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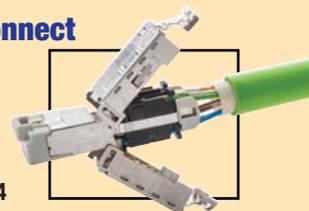
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'State-of-the-art' public Wi-Fi network planned for the City

by Paul Liptrot

Lampposts and street signs will be fitted with new wireless equipment in a project to boost the strength and coverage of public Wi-Fi in the City of London.

Work on the new network will begin in June and replace the current free Wi-Fi service provided by the Cloud. No details about the costs and technology to be used have so far been revealed. But in what's described as the single largest investment in wireless infrastructure ever seen in the City, more than 400 small cells will be fitted to street furniture and buildings over a 24-month period by a supplier which will be named within weeks.

According to the City of London Corporation, "state-of-the-art" equipment will provide gigabit speeds over a free Wi-Fi network in the Square Mile that

will be able to handle high bandwidth services like video on demand for the first time. It claims the network will surpass the service currently available in another major global financial centre, New York.

Although the City of London has just 8,000 residents, it has 400,000 workers and attracts 10 million visitors annually. But its tall buildings and narrow, historic streets mean that mobile service in some areas is unreliable. Citing data from an Ookla online speed test conducted in 2015, the corporation says London ranks 26th out of 33 European capitals in terms of broadband speed.

It believes ICT is set to become a more significant competitive issue, and that city centres with enhanced connectivity will attract more investment. The new Wi-Fi

service will also pave the way for easier adoption of 5G which is expected to be launched by the end of this decade.

In addition, the corporation is taking steps to speed the process for businesses of gaining digital connections, including a standard legal wayleave document.

Other UK cities that are also developing public Wi-Fi include Glasgow. There, the first phase of the city's *Urban Wireless* programme has seen 50 APs installed around busy areas and transport hubs through a partnership between the council and BT. Cardiff has a similar scheme, also with BT, while Birmingham has free Wi-Fi supported by Virgin Media.

Edinburgh has just launched its *EdiFreeWiFi* service by awarding a 10-year concession contract to *intechologyWiFi* which has been granted exclusive use of the council's street furniture and properties to locate its equipment. It is the final project in the *Connected Capital* programme which aims to make Edinburgh one of the best-connected cities in Britain.



The City of London Corporation says the Square Mile will offer a free wireless network to rival the world's best financial centres.

In the City of London's rival, New York, free Wi-Fi is offered in adapted phone booths, as well as in parks and libraries. The service is managed by *Intersection*, a firm backed by Google's parent company *Alphabet*. *Intersection* has also teamed up with BT in the UK for a similar project. ■

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Manchester set to become UK's "number one" tech city?

UKFast is aiming to threaten London's dominance in the data centre market with a £2.3m upgrade at its complex in Manchester. The hosting firm reckons its continued long-term investment will make Manchester the country's number one tech city.

According to UKFast, the enhanced facility is set to offer the region's businesses unprecedented levels of data centre infrastructure. The improvements include a security upgrade to its dedicated colocation space, and the construction of a new high-security, high-density, high-resilience compound within the existing facility.

The firm says this will give the data centre a security standard that is equivalent to IL4 and designed in line with List-X standards. This is primarily to meet the heightened regulation needs of government, financial services, international telecoms, and utilities clients.

"This investment is a massive feather in the cap for Manchester," claims UKFast CEO Lawrence Jones. "Previously, firms had to collocate their hardware in London if they wanted this level of infrastructure."

He adds that the company is continuing to extend its high-security offering to the government, and that there is a consensus that Whitehall should be hosting its infrastructure in Britain with local companies.

Commenting on November's Autumn Statement which saw the government pledge up to £1bn in digital infrastructure investment, Jones says: "The commitment from the government is a step in the right direction, although we'd like to see heavier investment in digital across the UK. We're taking it on ourselves to deliver the latest infrastructure for the tech community, making the choice for the government an easy one." ■



The firm's first data centre in the UK will cover 4,000m² and offer a capacity of 40,000 servers.

OVH to open three UK data centres

France-based cloud specialist OVH has chosen the "inner suburbs of London" as the location for the first of three data centres planned for the UK.

The company says it cannot reveal the precise location of the facility at this stage, but expects it to be operational by the end of May. OVH adds that it has had a presence in the UK since 2007 via a subsidiary based in London which is located a "few kilometres" from the future data centres.

The first centre will cover 4,000m² with no colocation space. It will have a capacity of 40,000 servers and interconnected to OVH's point of presence at LINX through a double fibre path, creating redundancy. The company says the facility's proximity to two substations makes it possible to provide high electrical capacity on site.

The two other data centres OVH plans to set up in the UK will provide users with a backup solution. The second site will be on

the outskirts of London, while the company says the third one will be "sufficiently remote" to be a recovery site outside the failure domain of the two other sites.

As with all OVH data centres, the UK sites will be interconnected through the vRack, a private network developed by the company to facilitate the deployment of multisite infrastructures.

Via the London PoP, the new facility will benefit from a direct connection to OVH's data centres in Gravelines, northern France (then Roubaix and Paris), Amsterdam (then Brussels and Frankfurt), Montreal and New York, through a global, low latency, 7.5Tbps fibre network.

By the end of 2017, OVH plans to have constructed new data centres in the US, Italy, Spain, the Netherlands and in Germany where it has recently acquired its first site near its PoP in Frankfurt. ■

First start-ups join GCHQ Cyber Accelerator

Seven cyber security startups have been selected to join the new GCHQ Cyber Accelerator which officially launched earlier in January 2017.

The accelerator is a partnership between GCHQ, the Department of Culture, Media and Sport (DCMS), and Wayra UK (see News, Nov 2016) which is part of Telefónica's global Open Future network.

The seven companies selected to join the programme include: CounterCraft; Cyberowl; Cybersmart; FutureScaper; Spherical Defence; StatusToday and Verimuchme.

They will now begin a three-month development programme to help scale all aspects of their businesses. This includes mentoring, contact with an extensive investor network, office space within the new GCHQ Cyber Accelerator, and access to GCHQ's personnel and technical expertise.



DCMS minister Matt Hancock said the government is putting £1.9bn into putting the UK at the forefront of cyber security.

The new accelerator forms part of the Cheltenham Innovation Centre, the first of two such facilities to be created as part of the Government's National Cyber Security Programme. A second innovation centre will open in London later this year.

The government is contributing up to £50m over the next five years to deliver the two facilities. DCMS minister Matt Hancock said: "This is an important step in delivering our National Cyber Security Strategy, and supported by £1.9bn transformative investment in cyber security." ■

IGEL helps HMV tune in to the sweet sounds of cash savings

HMV Retail has completed a project to install hundreds of IGEL's *Universal Desktop 2 (UD2)* terminals throughout its 129 stores and warehouses in the UK.

The deployment is part of the firm's wider programme to refresh and upgrade its entire IT infrastructure, save money, and invest for the future after it exited administration.

Since being purchased by Hilco Capital in 2013, HMV has been carrying out various initiatives to achieve this, including shifting some of its services to a new data centre provider and migrating to a hybrid cloud-based solution, and upgrading to a more modern VDI Citrix environment which has enabled it to reduce its server count from 50 to six.

As part of the Citrix upgrade, HMV had to replace all its desktop thin client terminals which were more than 15 years old and not compatible with the new software. The company bought 800 UD2 terminals, supplied by IGEL reseller Trust Systems. 760 have been installed while 40 have been kept for backup and other purposes.

