation.

'MakeTheAirFair' was founded by Three UK and is supported by TalkTalk, CityFibre, the Federation of Communication Services, Gamma and Relish.

According to Ofcom, BT/EE currently holds 45 per cent of immediately useable UK mobile spectrum. Vodafone owns 28 per cent, O2 has 15 per cent, and Three has 12 per cent. MakeTheAirFair says that in the whole of the developed world only Thailand and Malaysia have a larger imbalance of the airwaves amongst mobile operators when compared to the UK.

"The UK mobile market is broken at a critical time when it should be leading and not lagging almost all other developed countries," says Three UK CEO Dave Dyson. "Ofcom must prove it is on the side of consumers and apply a 30 per cent cap on total spectrum ownership following next year's auction."

In 2017, Ofcom plans to sell 190MHz of spectrum in the 2.3GHz and 3.4GHz bands. The regulator says this is an increase of just under a third of the total mobile spectrum currently available, and represents more than three quarters of the 4G airwaves that were released in 2013.



Three UK CEO Dave Dyson says the country's mobile market should be leading but is instead "broken" and lagging.

Ofcom is also proposing to apply a cap of 255MHz on "immediately useable" spectrum that any one operator can buy. As a consequence of this proposed cap, it says BT/EE would not be able to bid for spectrum in the 2.3GHz band.

Those behind MakeTheAirFair say a 30 per cent cap post-auction will deliver: a genuine choice of networks offering competitive prices and wide coverage; a UK mobile industry that is at the forefront of new technologies; better speeds; and greater consumer choice through a "healthy" MVNO sector. ■

POWER PROTECTION

UPS Maintenance, Service & Sales

- UPS service and maintenance
- Direct uninterruptible power supply sales
- Generator sales & maintenance
- Engineer network extending across the UK

Nationwide coverage,
24/7, 365 days a year

sales@mpowerups.co.uk

01782 968538 www.mpowerups.co.uk

Nexsan to go private

Unified storage specialist Nexsan will go private following a deal with Spear Point Capital Management that will see it spin out from Imation Corp. Imation's CEO Bob Fernander and CTO Geoff Barrall will continue to run the Nexsan business and will have seats on the new board. The investment from Spear Point will help fund Nexsan's engineering roadmaps, including plans for all-flash versions of *Unity*, and expansion of its block storage lines. This latest move for Nexsan follows its acquisition of private cloud and file share company Connected Data in 2015, and a restructuring of its manufacturing which reportedly increased gross margins by more than 10 per cent. The Spear Point deal is due to close in Q1 2017. ■

Capita awarded four lots in new framework

Capita IT Services has been awarded a place on four lots of the new Technology Products 2 framework (RM3733) by the Crown Commercial Service (CCS). The new framework replaces RM1054 and will serve the UK's entire public sector. It is expected to generate up to £1bn of product and services spend per year. Capita has been awarded a place on Lot 1: hardware; Lot 2: software; Lot 3: hardware and software; and Lot 6: catalogue. The firm expects to see particular growth in sales through Lot 6, according to executive director Craig Rodgerson: "The CCS has made it clear that it is looking to promote this option – where organisations procure through an online catalogue of commodity hardware and software – to the public sector. ■

Emerson Network rebrands as Vertiv

Emerson Network Power has become a standalone company and is now 'Vertiv'. In early December, Platinum Equity acquired the business from Emerson in a transaction valued at more than \$4bn. Emerson has retained a minority interest in Vertiv. The re-branded firm will be led by Rob Johnson as CEO. Johnson was most recently an operating partner at Kleiner Perkins Caufield and Byers, but spent 10 years at APC where he was president and CEO when it was sold to Schneider Electric for \$6.1bn in 2007. Vertiv says it will continue to build on the broad portfolio of product and service offerings for power, thermal and IT management capabilities it previously offered as Emerson Network Power. ■

Game over for Cisco as Ninja deploys Dell EMC

Krome Technologies has replaced Ninja Theory's legacy Cisco network infrastructure after it began struggling to handle the growing complexity of gaming technology and graphics.

Ninja Theory is the British company behind games such as *Heavenly Sword* and *Hellblade*. The firm employs dozens of developers who need to download large files of up to 75Gb as part of their daily work.

When its old network began causing production bottlenecks and worker frustration, Ninja called in vendor-agnostic technology consultancy Krome Technologies for a new solution.

The new infrastructure is based around Dell EMC's 'Active Fabric' leaf-spine

architecture. It incorporates two of the firm's *S4810* core switches and 10 *N2048* edge switches, each using eight 10GbE uplinks connected to the core switches.

As a result, it's claimed Ninja has experienced a ten-fold increase in network speed. It now runs 90 per cent of its servers at 10Gb with endpoints running at 1Gb, and plans to upgrade its storage infrastructure to 10Gb in the near future.

As the developer could not afford any downtime, Krome says the new infrastructure was installed over the course of a weekend and was up and running by the time workers arrived on Monday morning.

As well as being faster, the network is also now easier to manage, and maintenance no



Ninja Theory's developers need to download massive multi-gigabit files when working on games such as *Hellblade*, currently in production.

longer requires system shut downs. "With Krome, we have a software console that enables us to manage the whole network easily," says Ninja Theory's IT manager Chris Belton. "And because every floorport is fully patched and labelled, we no longer have to do any cable or physical patch management – everything is managed through the server." ■

NHS trust improves security to deal with BYOD use

United Lincolnshire Hospitals NHS Trust (ULHT) has worked with ANSecurity to improve secure network access, reduce management overheads, and enable cost-effective managed service delivery for local healthcare organisations.

Spread across three main sites with more than 7,800 supported staff, ULHT has several security systems in place including a VPN and two-factor-authentication (2FA). But with a growing demand to provide IT access to increasingly mobile users, the trust realised it needed to refresh its core network and security infrastructure.

During the first phase, ULHT and

ANSecurity upgraded existing Juniper *MAG* VPN hardware to new Pulse Secure *Connect Secure* appliances to cope with a greater number of BYOD users accessing services using a wider range of devices. This included a solution redesign that moved secure access to an active/active implementation across multiple sites to increase resiliency and scale-out capacity to meet demand.

They also deployed a licence server within a virtual appliance. This enables ULHT to select additional licences as either NAC or SSL connections to ensure future flexibility.

The next stage upgraded the trust's 2FA solution to use a smartphone-based app.

This further reduced management overheads associated with handling physical tokens.

In addition, ULHT has bolstered access controls, security and visibility across its guest network by deploying a next generation threat protection solution. This runs alongside centralised management, logging and reporting systems from SolarWinds to help track configuration changes and ensure the trust meet its commitment to ISO 2001 standards.

ULHT is now planning to provide elements of its secure access capability to several local healthcare organisations as a managed service. ■

Law firm's backend boosted following merger

Royds Withy King (RWK), said to be one of the UK's top 100 law firms, has overhauled its IT infrastructure with the help of Commercial IT Services.

In September, Withy King and Royds finalised their merger which created a £33m practice with 450 lawyers and support staff across a network of offices in London, Bath, Oxford and Wiltshire. Data and email accounts for Royds' 80 staff were migrated to Withy King's remote data centre in Manchester, creating an immediate need for increased digital capacity.

Commercial IT Services is part of Gloucestershire-based independent business services specialist, Commercial Group. It

had already worked on a virtualisation project for Withy King during 2010, so the merger with Royds provided an opportunity to upgrade and overhaul the entire system.

