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UK-EU agree six-month 'data adequacy' bridge



Enterprises can keep data flowing to and from the European Union (EU) as normal post Brexit, thanks to a temporary solution that will keep the current rules in place for several months.

The bridging period of up to six months has been agreed to ratify a data "adequacy" agreement to allow for the continued free flow of personal data between the UK and the bloc.

A vote in the House of Commons saw a majority of 448 (521 votes to 73) approve legislation to pass the EU-UK post-Brexit deal that was announced on Christmas Eve into UK law. Data adequacy is an EU process to certify that a country, or a specific industry within a nation, meets equivalent standards to the bloc's rules on data protection.

Paul German, chief executive officer at Certes Networks, which delivers data security

technology solutions to enterprises and governments worldwide, told Networking+ what this arrangement was designed to achieve.

"Data adequacy is just a way to measure the data security controls/regulations in non-EU countries who trade with EU data and it is absolutely the right thing to do to ensure the PII data of both countries/states are protected by enforceable regulation that has a common set of goals, objectives and outcomes," he said. "This is nothing new but just simply applies to the UK now we are no longer part of the EU; however, because we were part of the EU we have the necessary GDPR controls in place and as such will only be affected should there be a material change in the GDPR guidelines, which I don't think

is going to happen in the next six months."

German added that once that period ends, he expects to see a set certifications/regulations and guidelines implemented by a body like the Information Commissioner's Office, that allows the regulations and controls implemented in each country to be easily measured against one another. "This will be in the interest of finding an alignment that would allow easy establishment of parallel controls/practices that would ensure equal handling of each other's sensitive data," he said.

Reinout Bautz, general counsel at Zivver, the email data protection specialist told Networking+ how "incredibly important" it was for the UK and EU to agree the deal.

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UK-EU make data agreement

Continued from page 1

“The agreement is a standstill period, which essentially offers the EU more time to issue a so-called adequacy decision, which shall permit a cross-border data transfer outside the EU, or onward transfer from or to a party outside the EU without further authorisations or safeguards being required, Bautz said. “At first it was very doubtful whether the EU would speed up the process of issuing such an adequacy decision within time. However, it is now anticipated that the six-month period under the adequacy agreement provides ample time to take the necessary decisions. Given the economic interdependence and extensive data transfer between the EU and UK it is pivotal that such an adequacy decision will be in place prior to expiration of the agreement and therefore the UK will not just be seen as a ‘third country’ under the GDPR (with all its consequences).

A number of organisations had been hoping for a deal to be signed sooner rather than later and TechUK chief executive officer Julian David said the wider tech sector have been highlighting the importance of a data adequacy agreement since the day after the 2016 referendum. “Data adequacy is so important, not just because of the economic costs of failing to reach an agreement, estimated to be around £1.6bn to the UK economy, but because of the high level of integration between UK and EU tech companies, a partnership which this year has helped achieve a record \$41bn invested in UK and European companies,” he said. ■

South East Water signs cloud and machine learning deal with CTS

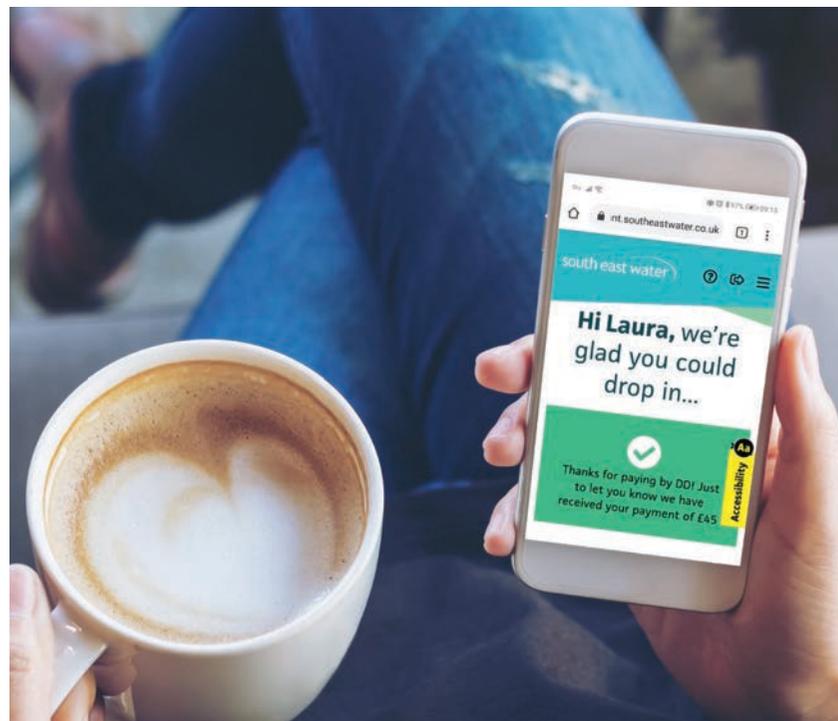
Cloud Technology Solutions (CTS), a Google Cloud Premier partner, has secured a contract with South East Water to digitally transform its CRM system, My Account, as part of the organisation’s five-year strategic plan. The project will see the former migrate My Account to Google Cloud, to improve customer service operations by teaming with CTS’s developers and platform engineers.