Described as "super power efficient", the UD2s use 5W per hour compared to other devices which are said to consume as much as 45W. Trust Systems MD Nick Potts says: "When we reviewed products for HMV,



HMV has 129 stores in the UK, and typically two stores per engineer were upgraded each day.

our analysis showed that they could save more than £45k on electricity over a three-year period using UD2 terminals versus product from a well known competitor."

Staff use the new terminals to access standard Windows applications via Citrix and an in-house developed stock management solution which also provides a variety of analytic and reporting features.

The IGEL devices can also be remotely managed using a central console – an important factor for HMV given that it has stores located from Cornwall to Inverness and beyond. ■

Atkins to procure for Gigaclear

Gigaclear has chosen design, engineering and project management consultancy Atkins as its procurement partner.

Gigaclear's aim is to build and operate ultrafast, pure FTTP networks in rural Britain. Since being founded in 2010 it has delivered broadband to more than 35,000 properties across Berkshire, Buckinghamshire, Cambridgeshire, Essex, Hertfordshire, Gloucestershire, Kent, Leicestershire, Lincolnshire, Northamptonshire, Oxfordshire, Rutland and Worcestershire.

As part of a deal valued at around £250,000, Atkins will focus on supporting Gigaclear's work in south-west England. This follows an announcement made in December by *Connecting Devon and Somerset* that it had selected Gigaclear to

deliver ultrafast broadband to more than 35,000 homes across the two counties as part of its phase two rollout. Atkins will be responsible for negotiating framework agreements with the Tier 1 contractors needed to deliver the new network which will require the installation of around 5,300km of fibre.

Gigaclear builds networks using commercial investment but it has also been awarded contracts as part of the government-subsidised BDUK (Broadband Development UK) programme. The partnership with Atkins could also be extended to cover future contract wins as the company looks to expand its involvement in other government-backed broadband delivery projects. ■

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THE WORLD ACCORDING TO...

Kevin Timms, COO & co-founder, Streamwire

SMEs must better understand the cyber security threat in 2017

In the past year, it seems a day hasn't gone by where a high-profile cyber breach is documented in the media, and it's likely that this will see no slowdown in the year ahead.

But at the same time, this has often overlooked the difficulties that smaller organisations face, particularly on limited resources or having smaller IT support teams whose main activity is to keep basic systems functioning, rather than understanding the cyber security threat.

This has caused SMEs to become highly susceptible to cyber breaches as hackers face less resistance in compromising systems and stealing valuable data. Increasing understanding throughout the hierarchy of an organisation and avoiding relying exclusively on outsourcing their security to a third-party can offer an initial stepping stone in improving cyber security in 2017.

While SMEs have had a tougher time adjusting to the issues of cyber security, Tenable Network Security's 2017 report found that UK security professionals' confidence in accurately assessing cyber risks has fallen from 73 to 59 per cent

since 2016. The research also found that the biggest challenges facing IT security professionals today included "low security awareness among employees" and a "lack of network visibility" due to BYOD practices and shadow IT.

As SMEs seek innovative approaches such as BYOD to help stand out from the crowd, this is resulting in poor network visibility causing another layer of cyber security complications. Encrypting BYOD devices and guaranteeing that they are as secure as other systems in an organisation can help solve the visibility and security issues here.

With constant threats lurking around the corner, organisations must be quick to understand the cyber security issues facing them, otherwise they could see systems breached or even having customers look elsewhere to better cater for their security needs.

Cyber security is an issue that is here to stay, and addressing SMEs innovative approaches to businesses will play a significant role in helping to increase their confidence in it.

Businesses must monitor "complex and volatile" internet performance

A lack of network visibility has made it difficult for businesses to pre-empt and resolve any issues as quickly as they need to, according to research by Dyn.

In a survey of 100 senior IT professionals in UK organisations, the internet performance management specialist found that 57 per cent of the internet disruptions they experienced in the past year occurred outside their network control. The study also revealed that it takes UK organisations nearly twice as long to identify and resolve an internet disruption compared to US organisations

When asked about the biggest impact of a disruption, nearly a third cited loss of revenue, and nearly a quarter said they would expect a loss of new business. Yet despite this, Dyn discovered that just four in 10 monitor their network activity and identify patterns.

The company's EMEA MD Paul Heywood says it's time for companies to realise how important visibility into the performance of the "complex" and "volatile" internet is. "As the IoT continues to gain speed, and as more organisations move their workloads to the cloud, the internet is becoming an even more complex and unpredictable environment for businesses to control and navigate."

Heywood says businesses must gain a complete picture of their network and how it connects to the wider world. He advises them



According to Dyn's research, a third of UK organisations find it "extremely" or "very difficult" to resolve an issue outside their network control.

to invest in data and analytics solutions that measure the performance of the internet and cloud vendors. He also recommends they add secondary DNS solutions to help mitigate risks and ensure business continuity.

"Those companies that take these steps now will be able to identify and resolve any disruptions much more quickly and ultimately develop digital resilience to gain a competitive advantage," concludes Heywood.

Managing and monitoring data centre LANs - feature pp11-13.

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Hertz connects cars with IoT connectivity from Orange

Hertz will use IoT connectivity to support its hourly vehicle rental service.

The Hertz 24/7 vehicle rental service provides companies with technology-enabled pool fleets that can be deployed in one or multiple countries where the company operates. The keyless cars can be booked by employees over the phone, online, or via an app, and can be picked up at any time, for any duration and from convenient locations

The service also operates through retail partnerships with Costco, B&Q and IKEA in the UK, as well as other retailers in other European countries. Vans are placed at the stores' parking areas and can be rented by the hour for customers to conveniently take their purchases home.

Under a three-year contract, Orange Business Services (OBS) will provide IoT connectivity for Hertz across seven European countries: Belgium, France, Germany, Italy, Netherlands, Spain and the UK. The connectivity provides voice services from the vehicles, which means customers now have a direct line to the Hertz contact centre. Previously, each country had to use local operators to provide the SIM cards.

The deal enables Hertz to centralise service management and the management of its fleet's SIMs with one global communications provider. The company



In the UK, the Hertz 24/7 vehicle rental service also operates through retail partnerships with Costco, B&Q and IKEA.

adds that IoT technology paves the way for new innovative services in the future.

OBS says its IoT connectivity service is part of its *Datavenue* modular IoT and analytics solution. To enable advanced analysis and decision-making, it claims *Datavenue* encompasses the selection of relevant information and objects, their reliable and secure connection, and their management in the customer information system environment. ■

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Nomad Digital acquired by Alstom

France-based transportation company Alstom has purchased fleet and passenger connectivity specialist Nomad Digital for an undisclosed sum. Previously owned by Amadeus Capital Partners and other investors, Newcastle-based Nomad employs around 230 people across 13 offices worldwide. Alstom says the firm brings complementary leading edge products and solutions, as well as a strong global customer footprint that will help accelerate its own vision of the "Digital Train". It has now begun integrating Nomad Digital into its own group whilst ensuring that Nomad Holdings operates as a wholly-owned subsidiary, retaining its brand and independent identity. ■

GCI gains Freedom

Managed IT services company GCI has acquired Hertfordshire-based unified communications firm Freedom Communications for an undisclosed sum. This latest move follows GCI's purchase of cloud specialist Outsourcery in mid-2016. According to the firm, UC, cloud, compliance and security represent the "big four" in digital transformation. It says that alongside its considerable experience, Freedom Communications adds another 40,000+ *Skype for Business* seats to its own Microsoft UCaaS arm taking GCI to more than 180,000 *Skype for Business* seats overall. Another driver for the deal is Freedom's expertise in the public sector where it is listed on nine of the 11 lots of RM1045 Network Services Framework. ■

BT "declares war" on nuisance calls

A free new service has been launched that enables BT's home phone users to divert unwanted calls to a junk voicemail box. The firm says it is "declaring war" on the companies that regularly pester its customers with nuisance calls about PPI, personal accident claims, etc.