Using HP's latest *BladeSystem* server and I/O acceleration technology, Commercial has boosted RWK's backend capacity from 1Gb to 10Gb. The practice is now also 100

per cent virtualised – core applications at the data centre are underpinned by a VMware hypervisor, while Royds' staff have been provided with Citrix virtual desktops.

Dave Eagle, RWK's head of IT, says: "Within two months, our systems are fully integrated, resulting in optimum efficiency and productivity across all sites."

He adds that the company now has "intelligent" infrastructure that not only meets its current needs but also has flexibility for the future.

Following the upgrade, RWK is donating legacy equipment worth £100,000 to WE DO. IT, a social enterprise established by Commercial Group. ■



RWK's IT head Dave Eagle says the overhaul needed to be delivered quickly to ensure consistency and cohesion across the business.

ARROW

Education Services

Maximise your training budget with **30%** off all Arrow delivered IT training, exclusive to Networking Plus readers quote **ArrowEdu30**

Increased reliance on technology makes professional training more critical than ever. Specialised technical courses in Data Storage, Networking, IT Security and Virtualisation technologies will bring measurable results to you and your business. Authorised education from one of the **World's top IT training companies**, our offering includes: **Arista, Checkpoint, Citrix, F5, IBM, Juniper, NetApp, VMware, Veeam** and more.

Terms and Conditions:

Arrow delivered training in the UK between 1st January and 31st March 2017. Not to be used in conjunction with any other offer.

t: 0870 251 1000 e: educationteam.ecs.uk@arrow.com

ENTER
HERE!



ARISTA Check Point SOFTWARE TECHNOLOGIES LTD.

CITRIX PARTNER Authorized Learning Center

F5 AUTHORIZED TRAINING CENTER

IBM

JUNIPER EDUCATION SERVICES

NetApp Authorized Learning Partner

VEEAM

VMWARE

5 YEARS

ARROW EDUCATION SERVICES

V Five Years Out

Reliable Infrastructure Solutions for Every IT Environment

Core Elements. Simple Integration.



PROTECT

Over 100 efficient on-line and line-interactive UPS systems for high-availability applications.



POWER

Basic, metered, monitored and switched PDUs ensure reliable rack-mount power distribution.



HOUSE

Vendor-neutral enclosures, open frame and wall-mount racks store and organise.



COOL

Portable, in-row and rack-mount solutions for precise server room and data center cooling.



CONTROL

KVM switches and rack and IP console servers enable local and remote management.



CONNECT

Hundreds of cables, adapters and patch panels available in a variety of connectors, lengths and colours.

Discover how Tripp Lite fits into your business.

Visit go.tripplite.com/dc16

Tripp Lite United Kingdom | www.tripplite.com

(0)1635.887.396 | info-uk@tripplite.com



Met to use Microsoft cloud to upload footage from body-worn cams

The Metropolitan Police Service (MPS) has begun what's believed to be the largest rollout of body-worn cameras by police anywhere in the world.

In a £10m project, more than 22,000 frontline officers in the capital will be equipped with body worn video (BWV). Over the coming months, cameras will be



Supplied by Axon Public Safety, the Met says the body-worn cameras have already shown that they can help bring about speedier justice for victims.

issued to all 32 boroughs and a number of specialist roles, including firearms officers.

The cameras are being supplied to the MPS by Axon Public Safety as part of a three-year deal worth £3.4m. The deployment is expected to be completed by summer 2017.

The devices will be worn attached to the officer's uniform and will not be permanently recording. According to the MPS, this ensures that officers' interactions with the public are not "unnecessarily impeded".

Once the cameras are docked back at the station, all footage is automatically uploaded to secure servers hosting Microsoft's *Azure* cloud service. The MPS says that BMV recordings are subject to legal safeguards and guidance, and any video not retained as evidence or for policing purposes is automatically deleted within 31 days.

Microsoft says the evidence will be stored in the cloud within the UK after it opened data centres in Cardiff and London in September. The company claims that these have become part of one of the world's largest online storage infrastructures, supported by more than 100 data centres globally.

Microsoft adds that these centres hold more than 30 trillion pieces of data, and are backed by billions of dollars in investments that it has made since 1989. ■



VIEW FROM THE TOP

Ed Thewlis, MD, The DataShed

Unlocking growth with cloud computing

Analytics projects are all about trial and error. Some result in significant value while others lead to dead ends which, if you're an SME, is a big financial risk. What the cloud delivers to SMEs is affordable scalability.

Traditional data analytics were built for use on site and required significant investments from companies in order to house and maintain the IT infrastructure. Expensive database management systems and big data analytics software were also needed to supplement the infrastructure, leaving SMEs at a disadvantage due to the prohibitive costs.

Now however, the cloud can massively reduce costs for SMEs as they no longer have to create and maintain the IT infrastructure, and can gain immediate access to big data analytics without any upfront cost, whenever they need it. For example, Apache *Spark* can be run on Amazon's *EMR* web service, allowing SMEs to quickly and cost-effectively

process vast amounts of data without changing their infrastructure.

Deploying cloud services can unlock the benefits of data analytics for SMEs, enabling them to gain better insight into their own operational performance and therefore invest more wisely, as well as allowing them to truly understand their customers and serve them better.

The availability of pay-as-you go technology on the cloud is huge for SMEs. Although there are large operational differences between small businesses and large enterprises, one thing they have in common is data and the need to manage it and filter out the irrelevant to find the real value.

Analytics have never been more important, and the cloud has created a more even playing field for SMEs, allowing them to access analytical tools without the vast capital expenditure. Quite simply, SMEs can pay-as-they-grow. ■

Splunk enhances performance and collaboration at Gatwick

Gatwick Airport is using Splunk's real-time operational intelligence software solutions to monitor key performance criteria and enhance the customer experience.

Said to be the busiest single runway airport in the world, Gatwick is using *Splunk Cloud* to analyse and optimise each step of the customer journey – from scanning a boarding pass to the speed at which trays go through the X-ray. For example, it is using *Splunk Cloud* to help meet and exceed its target of processing 95 per cent of passengers through security in five minutes or less.

Gatwick also correlates data from its own systems, social media activity, the Highways Agency and Network Rail to predict passenger flow ahead of time. As a result, the airport is now able to dynamically change

its crew breaks, or call in more resources to meet demand and get passengers through to departures as quickly as possible.

"*Splunk Cloud* enables our teams to closely monitor real-time performance through an easy to use dashboard which plays an important role in the smooth running of the airport," says Chris Howell, head of business systems, Gatwick Airport. "By monitoring a wide range of passenger information and performance data, our teams are able to stay ahead of the game and effectively deploy resources in real-time to deliver an enhanced service for our passengers."

According to Splunk, innovative organisations see machine data as a strategic asset to gain a competitive advantage through digital transformation. ■

Colt defines "networks of the future" with 100G upgrade

Cisco is helping Colt Technology Services with a system-wide 100Gbps upgrade to its pan-European and Asian network. Colt says this will enable the rapid delivery of high-performance connectivity for cloud-scale, business-critical applications to its enterprise, carrier and web-centric customers.

The firm says its next-generation packet network uses end-to-end segment routing technology (an enhancement to IP MPLS) to simplify and automate network operation and significantly reduce operating costs.