BT's *Call Protect* service combines network intelligence with the ability for customers to control the calls they receive, either from the home phone or online.

The telco claims the launch of the new service has been made possible by a technological breakthrough that has been achieved by harnessing huge computing power to analyse large amounts of live data.

BT says this analysis enables network experts at its centre in Oswestry in Shropshire to identify rogue numbers – typically those that make enormous

	Category	Volume	Proportion
1	Accident claims	12,288,022	39%
2	PPI	2,903,946	9%
3	Computer scam	2,673,665	9%
4	Personal data request (scam)	1,434,890	5%
5	Silent calls	987,989	3%
	Other	10,917,635	35%
	Total	31,206,396	

BT has published call figures for the seven days from 13 to 19 December 2016 to illustrate the top five worst nuisance callers by category.

numbers of calls – and to add them to a blacklist. *Call Protect* is said to work proactively to divert calls before they even

reach a customer. BT says this is unlike reactive blocking where the customer has been troubled and where the numbers used by nuisance callers are changed frequently to avoid detection.

The company reckons this proactive intervention will drastically reduce the number of nuisance calls customers receive. It says recent data shows that it could divert up to 15 million calls a week from personal accident claims and PPI companies alone.

The BT blacklist aims to divert the top offending nuisance callers. For calls not captured by the technology, customers will be able to compile their own blacklists by adding individual unwanted numbers. They can also set *Call Protect* to divert whole categories of calls, such as international calls or those from withheld numbers, into the junk voicemail box. ■

hSo gets down to business with new WAN for Companies House

Companies House has selected managed network services provider hSo (HighSpeed Office) to support its objectives around the delivery of effective and efficient digital services to customers.

Companies House is an executive agency sponsored by the Department for Business, Energy and Industrial Strategy. The organisation has made it its mission to establish a truly open register of business information by offering free data access to users on more than 170 million digital records on UK companies and directors.

As a result, the agency issued a tender for a revamped network connecting its main office in Cardiff to four other locations: London, Edinburgh, Belfast and Newport. Not only

did the new WAN have to be resilient, it also needed to be cost-effective to align with the organisation's efficiency plan.

Companies House also wanted to upgrade its existing MPLS network. Furthermore, as it is now using AWS public cloud to store, access and share data, it needed to add a private cloud connectivity service to ensure maximum security, cut costs, and provide a more consistent network experience.

hSo won the tender to design and deploy the five site data network. It provides a direct connection to AWS from its data centres, and claims to have extensive experience delivering and supporting data connectivity services, based on its own MPLS core network. hSO is also one of the few SMEs to be appointed



Companies House needed a revamped WAN connecting its main office in Cardiff (pictured) to sites in London, Edinburgh, Belfast and Newport.

to the government's one-year-old Network Services Framework (RM1045).

Steve Pitt, head of procurement at Companies House, says: "hSo understood our challenges and have worked with us to implement a robust and resilient dual-carrier WAN solution that can cope with increasing capacity demand whilst ensuring the data is completely secure." ■

RMD chosen for NEUPC data centre framework

RMD has been approved to supply, install, and maintain data centres for members of the North Eastern Universities Purchasing Consortium (NEUPC).

The firm has been appointed to the consortium's Data Centre Management Equipment and Infrastructure framework, which runs until September 2017.

The framework comprises two lots: data centre equipment (UPS, cooling equipment, generators, gas and fire suppression systems, PDU and consultancy); and data

centre infrastructure (server and network racks, cabinets, blanking panels, building management equipment, and consultancy).

The framework was designed by IT and telecoms procurement experts from higher education institutions and is compliant with EU procurement law. Institutions using the framework do not need to carry out a full EU tender, saving them money, time and resources.

Alloa-based RMD specialises in integrated power and cooling solutions, and was

formerly known as RMD Power and Cooling. Established since 1993, its clients include GlaxoSmithKline and AutoTrader, as well as customers in the higher and further education sector such as Edinburgh Napier University and the Royal College of Surgeons.

MD Gavin Maxwell says: "Our experienced team understand the needs of universities and colleges, and so are well placed to help institutions to deliver successful and sustainable projects on time and on budget." ■

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VIEW FROM THE TOP

Nic Lemieux, ICT director, Canonical

How CSPs can effectively virtualise their networks through the cloud

Before virtualisation became commonplace, every server had a single OS and was connected to legacy switch ports. Network control was managed at an individual switch level, and components throughout the infrastructure were locally and individually run.

This caused two problems – the control of the network equipment was tied to each device, and it was also inflexible.

The industry is now migrating from function-specific network hardware and will be using SDN and NFV. The premise of these technologies isn't new, but their expanding uses in the telco industry are.

Because communication service providers (CSPs) deliver critical services and cannot compromise quality standards or SLA commitments, the technology principles that work for IT cloud applications cannot be applied to network services without accounting for carrier-grade requirements.

CSPs require a broad ecosystem when embracing these technologies and the benefits they provide. As the economics of traditional data centre networking becomes less desirable, SDN and NFV solutions offer both opex and capex relief.

An overlay SDN allows IT teams to create their own data centre network on top of existing infrastructure without modifying any hardware – particularly valuable in telecoms clouds where multiple tenants need network independence.

A well-designed cloud gives you rapid scaling, dynamic deployment and workload bursting beyond your premises. All of these capabilities can be employed by SDN and NFV infrastructure, but realising the economic and technical benefits of a cloud requires standardisation and repeatability. CSPs should have a solution that makes it easy to interchange, integrate or update specific components, without the need for expensive consultants, complex static scripts, or redeployment of the solution.

Overall, SDN offers benefits in flexible configuration options and improved methods of data routing. But applications need to work well in various SDN environments, and Big Data, analytics and other cloud-based solutions must be compatible with today's network infrastructure. When creating these environments, testing against multiple different SDN solutions with various different workloads is useful.

The transition from single function, proprietary devices to commodity, software defined infrastructure is a natural one. Economics have driven it, technological advancements have enabled it, and soon it will become impossible to remain competitive without SDN and NFV infrastructure. And, as telcos of all sizes choose open systems, standards and interoperability as a fundamental, we are poised on a precipice of open source cloud deployment.

Bolton NHS improves patient care with Citrix

Bolton NHS Foundation Trust has deployed Citrix technology to reduce costs, improve patient care, and allow medical staff to access data and applications from anywhere.

As well as working from the hospital, the trust's clinicians and support staff tend to work around the clock from a variety of locations across the Bolton area, such as patients' homes or out in the community. But as the trust didn't have a mobility solution, staff were not able to access hospital resources externally. This also meant that if specialists were not available on site, critical diagnoses and patient care decisions could be delayed.