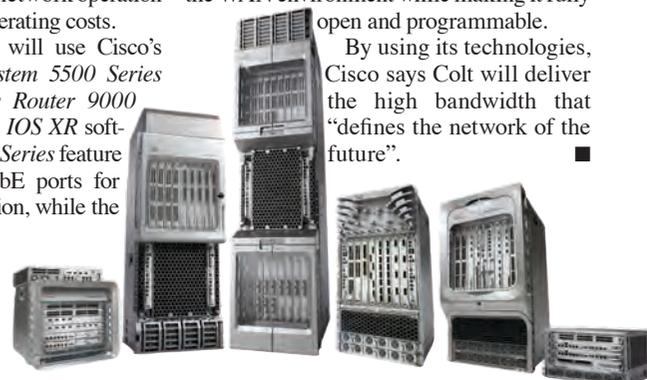
The upgraded network will use Cisco's *Network Convergence System 5500 Series* and *Aggregation Services Router 9000* platforms, both running its *IOS XR* software. It's claimed the *5500 Series* feature high-density routed 100GbE ports for large-scale WAN aggregation, while the

9000 routers offer low power consumption and virtualisation capabilities.

The platforms will form the main components of an end-to-end network with segment routing that utilises Cisco's *WAN Automation Engine*. The vendor says this will provide a balance between distributed intelligence and centralised optimisation and programming. Based on SDN, the engine is designed to abstract and simplify the WAN environment while making it fully open and programmable.

By using its technologies, Cisco says Colt will deliver the high bandwidth that "defines the network of the future". ■

Cisco's *NCS 5500 Series* and *ASR 9000* platforms will form the main components of an end-to-end network.



Barbican Exhibition Halls, London 8th February 2017

Explore | Create | Network | Discover

Data Centre Summit London is a one-day conference event for data centre industry professionals. Taking place at the Barbican Centre in the heart of London, the event brings together the data centre industry's leading experts under one roof. Improve your skills with education, debate, and networking opportunities. By the end of the day you'll be left feeling inspired thanks to seminars led by the industry's most respected thought leaders.



Explore

ways of saving money, develop your business and share the experience of other organisations

Create

new business opportunities and form new partnerships with leading vendors

Network

with peers and vendors from other organisations

Discover

what's new in the industry and keep up to date with the latest innovations and technologies

PLATINUM HEADLINE SPONSOR



GOLD SPONSOR



www.datacentresummit.co.uk

Intelligence to Optimize Your Network

so You Can Optimize Your Operations.

Introducing BCIEnterprise: Continuous Network Monitoring

In today's dynamic mining environments, conditions continuously change – and your network must too. BCIEnterprise empowers you with the strategic data to understand and optimize how your Kinetic Mesh® network adapts to evolving operational demands over time.



Rapidly access past and present data from nodes on trucks, shovels, and more



Identify and diagnose potential problems *before* they impact users



Gain insights to proactively optimize your mesh network performance



© 2016 Rajant Corporation.
All rights reserved.

BCIEnterprise delivers the historical and real-time data you need to monitor, diagnose, and troubleshoot your mesh network with ease—while helping you prepare for future network demands.

See how at www.rajant.com/bcenterprise today.



Keeping your eye on the ball

Network failures can be damaging for business, but this can be even worse when you're in the public eye. Here's how these high-profile organisations spot potential faults before they happen.

Paessler provides the right match for Fulham FC

There's more to Fulham FC's stadium than staging a match every other Saturday – it also hosts events such as weddings, parties, tours and corporate functions.

Founded in 1879, the club can accommodate 25,700 fans at its Craven Cottage ground. Players train at a site eight miles away in New Malden.

It is run by 250 staff aided by IT kit over three sites comprising two data centres running VMware, EMC storage, Juniper switches and Veeam for backup and offsite replication. This is underpinned by a VPLS from Exponential-e.

IT head Alex Malinov says: "Even if there isn't a game going on, the players are training, people here are gearing up for the next big match, and often our event spaces are being hired out. Ensuring that the IT network is able to support those activities is hugely important."

He explains why he decided to implement a monitoring solution to overlook the network: "There is a definite need to be aware of what's happening on the network, to be able to react to issues straight away and, increasingly, prevent the issues from happening in the first place."



After evaluations, he chose Paessler's *PRTG Network Monitor* which had initially been recommended by a colleague. Malinov says it is cost-effective and easy to use: "sFlow provides visibility of bandwidth usage, which is very important on match days, for instance. This is impossible to replicate outside of when it is actually happening, so it helps us to plan for it. We also use VMWare sensors, plus we ping our stadium turnstiles."

As well as the web interface, he also

uses Paessler's *iPhone* app and says it is extremely useful when he is on the move. "It allows me to prioritise any alerts that come through outside of office hours quickly and easily."

Malinov has customised the monitor to only send emails for serious outages, otherwise the IT team relies on the sensors changing colour. He has also set up a large screen in the office showing the club's entire network topography and all of the sensors that are installed – if there is a problem, it automatically flashes up.

Speedy find and fix to avoid deadline disasters

Revenues suffer if deadlines are missed, even by a few minutes, at *The Times*, *The Sun* and *The Sunday Times*. The publisher, News UK, decided to overhaul its on-premises IT infrastructure after experiencing multiple unforeseen instances of downtime from service failures and interruptions.

It also realised that its ageing and disparate monitoring applications were performing poorly. Issues were taking too long to identify, and fixing them involved numerous employees from different parts of the company.

In September 2014, News UK and two associated companies moved into a 17-storey building called *The News Building* (aka 'Baby Shard') by London Bridge, Southwark.

Its IT kit comprises 72 Cisco *UCS* servers, split between two data centres, running VMware virtualisation software and *Linux* and *Windows*. And it has infrastructure, management and monitoring applications, as well as a content management system and specific editorial and workflow applications.

News UK sought to replace the



ONE SUPPLIER ...

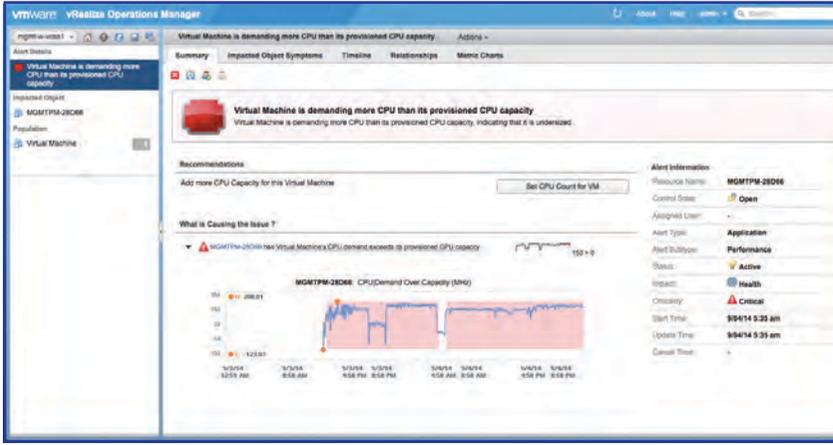
Providing turnkey critical power solutions, including design, installation, maintenance & support

- 3-Year Warranty
- World class impartial advice saving you time & money
- Call now for a FREE site survey & health check
- Nationwide sales & engineering team, on hand 24/7

Call sales: 0800 978 8988
 24 hr service: 0845 519 3928
 E-store: criticalpowersupplies.co.uk
 Email: sales@criticalpowersupplies.co.uk
 Website: criticalpowersupplies.co.uk

Critical POWER : When it matters most





handful of different tools used to monitor the virtualised data centre with one product for a holistic view of software applications. After testing, it rolled out Blue Medora's *True Visibility Suite* for VMware vROps which is seamlessly integrated with News UK's on-premise Cisco UCS and Nexus systems, NetApp and Citrix NetScaler.

The company's storage and compute manager Juan Beetge says: "Having one holistic view of the infrastructure, we can now pinpoint the problem directly, and we know the right people within our company to call to address it."