To address these challenges, Citrix's *XenApp* and *XenDesktop* have been deployed to deliver virtual apps and desktops. Within trust premises, clinicians can access their apps and desktops using thin clients. These use single sign-on technology and RFID readers that allow

users to tap their identity badges to instantly access desktop sessions. Doctors running clinics in local healthcare centres can also access the same desktop they use in hospital on a personal PC, tablet or smartphone.

Furthermore, the trust's IT team now has to manage only a single desktop image rather than many desktops on individual machines. It can also centrally manage policies, profiles, security, software upgrades, and patch management in the data centre.

"Another obvious gain is from a data security point of view," adds Dr. Simon Irving, consultant acute physician at the trust. "People used to leave their sessions 'open' as logging in and out took too long to be efficient in an acute medical environment. Now, the ease of logging in and out of personal desktops discourages staff from leaving their sessions active."

ICT solutions in the health industry – p8.

Converged services will help manage cloud complexity

Converged services will play an increasingly important role as IT priorities within UK organisations change, according to research by Six Degrees Group (6DG).

In a survey of more than 500 mid-sized UK organisations, the technology infrastructure provider found that instead of focusing purely on cost savings, IT leaders are now aiming to minimise cloud complexity and fragmentation of IT systems to deliver greater business value.

The study revealed that a mixture of three key factors are shifting in focus from cost to value: 57 per cent of respondents are working to simplify IT infrastructure; 44 per cent are reducing time spent on IT operations to free up internal resources; and 44 per cent are better exploiting their suppliers in an effort to leverage external resources.

However, while around two thirds are already making extensive or significant use of hosted or managed services to help them achieve these goals, 6DG warned that this is creating a complex challenge. Thirty-five per cent reported

that they have contracts with more than five providers, and within this group 60 per cent reported that they were suffering from "cloud fragmentation and disjoints". This can include inconsistent security and access models, limited functional integration between services, as well as issues around end user support and SLAs.

In response to these challenges, 65 per cent said that providers who aggregate multiple services into a single integrated solution have a key role to play.

Campbell Williams, 6DG's group strategy and marketing director, says: "We know that the provision of cloud computing is making a profound impact on the way mid-market businesses operate, but we can now also see those with a focus on delivering value recognise that integrating key cloud services is a vital part of a successful strategy."

6DG's Campbell Williams believes the use of converged services goes hand-in-hand with a modern value-centric view of IT delivery.



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ArrowSphere offers F5 Cloud

Arrow Electronics can now offer managed service providers (MSPs) authorised distribution of F5 Networks cloud services. This follows its registration to F5's Cloud Licensing Programme (CLP) which can be accessed in 26 EMEA countries.

The CLP is now available via Arrow's Cloud *ArrowSphere* marketplace. This allows MSPs to create their own cloud services or to re-sell cloud services by vendors such as F5. The CLP comprises the virtual versions of F5's *Big-IP* appliances and its 'Good-Better-Best' simplified licensing model which MSPs can use to offer their customers complete cloud solutions.

Arrow says MSPs who are providing their customers with 'As-You-Use Service' models can now utilise F5 solutions in the same manner. It says this means they

no longer need to make upfront capital investments on behalf of their clients. They may either select those services required by their business model or leverage the entire F5 cloud offering. With 'Bring-Your-Own-Licence' and special volume conditions (volume licensing subscription), it's claimed the programme offers flexibility.

Arrow adds that an app-centric strategy helps organisations maintain control over applications in the cloud. "By extending the same availability, performance and security services across environments (on-premise, public cloud, private cloud or hybrid), organisations can be confident their apps will provide the same user experience wherever they're deployed," states the firm. "The same policies that govern applications in the data centre can be applied in the cloud."

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Finger on the pulse

How the latest ICT solutions are helping to improve the well being of the companies and organisations whose business it is to improve the health of all.

College saves as calls move to the cloud

The Royal College of Paediatrics and Child Health (RCPCH) was founded in 1996 but its roots date back to 1928. Today, it has 17,000 members and 160 staff. Based in Holborn, near Great Ormond Street Hospital, the RCPCH also has offices in Edinburgh, Cardiff and Belfast.

Its staff need to maintain regular contact with members and trainees to coordinate the often time-critical examinations process.

The organisation's infrastructure and operations manager, Olly Rice, says: "Our phone system is one of the primary ways that we communicate with staff and our members. Sometimes the communication needs to be instant, especially for the examinations team, so it's really important

that we can just pick up the phone and talk to someone when we need to.

"There's an immediacy that you get with the phone that you don't get with other forms of communication so we needed to ensure that our telephony system was as reliable as possible, to reduce the risk of outages and to future-proof our systems."

RCPCH had a Mitel system using VoIP over ISDN30. Annodata recommended moving to the cloud for reliability and cost savings. The UC specialist rolled out a new fully-managed and fully-virtualised Mitel communications solution and placed it in the college's existing VMware environment. It has additional layers of resiliency; if one server fails, the service will automatically switch to another.

In addition, says Annodata, RCPCH's line rentals were moved from ISDN30 to SIP. The company says this change has led to significant cost savings, as local and national calls are now free of charge, and has also given the college greater control over its phone numbers.

Rice adds that there has been a marked improvement in service reliability:

"We've got a rock-solid solution, which is exactly what we need. The additional resiliency of the system has been the big key win for me and has brought me a lot

more peace of mind. Another big benefit is that we've now got the foundations in place needed to move forward.

"We're keen to improve our disaster recovery capabilities and explore mobile working, both of which required us to virtualise our telephony systems. We've taken those steps now, which puts us in a very strong position to build in new functionality when the time is right."



Cure found: medical firm makes a success of upgrade

Founded in 1943, Penlon makes and distributes medical devices for anesthesia, intubation, oxygen therapy and suction. From its base in Abingdon, it has a presence in more than 90 countries.

Penlon needed its IT systems to deliver on two main objectives: simplified management and business continuity.

Having previously moved to virtualisation in order to save time and to create a more streamlined and enhanced IT environment, the firm wanted to simplify the management and complexity of its infrastructure whilst guaranteeing business continuity for its customers.

Penlon's IT manager, Tony Serratore, says: "The systems were vastly difficult to manage and when it came to updates we had to ensure everything was in sync. If the system seemed to be working we would not even think about installing upgrades as it was too complex and came with risks. But this wasn't a long-term solution."

The company's choice was to either stay with its current system running the risk of downtime, or look for a new solution that was simple, cost effective and easy to use. "We wanted a solution which would work with us and support our growing business, offering the flexibility and agility we needed," says Serratore.

After reviewing the market, Penlon selected NAS UK, based a short distance away in Wallingford, which suggested Scale Computing. After trialling the vendor's HC3 cluster, it opted for its HC 4000 and HC 1000 cluster.

Serratore says the company can now add capacity as and when needed: "We don't need to over provision and can simply expand our environment when needed."

As well as ease of use, Penlon also wanted less management time. Serratore says the firm's RPO and RTO have now been dramatically reduced from three days to a matter of minutes. "We can now use this time to focus on other IT priorities making a real difference to the business. We have effectively been able to build a data centre in a server room, without cloud-based services. The technology provides servers, storage and virtualisation in one solution with complete transparency."

An app that gives audiences a greater say

NetworkPharma runs conferences and networking events for professionals who specialise in medical communication, publishing and education, generally called 'medcomms'. These meetings range from a dozen participants to 100.

It was an early adopter of Lumi's *IML Connector*, a handheld device which encourages attendees to participate in presentations and share opinions via polls or texting with the built-in keypad. A built-in microphone allows them to participate in Q&As.

As a small company, NetworkPharma does not have the budgets of many firms in the pharmaceutical industry. While managing director Peter Llewellyn says he was happy with *IML Connector*, cost constraints were always a challenge.

He knew of apps that would allow guests to provide their own devices – and would therefore cut the cost of running events – but was sceptical of their practicality. "I've seen quite a number of instances where [meetings apps] don't work in practice because people just can't be bothered to download them or they don't know how their smartphone works – what ends up happening is organisers give out 100 iPads with the app pre-loaded, because they have the resources to do so."

Then Llewellyn saw *Meetoo* in action: "One of the groups I work with had gone with the *Meetoo* app and the tipping point for me was that they estimated 70 per cent of the people at the meeting had engaged with the app."

"What that said to me was that enough of the people in my community were willing to turn up to a meeting knowing how their smartphones work and would download the app and join in."

As well as allowing attendees to interact with presentations instantly via texts and multiple choice polls, moderators can 'push' information to them and collect information to be used either at meetings or afterwards.

Llewellyn decided to use the *Meetoo* app at every event over a year. "It downloads very quickly and it's very simple for people to get involved with. I'm easily getting a majority of the people in my audiences engaging with it now."

At one of his recent events, 45 out of 65 guests used the app to interact with polls. Llewellyn says that another added benefit is that it allows attendees to continue engaging and asking questions even after the event is over, often when he is on his way home.

What's more, now more guests arrive with the app already installed on their smartphones.



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The volumes of data created by businesses make the data centre one of the most important aspects of commerce. As a result, data centre network managers now have increased responsibilities on their shoulders.

PHOTO: SCHNEIDER ELECTRIC

With customers demanding increasingly sophisticated network services, how do data centre operators ensure their own in-house networks can keep pace? JAMES HAYES finds out.

Anyone on a tour of a modern data centre will see scant evidence that these processing powerhouses are at the epicentre of the digital transformation that many businesses are going through across the world. The old indications that something mega was happening behind the scenes have disappeared; the blinking red and green LEDs that used to signal the traffic volumes streaming through are now behind dust-proof panels, and the hum of massed HVAC units has been hushed. Indeed, most data centre interiors are now veritable sanctums of tranquillity – quite a feat given the scale of disruptive forces that these mighty IT estates now enable 24x7.

Andrew Chant, head of networks at Exponential-e, says the volumes of data created by businesses make the data centre one of the most important aspects of commerce. “The network, by default, has become the aorta of the economy. Data centre network managers now have a lot of responsibility on their shoulders – more so than five years ago. Like the doctor who looks after the head of state, it is their vital job to ensure the underlying health of the economy is in top shape at all time – which brings with it a high level of pressure.”

Data centres themselves are poised to become subject to disruptive change. 2017 is set to see the introduction of multiple technologies that will re-accelerate digital transformation, and at the same time unleash

pressures that could cause data centre owners to radically rethink how their facilities are designed, configured and operated. In addition to the continued exponential growth in web traffic and uptakes in cloud migration, for instance, terrestrial data communications infrastructures will increasingly be utilised by mobile network operators to underpin wireless backhaul, as data loads on their bandwidth intensify.

As is well documented, data is booming. Citing forecasts from IDC, Ciena’s CTO EMEA Joe Marsella says the ‘digital universe’ as measured by storage volumes is set to grow to 44ZB globally by 2020.



“Considerable physical – as well as virtual – data centre space needs to be found and managed to accommodate this. Networks also have to manage increased volumes of customer I/O traffic triggered by the rapid growth of factors [such as] the rise of IoT-connected devices, instant video messaging, and streamed content services.”

Of course, this should certainly mean good business for UK data centre operators. But this surging extra demand brings fresh complexities for data centre managers and planners who need to maintain current capacity while trying to calculate future requirements.

US-based Rocket specialises in software that enables IT professionals and enterprises to run their most critical applications, business processes and data. John Proctor,

“The next generation of services for analysis not only interrogates the technical environment, but also maps this to application priority.”

*Don Mac Millan,
GM, data centre business,
Dimension Data UK*

the company’s EMEA VP of sales, says: “Workloads are evolving, shifting, and growing at an alarming rate. Similarly, services can equally disappear overnight. Data centre capacity planning is harder than it has ever been, and making capital expenditures often presents huge risk if the workloads do not persist, or never expand to begin with.”

While high-end data centre operators may feel confident that redundant capacity and facility build-outs will empower them to service demand into 2017 and beyond, the escalating demands being made on data centres of whatever tier level spell other challenges on top of capacity provisioning. Data centres’ internal networked systems – the systems the facility’s engineers rely on to run operations – also have to be up to coping with the booming data volumes and inevitable complexity creep.

Internet of complexity

Independent data centre consultant Alex Rabbetts says that in the past it was okay to be a ‘pure network engineer’ who understood routing protocols such as *Cisco IOS* or *Check Point IPSO*. But nowadays, he says there is greater pressure on network professionals to have a far wider knowledge. “Network professionals need to understand the whole environment from router to UPS, and from Layer 3 switch

to chiller unit, because everything is now networked and ‘talking’ to each other.”

While established infrastructure and management solutions such as DCIM, and now SDN and NFV, have been designed for exponential growth and facility systems integration, some industry observers are asking if they are up to coping with hikes in both volumes of traffic and degrees of complexity as new services sear a trail to the data centres’ communications portals. The question is whether these worthy concepts can still ‘cut it’ for data centres that, some aver, will have to be fundamentally rebuilt if they are to remain fit for purpose.

Most industry watchers concur that it is the IoT network and application rollouts expected this year that could create the biggest demand surge for data centres, especially those in countries where ambitious large-scale pilots (such as the EC’s *Horizon 2020* programme) are scheduled. At the same time, mobile operators and vendors such as Vodafone and Ericsson are racing to introduce their IoT communications products over the top of existing licensed wireless network infrastructure, while solutions providers utilising unlicensed bandwidth options have been building-out separate services. All parties know that, in contrast to traditional tariffed mobile services that were introduced over a period of years, IoT ventures have to quickly gain massively wide-scale utilisation to secure sound commercial viability.