As well as showing a default code and information of the fault itself, he says the new package saves time by offering recommendations to cure the fault.

Beetge adds: "Also, because users have more information in vROps from the different elements such as networks, they can see how their systems interact or rely on different components. Whereas before, those connections weren't visible which made troubleshooting more difficult."

"The management packs are great. They are very well thought of – small things like the icons make sense, how the information is presented, and the value they add to the whole vROps solution itself."

In addition, the data now available will also help News UK plan for tomorrow, with additional metrics from the new package that enable the company to understand what effect any changes in IT will make on future capacity.

Virtualisation proves to be just the tonic for medical publisher

More than 60 journals are published by BMJ from a grade II-listed building it shares with its parent, the British Medical Association, in Kings Cross.

It started in 1840 with the publication of *The Provincial Medical and Surgical Journal*. Now BMJ (shortened from British Medical Journal in 1998) also has offices in China, India, Singapore, US and Wales. As well as publications, it runs events and training and recruitment services.

Over time, BMJ's IT infrastructure had grown organically as new sites, applications and features were commissioned. However as it expanded, it increasingly built a technical debt. Head of operations Alex Hooper says: "In a way, we were victims of our own success. The technology department's focus was on getting the new products to market and there was little time to go back and revise the architecture. An expiring hosting contract and the subsequent review of hosting providers gave us an opportunity to pay off that technical debt and to design for the future."

As an international 24/7 organisation, BMJ could not afford downtime,

scheduled or otherwise. It needed to change its culture and move to more frequent updates and automation. However, it was also used to being in

control and keeping everything in-house. So the company set a short task for managed service providers (MSPs) on a shortlist and chose Datapipe.

"We wanted someone with the whole package; someone we felt we could work in partnership with," says Hooper. "Datapipe had managed AWS, they did hybrid clouds, they could help us expand into China, and they had the adaptability to work with us in the way we wanted."

BMJ has now moved its digital platform to more than 200 VMs running its applications 24-7 in a private cloud with virtualised infrastructure. And the release cycle has improved from around one product update a month to up to three a day.

With automation, interdependencies are managed or were removed and the processes untangled. Content has started to be delivered using APIs rather than weekly

batch file transfer jobs, and services can now be built around the APIs.

BMJ adds that the new infrastructure has initiated a change of culture, and was delivered with no downtime that affected customers.



Gear up your PBX Cut Costs, Boost Profits

3CX Phone System

Move to 3CX - an open standard software-based IP PBX providing easy management and Unified Communications at lower cost.

- Software based: Easy to install & manage
- Inexpensive to buy and expand
- Virtualize with Hyper-V or VMware
- Halve your phone bill with SIP Trunks
- Increase mobility with Mobile Clients
- Integrated WebRTC based Video Conferencing



WWW.3CX.COM
+44 (20) 3327 2020





Historically, the network manager didn't necessarily have any formal training but could put a connector on a piece of cable and knew how to patch in the comms room, according to Networks Centre. But with rapid advances in technology, it says basic knowledge is no longer enough.

PHOTO: NETWORKS CENTRE

From motherboard to executive board?

Today's network managers need to come out of the IT closet and become more business savvy – or so we're told. RAHIEL NASIR finds out what they need to do in order to remain relevant in 2017 and beyond.

In an age where digital transformation is proving essential for businesses to drive increased productivity, studies carried out earlier this year revealed that many technology leaders believe today's IT teams are not fit for purpose.

For instance, a survey of 1,200 IT workers and senior IT managers conducted by recruitment specialist Experis found that organisations want their teams to deliver more cloud services and mobile apps, and turn data into actionable insight. However, 67 per cent of IT leaders said they currently lack the balance of team expertise required to provide these services.

According to Experis' *Tomorrow's Tech Teams* research report which was published in April, the IT department has been traditionally regarded as the "practical powerhouse" tasked with maintaining infrastructure. But now it

is evolving to become more strategic.

"IT teams are starting to redefine business practices and put digital services at the heart of their organisation," said Geoff Smith, the company's Europe MD. "Yet this research suggests they aren't in a fit state to facilitate this change.

"IT leaders think they lack the relevant team skills, but workers believe they aren't given the opportunity to demonstrate their talent. This should be a wake-up call for UK businesses. They need to establish the capability of their IT department. There is an expectation that IT can drive strategic growth."

VMware takes this further with the findings of a study it released at the end of November. It revealed that business leaders believe the management of technology is shifting away from IT to other departments, as lines of business take charge of technology-led innovation in UK organisations.

According to the virtualisation specialist, this is leading to the 'decentralisation' of IT. It says this occurs when any employee within any department in any organisation (other than the IT department) is making IT purchases or installing or maintaining software. It can also include employees using non-IT approved software or services without the involvement of the centralised IT department.

VMware's study of 200 IT decision makers and heads of lines of business in the UK discovered that this decentralisation of IT is delivering real benefits such as a faster ability to launch new products and services, giving companies more freedom to drive innovation and increasing responsiveness to market conditions.

The firm also found that there are positives from a skills perspective, with the shift in technology ownership beyond IT to the

broader business seen to increase employee satisfaction and help attract better talent.

However, it went on to reveal that leaders from across the business believe decentralisation is causing a duplication of spend on IT services, a lack of clear ownership and responsibility for IT, and the purchasing of solutions that are not secure.

Furthermore, the movement is happening against the wishes of IT teams, the majority of which want IT to become more centralised. In particular, the study said IT leaders feel that core functions like network security and compliance, disaster recovery/business continuity, and storage should remain in their control.

Joe Baguley, VMware's VP and CTO, EMEA, said: "Managing this change is the great organisational challenge companies face. The rise of the cloud has democratised IT, with its ease of access and attractive costing models,

so it's no surprise that lines of business have jumped on this opportunity. Too often, however, we're seeing this trend left unchecked and without adequate IT governance, meaning that organisations across EMEA are driving up costs, compromising security, and muddying the waters as to who does what as they look to evolve."

Seventy-seven per cent of respondents in the study agreed that IT should enable the lines of business to drive innovation, but must set the strategic direction and be accountable for security. Baguley said this highlights the balance that needs to be struck between the central IT function retaining control while also allowing innovation to foster in other separate areas of the business. "By recognising these changes are happening and adapting to them, IT can still be an integral part of leading this charge of change," he said.

Ian Goodman, head of technology consulting at Surrey-based talent management services firm Gibbs S3, supports this view. He says the centrality of IT is in fact critical to all business delivery systems, especially when it comes to security: "A network manager must now know who is accessing the network and what are they doing on it, as well as ensuring that non authorised attempts to access the network are thwarted."

Goodman says the "storming influence" of analytics is not passing over the network manager, either. "Advanced analytics skills, which give network managers the ability to predict network demand as well as report it, are in demand as the network becomes the central enabler to all business functions."



BCS, The Chartered Institute for IT, has published a series of books to provide best practice guidance to key roles in a range of business areas.

So is all this merely a demarcation dispute with IT departments believing that their roles are being hi-jacked by others in the organisation?

In Experis' survey, IT workers hit back with claims that their potential isn't being realised. The majority said that their skills and knowledge were not being fully utilised by their employers due to a lack of investment and up-to-date training. In addition, more than a third of IT workers pointed out that day-to-day problem solving is prioritised over innovation projects.

According to Smith, this shows a "disconnect" emerging between IT leaders and IT workers: "Organisations must review and restructure their IT teams to enable innovation. This starts with greater investment in the right training that is tailored to employees and business requirements, while creating a culture that supports personal development.