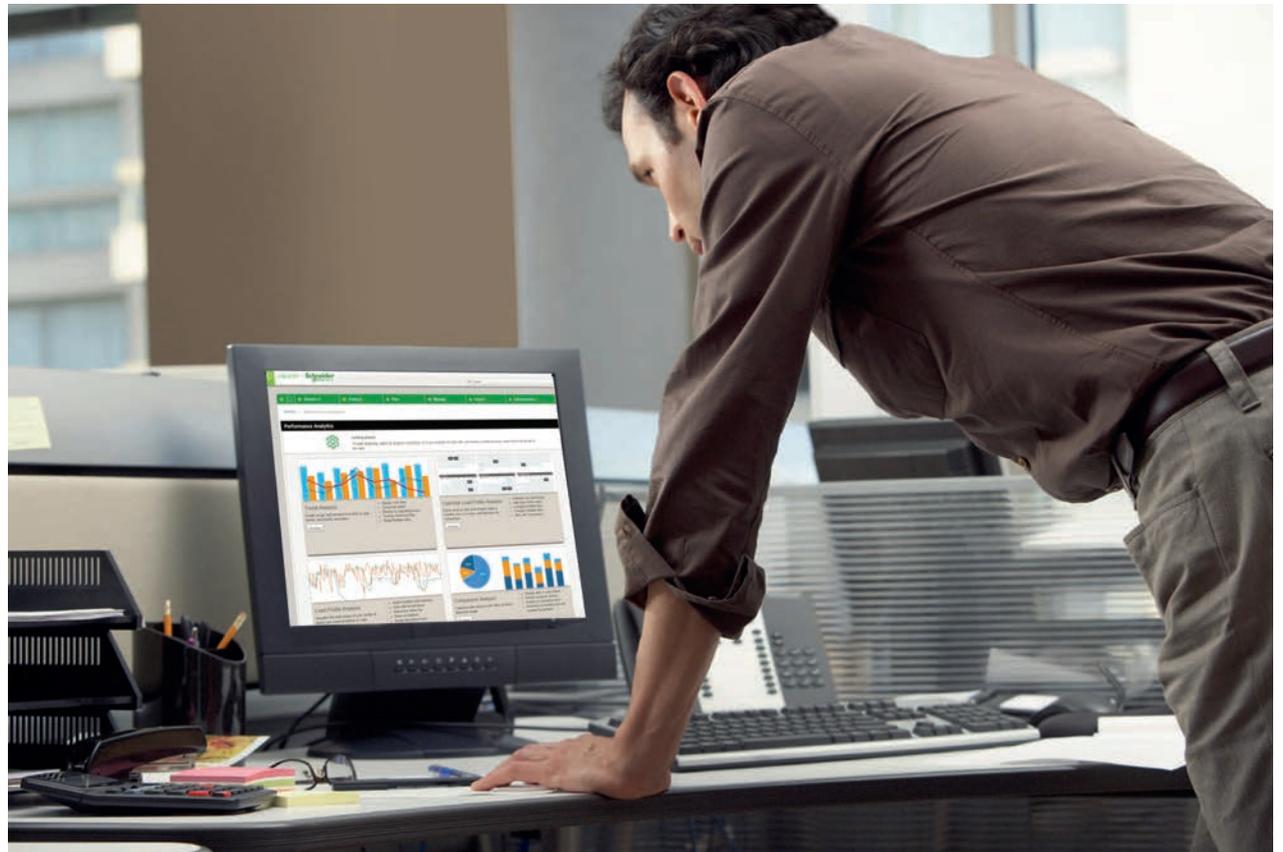
The impact of a burgeoning IoT on data centres has been a known challenge for at least the last two years. As Gartner research director Fabrizio Biscotti pointed out in 2014: “IoT deployments will generate huge quantities of data that need to be processed and analysed in real-time.”

The number of devices, combined with the volume, velocity and structure of IoT data, will create unprecedented challenges for all aspects of data centre operation. Biscotti went on to warn that because processing large quantities of IoT data in real-time will increase as a proportion of data centre workloads, data centre managers will face new security, capacity and analytics challenges because real-time business



“Only complete integration of both DCIM and SDNs will result in 100 per cent network availability and predictive optimisation in case of physical failures or power outages.”

Stefano D'Agostino,
Software solutions business manager,
data centre,
Schneider Electric



According to Schneider Electric, DCIM has become a very generic term and applications now provide a multitude of functionalities – from electrical and mechanical infrastructure management, down to IT optimisation and network management.

PHOTO: SCHNEIDER ELECTRIC

processes will be at stake. As a result, his advice to data centre managers is to deploy more forward-looking capacity management in these areas to be able to proactively meet the business priorities associated with IoT.

Rabbetts suspects that the IoT’s complexity axis may prove a bigger challenge than that of booming traffic volumes. “I don’t really believe that the challenges data centre network managers face will intensify through growth in cloud utilisation or unified communications. But I do think that the challenges of IoT have yet to be fully understood, and that the IoT could bring a whole new set of [complexities] that network professionals will have to get their heads around.”

With offices around the world, Canada-based CENX specialises in service assurance software solutions for mobile, fixed and cloud data centre service providers. The firm’s development head Paul McCluskey suggests a concomitant challenge facing data centre managers in dealing with the diverse set of architectures needed to deliver services. “There are still traditional applications where users access software and datasets running on servers in the data centre. However, the data centre software is increasingly talking to a cloud-based PaaS or IaaS, or a user is accessing a cloud-based SaaS application that might be drawing some information (such as by an API) from the enterprise data centre; or an application in one private cloud is talking to another application in another private cloud (perhaps from another service provider) which are both relying upon the enterprise data centre for authorisation, authentication and resources.”

He goes on to suggest that such demands are slowly but surely changing the traditional role of the data centre and, as a result, how it must be managed. This change to the data centre’s ‘job description’ therefore has to be acknowledged and folded into future evolutions.

The need for speed

Whatever reality plays-out over and after the coming 12 months, it nonetheless means that data centre design and configuration will be compelled to change.

Ciena’s Marsella reckons speed of reaction and adoption will become dominating factors. The extended range of service traffic zoomed through data centres will also call for a rethink with respect to how their internal management systems are run. “Data centre managers now need networks that can react seamlessly to spikes in demand, as well as scale efficiently in terms of cost-per-Gbps.”

He reckons SDN has proved itself in this respect: “Through the combination of SDN and next-generation programmable networking equipment, networks can be virtually reconfigured in moments, freeing-up bandwidth for the services where it is needed, as well as cutting the cost of manual reconfiguration of connections.”

Marsella believes that SDN and NFV have become the most highly-anticipated developments in network infrastructure in over a decade. “A software abstraction layer sitting above a set of virtualised hardware resources can transform the way data centres do business – improving service velocity, costs, and business agility.”

For Don Mac Millan, GM of Dimension Data UK’s data centre business, keeping pace with the demands of delivery against the legacy resources available is the top challenge that IT pros face. He says the speed of requirement has overtaken the speed of deployment of new management capabilities in almost every environment, adding that as emerging technologies continue to be adopted, many network managers will face greater challenges. “Their existing tools are unlikely to be suitable for these newly-adopted solutions, and it is doubtful they will have the budget to holistically replace these tools.”

As a result, ‘sprawl’ from additional management point products will occur.

Mac Millan goes on to say that there is a drive in-train by most of the larger infrastructure vendors to either consolidate management platforms or to deliver a ‘manager of managers’ suite. “[This] will simplify the operation of environments that have been historically disjointed without it being a ‘science project’ that takes years to return any tangible benefits.”

He adds that because of software-defined data centres, the management context has shifted from a focus on monitoring to one on actual delivery, automation and orchestration, placing the management at the heart of the service delivery capability. “SDN solutions provide many benefits to an organisation including greater agility with automated operations, improved security through micro-segmentation, potential cost reductions, and providing a mechanism for cross-functional collaboration and orchestration between networking, server, storage, virtualisation and applications teams.”

With that said, is there still a place for legacy DCIM solutions? Mac Millan says yes in certain use cases, but in a reduced capacity where an SDN overlay solution is adopted. “The underlying network infrastructure still needs to be managed but the SDN solution doesn’t have the ability to do so itself.”

Rabbetts agrees that there will soon be a new generation of data centre management tools that will become increasingly important for the data centre manager. He predicts that these will require greater bandwidth allocated to dedicated management VLANs (which some data centre managers do already), so that the data centre infrastructure can automatically regulate itself within boundaries set by data centre managers: “Soon, the cooling, humidity, power delivery and other aspects of the facility will be able to safely manage themselves via a network; and the savvy data centre manager needs to be ready for that [development].”