"It's also important to realise the potential of existing IT teams and encourage individuals to think creatively about projects that will impact the bottom line."

"IT leaders think they lack the relevant team skills, but workers believe they aren't given the opportunity to demonstrate their talent."

Geoff Smith,
MD of Europe,
Experis

Goodman concurs here. "As recently as 10 years ago, the network manager was usually to be found locked away in a small or dark room dealing with LANs and WANs – which nobody else needed to know about. The only time anyone really took notice was when email went down or when a business-critical system was involved.

"In today's world, when technology is such a fundamental enabler across the entire range of business services, we need a sense of immediacy and connectedness. The network manager must undergo a fundamental change in mindset: they have to understand what the business as a whole is trying to achieve because connectivity is of absolute paramount importance to this delivery across departments."

According to Goodman, the network manager's role is fundamentally changing from being primarily "passive" in nature to "proactive".

"It's no longer about simply providing a service, but about collecting the data on how it's being utilised. Being able to understand how demand for a particular network fits with the activity going on in different departments across the business, where peaks and troughs in demand are going to occur, is now at the heart of the role. In the next five-plus years, network managers and the entire IT department will have to go beyond this to show what value they are creating.

Getting down to business

In August, BCS The Chartered Institute for IT, published a white paper that warned that future CIOs and their teams

face a number of new challenges that will require significantly more than just keeping up to date with technology.

Jon Buttriss, CEO of BCS Learning & Development, said: "It is vital that the focus centres on customers, as well as managing business needs. Capabilities around business expertise and relationship management will become increasingly important as future IT digital leaders address their organisational objectives."

Called *The CIO of the Future*, the white paper states that the alignment of technology to business and customer needs is of primary importance, but putting focus onto customers is an important shift required from CIOs who are more used to focusing directly on business needs.

It also says that while disruptive new technologies need to be embraced, effective technology management needs to provide governance to protect business and customer assets and data.

"Some technology skills need to be developed within the IT department – for example around data science and architecture," says the paper. "But capabilities around business expertise, relationship management and emotional intelligence and influence are likely to become more important as core technology delivery becomes increasingly commoditised."

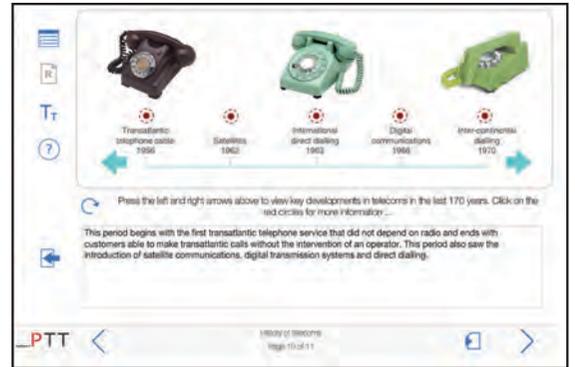
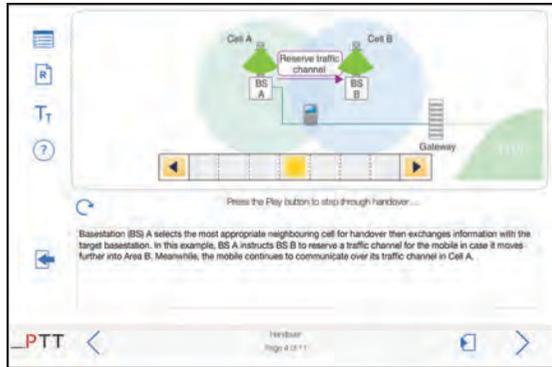
BCS offers a number of resources to help IT pros become more business-minded.

For example, earlier this year it announced a partnership with global exam institute EXIN on a new certification programme. According to

IT Telecoms Data

TTR **Recruiting your Dream Team?**

Contact the Channel's Leading Flat Fee Recruitment Specialists.
 15 years in Telecoms Recruitment • 250+ UK wide customers • All positions, all levels.
 Call TTR on **01582 691414**, email: enquiries@ttruk.com or visit www.ttruk.com



Specialist training firm PTT believes all management in an IT-centric organisation should have a basic understanding of ICT. Its online courses include introductions to broadband, mobile and telephone systems aimed at non-technical staff.

EXIN, trends such as cloud, mobile, and 'Big Data', amongst others, have created significant shifts in the way businesses operate and are often key for innovations. Its certification programme (which is already offered by BCS) is claimed to provide alignment between business needs and business change solutions, leading to "sharper decision making and improved processes".

Under its enhanced partnership with BCS, EXIN has expanded its governance and security portfolio with three foundation exams. They include *Business Analysis*, *Business Change and Commercial Awareness*, and are complemented by five practitioner exams.

Separately in 2014, BCS launched the first books in a new series to provide industry guidance to key IT roles in a range of business areas. At the time, the society said the idea behind the books is to put 'the technical in the context of the business'. It said this will enable IT pros to see how their jobs fit into to the wider aims of the organisations they work for,

and how the specific tasks they perform impact on their colleagues and customers.

The first two books launched included *Business Relationship Manager* which aims to give practical guidance to those new to the role or interested in enhancing their understanding of what it entails. *Service Desk and Incident Manager* has a similar approach, but is also aimed at suppliers of service desk and associated software so they can gain a deeper understanding of how users of their products need to work. As part of the series, BCS has now also published *Problem Manager and Continual Service Improvement Manager*.

Other training organisations, such as Informa Telecoms Academy for example, have been running business-oriented ICT courses for several years now. The company describes its *Advanced Telecoms Management* programme as an integrated series of advanced business programmes designed to meet the learning development needs of "forward looking" telecoms professionals and

organisations. The series includes the five-day *Telecoms Mini MBA* which features more focused technology modules and a greater emphasis on the business aspects of telecoms. It covers five topic areas: strategy/business environment; technology; finance; leadership; and marketing/customer focus.

Terrapinn Training also offers an *MBA in Telecoms*. Its programme aims to give delegates insights into the main developments in the telecoms industry and learn how to strategise. It promises to teach participants essential business skills through a "no-nonsense" appraisal of industry trends, so they will be able to make a real and lasting difference on their businesses. Over three days, students will gain an understanding of telecom networks and technology, and learn how to read financial reports, statements and financial ratios. Terrapinn claims the course is "highly practical", involving the use of simulation tools, exercises, and a realistic and challenging case study.

data speeds advancing beyond 10G, basic knowledge is not enough."

Sawyer goes on to warn that if network managers don't keep up with the technology side of things, the risk to the business could be disastrous. "No one wants to specify yesterday's technology and then have to answer why it won't keep up with tomorrow's next big thing."

As well as technology progression, the IT manager's changing role is being driven by a variety of factors, such as the realisation that if the network isn't robust, it won't support all the future advances that will be forced upon it. Sawyer says: "[There's also] more integration of departments. Traditional facilities management services – CCTV, door entry, lighting, and so on – are now being run on networks. There is much more to consider than just the data requirement."

He continues by saying that the specific skills the network manager now needs to have is design level experience in order to fully understand what is required for today's network. "He must understand cabling, pathways and containment, earthing, firestop, power, security, and a whole raft of environmental considerations."

As well as being a distributor of network infrastructure solutions, Networks Centre also runs a training academy. It is the sole European provider of BCS's *Registered Communications Distribution Designer* and also offers the organisation's *Applied Data Centre Design and Best Practice* course.

Sawyer claims the courses take into consideration every aspect of network design – and that's vital for an organisation's success. "Being able to work to a process and put structure around the network that encompasses all equipment that will be connected, allows for future growth and covers everything that must be considered when building a network."

Not enough technology

But not all agree that network managers need to refine their skills by focusing more on business. In fact, they say what's needed is for them to actually get *more* technical.

"I believe that in a lot of situations historically, network managers grew into their positions," says Keith Sawyer, technical services director at Networks Centre. "The network manager was usually the guy who could always fix the crashed PC, get the website running, or any other sort of PC-based issue that may have arisen. He didn't necessarily have any formal training, but he could put a connector on a piece of cable and understood how to patch in the comms room."

"Today, with everything becoming IP-ready, PoE in widespread use, Wi-Fi, and



"The network manager was usually the guy who could always fix the crashed PC, get the website running, or any other sort of PC based issue that may have arisen. He didn't necessarily have any formal training..."

Keith Sawyer, technical services director, Networks Centre



PTT Level 3 Award in Principles of Telecommunications

Accredited by: **ncfe.**

Accredited online learning for telecoms engineers

- Aimed at technical staff joining the telecoms and ICT sectors
- Accredited and certificated by NCFE, a leading UK awarding organisation
- Choice of specialisation: Telephony, Mobile communications or Data communications
- Study and assessment conducted online with no need to attend a training centre
- Created and administered by PTT, the specialists in online learning for the telecoms and ICT sectors

www.telecomsqualification.com

For further details about online telecoms and ICT training from PTT:

www.ptt.co.uk
T: +44 (0) 1736 759642
E: info@ptt.co.uk



BCS may agree here. In its predictions for 2017 made at the beginning of December, it said the most successful organisations next year will be those that can develop an end-to-end digital capability that spans design and development all the way to deployment and management. According to BCS fellow and Unisys vice president Nicholas D. Evans, this will enable organisations to “continuously evolve their digital services over time with tremendous agility and at high levels of sophistication and scale”.

For Gibbs S3's Goodman, if network managers need to become more business-focused, they primarily need to change their mindsets. However, he points out that this goes beyond just the simple need to understand the bigger business picture. Like Sawyer, he says the basic concerns of the network manager remain the same, and identifies connectivity, performance level and security as the main priorities.

And if further proof were needed about how industry hungers for more workers with technical skills, the UK requires 134,000 new tech specialists every year, with around half of these being in junior level roles. That's according to analysis of data released last year from the Office of National Statistics and the Tech Partnership, the network of employers collaborating to create the skills for the digital economy.

The data revealed that around 1.3 million people currently work as technology specialists. It said that there are now 14 applicants for every tech apprenticeship vacancy advertised, compared with an average of nine applicants for apprenticeship vacancies in general.

Employers such as BT, Capgemini, Fujitsu, Google, IBM, amongst others, have been working together through the Tech Partnership to design course standards and online development activities as part of the *Tech Industry Gold* apprenticeships scheme.

Door swings both ways

So within all that, is the onus still on the IT or network manager to acquire new skills in order to adapt and understand what the ‘suits’ want? Not necessarily. Some argue that the door swings both ways.

For instance, Bob Nott, managing director of PTT which provides specialised ICT and telecoms training online, believes it is down to all management in an IT-centric organisation to have a basic understanding of the capabilities and limitations of ICT. Network managers can then have empathetic and productive discussions with their colleagues.

“ICT has become central to the commercial activities of many businesses,” says Nott. “Any weaknesses in the ICT infrastructure or changes generally can have a direct impact on services provided to customers. Network managers have an important role to play in ensuring that those who make commercial decisions understand the ramifications of changes in infrastructure or failure in any part of the ICT system.”

As a result, Nott says network managers must be able to explain complex technical issues to those without an IT background, and understand the wider implications of ICT on business success. He says while it would be unfair to assume that IT personnel lack communication skills, formal training in presentation skills could be beneficial. “Even training normally aimed at instructors could be applicable as it teaches trainers never to assume prior knowledge when imparting information.”

Apart from courses aimed at technicians and engineers, PTT has

also developed ones that are aimed at non-technical staff. For instance, among the nine courses it offers as part of its *Introduction to Telecoms* programme, there are a number of sessions which the company says are particularly useful for non-technical staff who require an appreciation of telecoms services and the networks that provide those services.

These include various introductory courses that cover: the capabilities of telephony and data services provided by modern telecoms networks and their underlying infrastructure; the basic operation, capabilities and applications of wireless communications for those joining the telecoms sector in a managerial or technical role; and the underlying physical infrastructure of a telecoms system and the commercial, standardisation and regulatory aspects of telecoms provision.

There is also a course targeting customer service agents and retail sales representatives that introduces modern telecoms services for residential customers, including telephony, broadband and mobile. PTT says the course does not assume any prior knowledge of telecoms, and students will not require a technology background to benefit from it.

The “new oxygen” for business services

What's emerged here is the need for network managers to be able to move at the speed of business. As Goodman says, those who are used to long lead times and the option to pre-scale the network now have to respond to the demands of the digital age. “Teams working on test and learn cycles and in innovation labs have to be able to get products and

services out to the outside world quickly, securely and flexibly.”

And although we are still relatively near the beginning of the journey, he says the role of the network manager is becoming increasingly critical to business success. “Flexible access to on-demand connectivity is the new oxygen for business services. And if a network manager cannot respond to the bigger picture, the entire business is in danger of choking its innovation potential.”

When BCS launched its white paper mentioned above, Buttriss said it was essential for CIO roadmaps to include the skills needed to transform their organisation to address the significant shifts in the worlds of business and technology. “For the IT leaders that don't shy away from the challenges, the future has never been brighter for them to lead against their competitors,” he concluded. ■

First 10 requests for information will receive a free APC Mobile Battery pack!
No purchase necessary



Benefit longer term, by investing in testing your UPS system

by Mark Waters

It is misguided to assume that just because a UPS is running; it is fully operational, fit for purpose and legal. While a power failure may only occur for minutes, recovery can take weeks, if not months (and be expensive).

UPS testing is riddled with complexities and dangerous, but what is involved? A maintenance contract provides 24/7 emergency technical support, plus monthly, bi-annually and annual testing including:

- Preventative maintenance – test transfer switches, circuit breakers and maintenance bypasses, use thermal imaging to locate hot-spots and reveal poor connections and gauge if anything is unusual.
- Checking protection settings and calibration – proactively assess what is going on and determine if any element is at the end of their useful life.
- Functional load testing – ensures optimum operational efficiency incorporating.
- Steady-state load tests to check input/output conditions and harmonics at varying load percentages (typically 0%, 50% and 100%).
- Complete operational test including a monitored battery-rundown to verify system continuity in a failure situation and determine battery degradation.

Using a company, with significant experience in UPS maintenance, testing and monitoring, such as Critical Power is paramount. Having the ability to claim for component failure under warranty or maintenance contracts means the manufacture faces the cost rather than the user. So, granted UPS testing is costly and time-consuming, but the costs associated with an unanticipated loss of business will, without doubt, outweigh those incurred from testing.

For more information on UPS In Life Management please call Callum White on 0800 978 8988 or request a free site survey to discuss how we can help you.

Website: criticalpowersupplies.co.uk • Telephone: 0800 978 8988

Critical POWER : When it matters most

off-the-shelf: power distribution units

Plug 'n' play

Today's PDUs promise to avoid the nightmare of outages and can be monitored from afar. Here are some of the latest models

Chatsworth Products has added two new features to its range of *eConnect* PDUs. It believes the high cost and time associated with deployment is one of the biggest challenges data centre managers face when considering the use of intelligent rack PDUs to support their DCIM initiatives. It claims the new features save up to £316 in installation costs for each PDU.