DCIM days numbered

Opinion is divided around how effective Data Centre Infrastructure Management platforms will prove as the next iteration of data centre design starts to take shape. DCIM gives managers a range of controls over both the computing and network components, as well as over service delivery and quality assurance, including capacity planning.

The use of DCIM tools is elective, and not all quarters of the industry believe that it offers the best way forward given

the welter of challenges such facilities typically will face.

“DCIM has become a very generic term, and DCIM applications now provide a multitude of functionalities – from electrical and mechanical infrastructure management, down to IT optimisation and network management,” says Stefano D’Agostino, software solutions business manager, data centre, Schneider Electric.

He calls for DCIM’s main focus to continue to be based around assets and capacity management for the physical infrastructure in terms of space, power, cooling and networks. “Hence, in my opinion, DCIM on its own is not the right tool to manage and monitor the increasing complexity of SDNs,” says D’Agostino.

Rocket Software’s Proctor reckons DCIM still ‘cuts it’ for basic management requirements. But he warns that if it does not evolve to link and leverage analytics and other business measures, DCIM will be written-out of the picture by application developers collecting data and reporting on them with modern visualisations.

“Data centre managers should be looking to implement dashboard tools such as *Geckoboard* as a way to consolidate KPIs and data across multiple vendors and technologies. It makes no sense to implement a single vendor solution if you don’t have a solid view of the multiple data sources you use as a business.”

D’Agostino argues that for the optimum operation of both data centre LANs and service networks, a balancing act between DCIM solutions and SDN is key. “Only complete integration of both DCIM and SDNs will result in 100 per cent network availability and predictive optimisation in case of physical failures or power outages. It is fundamental that DCIM software

is correctly deployed, implemented and integrated with SDN software controllers. DCIM shall monitor and manage physical assets, while signalling availability risks to predictive network management agents. In this way, the agents can react and reconfigure the network accordingly.”

Rabbetts doesn’t agree. He points out that a management system that is more sophisticated than DCIM is needed, and believes this is not very far away. “DCIM is really an interim solution. It brings together some functionality in managing the IT infrastructure, along with some functionality from the BMS. But it has never really been a great long-term solution. New management solutions will be intelligent, automated and complex, and when implemented well, will make the data centre manager’s life much easier.”

Who – or what – will run the future data centre?

D’Agostino points out that dedicated tools and standards such as Open Daylight and the Open Network operating system are emerging to manage SDNs. “These tools allow complete network management abstracted from the physical layer, and provide quick ways of deploying a reconfigured network with the same simplicity of configuring virtual applications. There is also a trend of increased investment into AI engines that will enable companies to relinquish some (or all) of the network management and optimisation tasks that create intelligent and self-learning algorithms.”

Dimension Data adds that there are numerous tools or services that can

analyse the workload of a particular asset at any point in time. Mac Millan says: “The next generation of services for analysis not only interrogates the technical environment, but also maps this to application priority and to cost models to determine how services are being delivered. They also provide an impact analysis which details if technology investments are improving the service delivery.”

In terms of future directions, many data centre insiders look to new thinking in management tools to ensure that managers are able to retain necessary control without inhibiting the data centre’s potential to service additional business opportunities.

“Investments take time to return their value, and it’s very easy to invest in something that becomes acquired or irrelevant,” says Mac Millan. “In the dynamic market that we are experiencing, there will always be the ‘new breed’ of tools that make things simpler to manage. Unfortunately, these solutions often become the victim of [their own] success, and are acquired by a more-established market brand which can, sometimes, slow down their innovation.”

For Rabbetts, the next-generation of data centre network management tools should focus on intelligence rather than management, and take a holistic approach to the running of the data centre and include every aspect of the infrastructure, both IT and mechanical and electrical.

The tools he describes will be capable of knowing, for example, when a server processing load has diminished, and that it is therefore using less power and producing less heat. “Next-generation intelligent tools will know that the fan



“Data centre managers now need networks that can react seamlessly to spikes in demand, as well as scale efficiently in terms of cost-per-Gbps.”

*Joe Marsella,
CTO EMEA,
Ciena*

belt on an air-conditioning downflow unit needs replacement; that the outside temperature has dropped sufficiently such that free air can be used, requiring only humidification control and filtering. The new tools will be capable of logical decision making based on clearly defined parameters. They will make decisions on behalf of the data centre manager.” ■



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Draka claims installers can now terminate Cat5e and Cat6 cables 40 per cent faster with its two new tools.

The *Tool Fast Keystone Jack* (shown below left) and *Tool Fast Installer Tool* (below right) are the latest in the firm's *Universal Cabling (UC) Connect* system. Used together, shielded and unshielded cables can be terminated with consistent quality in less than 60 seconds, says Draka.

The *Tool Fast Keystone Jack* is compatible with fully shielded foiled twisted pair cables (S/FTP) with diameters of 26 AWG to 22 AWG.

The *Tool Fast Installer Tool* includes a built-in length guide to help installers to strip the cable jacket back 55mm to reveal the twisted pairs. Once the wires have been slotted into the jack and the housing fitted together, the whole assembly is then placed

in the *UC Connect* installer tool. With a squeeze of the handle the tool cuts the wires and crimps them in a single action. The rear cover is then snapped into place and the housing secured using a cable tie.

The firm has also launched a new 19" *Angled Unshielded Empty Patch Panel* for Cat5e and Cat6 cables. It says that the panel's angled design enables easy patch lead management. The foldable panel also incorporates a cable management fitting at the rear. It is also available as a pre-terminated cabling solution.



Named after an ancient Roman god, *Ianos* is a new 19" fibre management system from **Huber+Suhner**. The firm says it chose the name – derived from Janus, the deity that looks both to the past and the future – to reflect the system's ability to improve existing data centres when retrofitted and for its effectiveness in new builds.

Ianos uses Base-2, -8, -12 and -24 pre-terminated cable systems for what is claimed to be best-in-class density, speed of installation and scalability. Huber+Suhner says data rates from 1G to 120G can be "seamlessly" combined for future-proofing and flexibility.

The system is said to offer the highest-possible packing density without

compromising handling, and is scalable so modules can be added as required.

The company says that modules of different application, sizes and connectivity types can be mixed and matched. It adds that colour coding of components and universal adaptors reduce the chance of human error.



Capitalising on increased demand for connected homes, **Excel Networking Solutions** has launched a range of products designed for the residential market.

It says that the rising number of wired and wireless devices and systems in homes is prompting house builders, self builders and student accommodation developers – as well as existing home owners – to install connectivity.

Excel's residential range includes: new 25AWG Cat 6 reduced-diameter cable; flat and mini Cat 6 patch leads; a CATV

splitter, residential telephone panel; a range of AV inserts; FFTx surface mount boxes and faceplates; and the residential SoHo cabinet, the *Verticab*. The company says other products from the existing range are complementary to a residential installation.

While designed principally for the growing home market, Excel says many of the products being introduced are equally suitable for hotel/hospitality markets. And it says an accredited installer can, if required, offer a 25-year warranty.

New features of enclosures from **Middle Atlantic Products** (MAP) are said to allow more devices to be installed, thus saving wall space.

The new *End Cable Chase*, part of the company's *SNE* range, is a full-height, slim enclosure which is said to optimise the space at the end of an enclosure bay by allowing devices usually mounted on the wall to be installed inside. MAP says this adds to security while reducing the amount of wiring needed.