They include *Secure Array IP Consolidation* which enables users to link up to 32 PDUs under a single IP address using standard Ethernet cables. Chatsworth says this cuts installation time and costs.

Additional features include outlet grouping, data logging, threshold alarms and PDU cloning. Adding a second IP address provides failover capability, which enables functioning PDUs to continue communicating if a unit in the array loses connectivity.



Click Secure Technology is now also available on all *eConnect* PDUs with IEC outlets. It uses locking outlets to securely fasten equipment to the PDU without the need for proprietary power cords. Chatsworth says it also safeguards power and eliminates the cost of additional accessories.

The firm adds that its *eConnect* PDUs have more than 330 standard configurations from five product models.

Eaton says its new range of 1U and 2U enclosure power distribution units (ePDUs) offer users with smaller IT racks many of the benefits of its vertical 0U units, including improved efficiency, reduced cost and enhanced business continuity.

As well as suited to applications where racks are not high enough for 0U ePDUs,

Eaton says they are also ideal for wall-mounted enclosures with no rear access. It says all the new models have a plug retention feature and are suitable for operation at up to 60°C.

Basic and metered models are available along with switched, metered outlet and managed models.

To keep costs down, Eaton says that up to eight ePDUs can be daisy-chained from a single IP port and IP address. They also have a hot-swap capability for the control modules, which means they can be exchanged or updated without interrupting the supply of power.

The vendor claims metered versions offer ±1% billing-grade accuracy, making it easy to track energy usage.

The new range also supports mass configuration and mass upgrading, reducing administration time and improving overall efficiency.

The company says the new ePDUs can be easily monitored and managed from a virtualisation dashboard when paired



with its *Intelligent Power Manager* software. And, when used with optional sensors such as the *Eaton Environmental Monitoring Probe*, the ePDUs can trigger environmental alerts such as excessive temperature or humidity and initiate disaster recovery, including the automatic migration of virtual servers to a backup site or a graceful system shutdown to protect mission-critical loads.

Raritan has added outlet-level metering and power switching to its *Intelligent Rack Transfer Switch*. It says these make it ideal for cloud computing and for racks where each device has its own power supply.

The firm says many buyers use its DCIM software to analyse and monitor the power information gathered by the transfer switch, as well as the health of the power chain. The new transfer switch is designed to monitor power at both the outlet- and inlet-levels, providing more granular energy information useful for capacity planning and managing energy costs.

Raritan says the new switch offers fast and reliable load transfers from one power source to another. It claims it's one of the fastest in the industry and twice as fast as standard automatic transfer switches.

According to the company, while automatic transfer switches (ATS) were



inexpensive, they suffered from longer transfer times, and often failed as a result of electrical arcing that welded contacts together. Meanwhile, static transfer switches offered very fast transfers but were nearly six times more expensive than ATS, drew more energy, and produced excess heat that consumed additional cooling resources.

Raritan reckons it has overcome these limitations with a new hybrid system that uses the best of both electromechanical relay and silicon-controlled rectifier technologies to deliver fast performance and better energy efficiency and reliability.

Rittal says its four new compact PDUs halve assembly time because they snap into place with no tools. Up to four can be mounted in a 0U space.

The basic model has an insert strip which, says Rittal, is easily connected and is immediately functional. The metered version has an internal web interface and an Ethernet port so the performance data of an entire rack can be monitored. There's also a switched model which allows users to turn individual output slots on and off via a web interface. The fourth version is for high-end IT racks and offers power distribution with power measuring and monitoring functions for each individual output slot.

All the PDUs have standard international data centre CEE connectors with a three-metre long connection cable and C13 and C19 slots. They are available in single-phase or three-phase versions; phase currents of 16 A and 32 A can be supported, depending on the type of PDU, which means electrical outputs of more than 22 kW can be distributed by one rack PDU.

Rittal says its PDUs can be easily integrated with its DCIM software to

monitor and log energy use and alert users in an emergency. The *Computer Multi Control III* monitoring platform, with its own CAN-bus function and (optionally) up to four sensors, can also be connected to monitor temperature, humidity and access. Rittal says the user administration system protects the power distribution from unauthorised access.

The four systems together extend the vendor's current product range of modular PSMs (power system modules) to include non-modular PDU types.



Tripp Lite has introduced an expanded range of managed gigabit Ethernet switch PDU combos designed to connect devices such as computers, printers and servers to a LAN. With up to 24 ports per switch, the company says they are ideal for use in small-to-medium distributed networks.

The units feature a built-in Ethernet network interface to allow remote access. They are said to be energy-efficient, provide the ability to manage, prioritise and monitor LAN traffic, and offer one or more ways to modify switch operation.

Each one is combined with a built-in network-grade PDU which, according to Tripp Lite, saves space

and money. It says the entire switch/PDU combo unit fits into 1U of rack space.

The new range is available with 16 or 24 auto-negotiating 10/100/1000 Mbps Ethernet ports, and the integrated PDUs provide up to 12 NEMA 5-15R outlets. They also feature an RJ45 console port and command line interface (CLI). PoE models are also available.





KVM CHOICE
Total Control in Computing

Specialist suppliers of Datacentre equipment call for a quote today!

HASSLE FREE PROCUREMENT OF: IT / NETWORK / POWER / INFRASTRUCTURE EQUIPMENT



0845 899 5010



sales@kvmchoice.com | sales@pduchoice.com
www.kvmchoice.com

Bletchley Park to host UK's first National College of Cyber Security

The UK's first National College of Cyber Security is being created at Bletchley Park. Due to be operational by 2018, the free-to-attend boarding school will teach cyber skills to the country's most gifted 16 to 19-year-olds, and develop them into top flight cyber security professionals.

A £5m restoration project funded by the Bletchley Park Science and Innovation Centre (BPSIC) is already under way to convert Block G, one of the largest buildings on the site, into a pioneering security technology hub equipped with some of the most advanced facilities in the world.

The college will develop its syllabus working with those at the forefront of the UK's cyber security industry and integrate it with modules in complementary subjects such as maths, computer science and physics.

The plans for a National College of Cyber Security are part of a strategy announced by QUFARO. This new body has been set up by senior security experts from Cyber Security Challenge UK, the National Museum of Computing, BPSIC, the Institute of Information Security Professionals, BT Security, and Raytheon.

In addition, the organisation will also develop a series of new cyber security courses covering a range of learning opportunities that do not currently exist. These include teacher awareness and training programmes, and new virtual courses in the fundamentals of cyber security for those seeking a career change.

At the same time as delivering its education programme, QUFARO also plans to support new British cyber businesses with the launch of a £50m cyber innovation investment fund next year.



A £5m restoration project aims to convert Block G at Bletchley Park into a state-of-the-art security technology hub.

Overworked and underpaid

Almost three quarters of IT pros work unpaid overtime each week, with 34 per cent working more than 15 hours extra, according to research by Lieberman Software.

In a poll of 200 IT pros at September's *Microsoft Ignite* show, the cyber security software specialist also found that only a quarter actually go home on time or are paid for any overtime. Additionally, 15 per cent work between 10 and 15 extra hours, and 10 per cent work between five and nine additional hours.

The firm's CEO Philip Lieberman believes this culture of overworking puts IT security at risk. He says: "It is no secret that IT staff are overworked and underpaid, so how can we possibly expect them to be on top of all the cyber security threats attacking their organisation alongside all the other tasks they have, like keeping systems running?"

According to Lieberman, organisations should use automated IT security solutions in order to help IT staff, as these save "time, stress and money".

Survey respondents were also asked how they are trained to use new IT security products. Here, 35 per cent revealed that they train themselves. Just over half said they are taught how to use the product by the vendor, while 12 per cent used a third-party trainer.

One per cent admitted that they ignored the product altogether because they didn't have time to learn how to use it.

NEW COURSES

EBC: Ethernet networks – PTT

PTT has developed a new programme of online courses that cover various aspects of Ethernet LANs.

There are three courses available aimed at those responsible for network installation and maintenance. They include *EBC: Ethernet networks* which gives more detail about the operation of both fixed and WLANs with reference to their address schemes, protocols and security methods.

Among the many topics covered, this comprehensive course will enable delegates to describe the operation of the STP and the advantages of Rapid STP; compare the role of a firewall, proxy server and DMZ in preventing unauthorised access; explain how collisions between transmissions in a WLAN are avoided; compare the topology and advantages of centralised and distributed control Wi-Fi systems; and much more.

The two other courses in the series include *EBA: Ethernet fundamentals* and *EBB: Structured cabling*. www.ptt.co.uk/lanbnet.html

DevOps Awareness Training – AXELOS & IT Revolution

AXELOS and IT Revolution plan to launch a free online DevOps training programme early next year. *DevOps Awareness Training's* content is based on the recently launched *DevOps Handbook* co-authored by IT Revolution founder Gene Kim.

The training will combine a professional syllabus and interactive modules, supplemented by blog posts, podcasts and other content.

AXELOS is the global custodian of the service management framework, ITIL. It says that the new DevOps course will be reinforced by its knowledge in the field of ITSM as described in ITIL.

The partners claim the training will create invaluable opportunities for improving the way IT services are provided. www.axelos.com/devops

How Cool Are You...

Clever Cooling Solutions

designed for data centres

With a wide portfolio of Evaporative Free Cooling options, Munters' team of data centre specialists can provide comprehensive design support to data center cooling engineers.

- Comprehensive design capability
- Sophisticated design software - detailed financial and thermal performance predictions (inc. hourly energy consumption for the full year, based on predictive weather data).
- Configurable systems
- Proven installations across the globe
- Energy efficiency

TALK TO US ABOUT

- Data Centre Cooling
- Indirect and Direct evaporative cooling solutions
- Make-up air and humidity control systems
- Selection software
- Testing, Service and support

New!

Visit the Munters Data Centre Academy video lectures web page on Air-Cooled Data Center Design through to Indirect Evaporative Cooling Principles using Munters Heat Exchanger technology or scan the QR code to go direct to YouTube playlist

www.munters.com/dcacademy

www.munters.com/datacentres

E-mail: datacenters@munters.com

TRADE ONLY

19" FLOOR CABINETS



EcoNetCab

Available
600x600
600x800
800x800
600x1000
800x1000

18U from **£203** 36U from **£282**
22U from **£233** 42U from **£300**
27U from **£259** 47U from **£370**

Assembled in the UK
Next Day Delivery

305M BULK CAT5e & CAT6

CAT5e PVC Solid (Grey) **£36.95**
CAT5e LSZH Solid (Purple) **£39.95**
CAT6 PVC Solid (Grey) **£56.95**
CAT6 LSZH Solid (Purple) **£58.95**

PVC
LSZH
CAT 5e
CAT 6
External

25 YEARS WARRANTY **BOX 305M**
LMS DATA

- 24AWG CAT5e / 23AWG CAT6
- Fast Feed Box & Metre Marked
- 4 Unshielded Twisted Pair (UTP)
- EIA/TIA 568 B



LMS DATA

PATCH CORDS

	CAT5E	CAT6
0.5m	£0.20	£0.48
1.0m	£0.30	£0.60
2.0m	£0.45	£0.79
3.0m	£0.65	£1.09
5.0m	£0.99	£1.49
10.0m	£1.87	£2.87

Available
Grey / Green
Red / Purple
Blue / Orange
Yellow / Pink
Black

- 100% Copper
- Stranded Cat5e for flexibility
- Injection moulded strain relief boot
- Ideal for Gigabit Ethernet Networking

PATCH PANELS

	CAT5E	CAT6
1U 24 PORT UTP (HORI)	£7.60	£8.49
1U 24 PORT UTP (VERT)	£16.65	£23.40
1U 24 PORT STP (VERT)	£17.55	£25.50
1U 48 PORT UTP (VERT)	£25.80	£35.80
2U 48 PORT UTP (HORI)	£15.95	£21.90

- TIA-EIA-568A/B2.1
- Quality pressed steel construction
- Gold over nickel plated contacts
- KRONE Compatible

LAN SWITCHES



Dynamode

Product Code	10/100 Switches	Price
SW50010-D	Dynamode 5 Port SOHO 10/100 Switch N-Way Desktop	£4.00
SW80010-D	Dynamode 8 Port SOHO 10/100 Switch N-Way Desktop	£5.00
SW160010-R	Dynamode 16 Port 10/100 Switch N-Way Rackmount	£20.15
SW240010-RV	Dynamode 24 Port 10/100 Switch N-Way Rackmount	£23.00

Product Code	GIGA Switches	Price
SWG50010-D	5 Port Gigabit Switch - Desktop	£11.50
SWG80010-D	8 Port Gigabit Un-Managed N-Way Switch Desktop	£14.50
SWG240010-R	24 Port Gigabit Un-Managed N-Way Switch Rackmount	£64.00

WALL CABINETS



- Colour : Black
- Shelf included (9/12/15/18/21U)
- Removable side panels
- Bag of M6 Cage Nuts

6U from **£34** 15U from **£64**
9U from **£48** 18U from **£78**
12U from **£61** 21U from **£85**

450mm & 550mm Depths Available



PCMCIA
Wireless 802.11n
PCMCIA
300Mbps
£9.10 +VAT



USB WIFI
Wireless 802.11n
USB Adapter
Mini Size
£3.50 +VAT



PCI WIFI
Wireless 802.11n
PCI Card
300Mbps
£8.50 +VAT



USB WIFI
Wireless 802.11n
USB Adapter
3dB Antenna
£5.50 +VAT

HDMI CABLES

1.5m HDMI-HDMI w/Eth&ARC **£1.10**
1.8m HDMI-HDMI w/Eth&ARC **£1.67**
2.0m HDMI-HDMI w/Eth&ARC **£1.77**
3.0m HDMI-HDMI w/Eth&ARC **£2.06**
5.0m HDMI-HDMI w/Eth&ARC **£2.57**
10m HDMI-HDMI w/Eth&ARC **£6.61**



VGA CABLES

1.5m SVGA M>M & M>F **£1.10**
3.0m SVGA M>M & M>F **£1.66**
5.0m SVGA M>M & M>F **£2.57**
10m SVGA M>M & M>F **£4.31**
20m SVGA M>M & M>F **£9.95**
30m SVGA M>M & M>F **£12.11**

HDMI SPLITTER

2 Port HDMI Splitter Hi-Speed **£17.22**
4 Port HDMI Splitter Hi-Speed **£27.78**
8 Port HDMI Splitter Hi-Speed **£54.44**

EURO MOD



£0.56 +VAT

EXTEND YOUR WIFI SIGNAL

Extensive Range of Omni & Yagi antennas

IP CAMERA with WiFi



FROM £29.50 + VAT
QUANTITY ORDERS WELCOME!

Call Our Sales Team On **0845 375 2128**

With Next Day UK Delivery on 99% of all stock items and a dedicated customer focused account manager - you've got to give us a go!