According to the firm, the internal cable duct securely and efficiently routes cables within its 30-inch-wide *SNE* enclosures, ensuring signal performance and system reliability for mission-critical applications and suited to IP, analogue and hybrid security systems.

The *End Cable Chase* has split side panels designed to allow easier



access to the equipment inside. It includes the company's *Lever Lock* system. This is designed to facilitate cable management and small device mounting within the enclosure using tool-free cable management bars and accessory mounting plates.

The top-mounted brush grommet panel is said to provide a clean, organised cable entry method while maintaining critical thermal management to ensure all the components run smoothly.

In addition, MAP says that the internal cable duct – featuring durable plastic cable fingers and a dual hinge front cover – cleanly routes cables exactly where needed, preventing signal failures due to pinched and bent cables. Integrators can patch cables on multiple levels within the enclosure without modifications or causing potential system compromises.

New LC small form connectors mean that more can be packed into the same space, says **R&M**. It has introduced the *LC-QR* (quick release) fibre optic connector which is designed for high concentrations of network connections and offers simple operation.

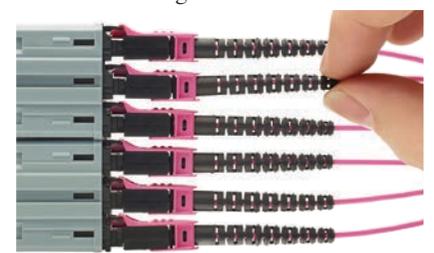
The firm has eliminated the locking clip on the back of most connectors which, it says, restricts packing density in patch panels because a gap must allow access to the clip.

The new *LC-QR* has a push-pull mechanism integrated into the housing. R&M says it can be operated via the rear which means that the user no longer has to grasp right to the front of the connector. It can be locked/unlocked via the boot, and connectors and adapters can be packed more closely.

As a result, R&M says it has also further developed the patch panels with new *Ultra High Density (UHD)* models launched at the same time as

the connectors. They offer 360 ports for 720 fibres on three height units (3U). As a uniboot version for 1.4mm or 2mm cables, the company reckons its new plug is the solution for the reliable handling of this large quantity of cables.

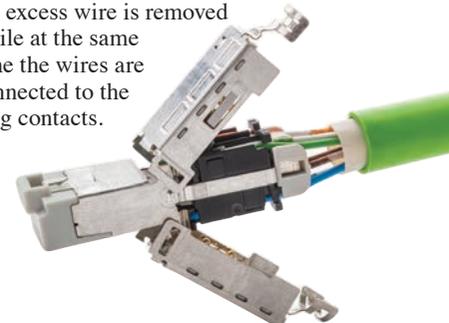
R&M adds that the *LC-QR* can be converted from A-B to A-A in a few simple steps, making ordering and storage easier; just one type is needed to enable configuration of both types of wiring on site. The connector's polarity can also be changed on site.



TE Connectivity (TE) has added a new Cat 6A plug to its RJ45 range. It says the plug can be terminated easily and without tools. It is said to be capable of terminating the most commonly used wire variant Cat 6A, and can handle 10Gbps rates, supporting bandwidths of up to 500 MHz.

As with others in the range, TE says the new plug offers a ruggedised design for use in industrial Ethernet applications. It also has an automatic wire cut-off

function: when the core housing is closed, the excess wire is removed while at the same time the wires are connected to the plug contacts.



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AWS looks to boost cloud skills with re:Start

Amazon Web Services (AWS) has launched a free training and job placement programme in the UK to educate young adults as well as military veterans and their spouses on the latest software development and cloud computing technologies.

The company says one of the aims behind *AWS re:Start* is to help organisations of all sizes and developers of all skill levels transition to cloud computing – even those with no previous technical knowledge can sign up.

Participants who join will complete technical training classes led by AWS certified instructors. The content will be curated by AWS in collaboration with IT training specialist QA Consulting who will also deliver the courses.

Students will learn about cloud computing and how to architect, design and develop cloud-based applications using AWS. They will also learn how to set up new cloud environments using proven best practices in security and compliance, and to build applications using software development toolkits for popular languages, such as Python.

Participants will then complete work experience to gain on-the-job training. Working with QA, The Prince's Trust and the Ministry of Defence, *re:Start* brings together AWS partners and customers to offer placements to 1,000 people.

ARM, Cloudearch, Direct Line Group, EDF Energy, KCOM and Tesco Bank are among some of the organisations that have pledged to offer placements.

According to AWS, successful participants can expect to be eligible for many highly sought after entry-level technical positions within these firms, such as first line helpdesk support, software developer, network engineer, IT recruitment and sales-based roles, *et al.*

The first intake of participants for *AWS re:Start* is scheduled for March 2017. Find out more at <https://aws-restart.com>

TeleWare and Teesside University team-up to develop data knowledge

TeleWare has announced a collaboration with Teesside University to share knowledge and further drive innovation through a Knowledge Transfer Partnership. Through the KTP, the business communications technology specialist says it will work closely with the university's leading academics to create "cutting-edge solutions that answer real business needs".

The partnership will focus on Big Data, machine learning and customer analytics. These are said to be key areas for both organisations in 2017.

TeleWare says machine learning is a large part of its *CX Analytics* platform as the technology can learn best practices and then deliver those insights back into businesses.

The company says it is also increasingly looking at how customers interact with businesses, be it through traditional call centres, social media, web chats or other channels. The KTP examines the best way to collect data from interactions with customers and analyse them to enhance their experiences.

Throughout the two-year partnership, TeleWare will gain access to research expertise from Dr. Yifeng Zeng and Dr. Claudio Angione from Teesside University's School of Computing. In addition, AI specialist Dr. Teng Fu will be based with TeleWare full time, ensuring that the company has permanent access to a highly-skilled member of staff.

"To maintain a technological advantage, businesses today must gain insight from a range of different sources including the latest academic thinking and theories," says Dr. Geoff Archer, head of knowledge exchange at Teesside University. "This will allow them to more fully understand the needs of their customers and their industry."

KTPs are part funded by Innovate UK, an executive non-departmental public body sponsored by the Department for Business, Energy and Industrial Strategy.

NEW COURSES

VMware vSphere 6.5: Install, Configure & Manage – Arrow

This five-day course features intensive hands-on training that focuses on installing, configuring and managing VMware vSphere 6.5 which includes ESXI 6.5 and vCenter Server 6.5. It is aimed at system administrators and engineers, and delegates will be required to have sysadmin experience on Windows or Linux OS.

The course aims to prepare participants to administer a vSphere infrastructure for an organisation of any size. It is the foundation for most other VMware technologies in the software-defined data centre.

Sessions are available between now and June in classrooms nationwide. Arrow is also offering a virtual class in early April. <http://tinyurl.com/gvwuq3d>

Cyber security training & refresher programme – Context Information Security
This new programme aims to keep cyber security professionals, CISOs and IT managers up to date with the knowledge and skills required to understand and defend against the latest threats.

Context has designed courses to provide in-depth understanding across four main categories: web application hacking; mobile hacking and security testing; red teaming/simulated targeted attacks; and hacking network infrastructure.

The company adds that its custom-built training portal allows instant feedback along with detailed answers to practical challenges.

Courses range from 1-4 days depending on the complexity of the topics covered. They can be bought individually or as part of a package. info@contextis.co.uk

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