This migration will allow South East Water to make use of Firebase – a Google platform that enables businesses to build their own apps – improving communication and interaction with its 2.2 million customers.

CTS will also deliver a full change management service to ensure a smooth transition to Google Cloud. Once migrated, CTS will build functionalities into South East Water’s CRM systems to enhance the customer service experience, a key aim of the five-year strategy, and automate operational processes where feasible.

Mary Sabalis, head of business systems at South East Water said the company’s business plan over the next five years is centred around innovation and optimising customer interaction. She added that technology such as artificial intelligence (AI) and machine learning (ML) will be key to us achieving this.

“We knew that moving to the cloud was the most important step in the journey to unlock a number of doors in the way we work internally and externally and



South East Water has signed a cloud and machine learning deal with CTS to digitally transform its existing CRM system, which is part of the organisation’s five-year strategic plan

it will allow us to be creative in how we communicate with our customers,” Sabalis continued. “Creating the infrastructure where our customers can report a leak using their phones, and having Google

Cloud’s ML technology automate the workflow, will play an important role in how we optimise operations. It will allow us to free up our customer service teams so they can focus on more detailed queries.” ■

IBM helps clients prepare for next-gen encryption tech

US multinational tech giant IBM has launched a new service that allows enterprises to experiment with fully homomorphic encryption (FHE). The technology is designed to allow data to remain encrypted even when it is being processed and/or analysed in the cloud or third-party environments.

“The new IBM Security Homomorphic Encryption Services provide companies with education, expert support, and a testing environment for clients to develop prototype applications that can take advantage of FHE,” the company said.

Building on the groundwork and tools developed by IBM Research and IBM Z, IBM Security Homomorphic Encryption Services offers customers a scalable hosting environment on IBM Cloud, as well as consulting and managed services to help clients learn and design prototype

solutions that take advantage of FHE.

“Fully homomorphic encryption holds tremendous potential for the future of privacy and cloud computing, but businesses must begin learning about and experimenting with FHE before they can take full advantage of what it has to offer,” added Sridhar Muppidi, chief technology officer, IBM Security. “By bringing IBM’s cryptography expertise and resources to our clients that are driving innovation in their unique industries, we can work together to create a new generation of applications that leverage sensitive data, without compromising its privacy.”

Gartner estimated that by 2025, “at least 20% of companies will have a budget for projects that include fully homomorphic encryption (FHE), up from less than 1% today”, IBM said in a statement. ■



IBM Security Homomorphic Encryption Services offers customers a scalable hosting environment on IBM Cloud, as well as consulting and managed services to help clients learn and design prototype solutions that take advantage of FHE

Sunderland businesses secure £62m fibre investment boost

The city of Sunderland has secured an investment of £62m as part of City Fibre’s plans to help replace the UK’s legacy copper networks with gigabit-capable full fibre connectivity. This new state-of-the-art infrastructure is tipped to boost business productivity, while giving enterprises access to some of the nation’s fastest broadband services.

Once completed, the network will be in reach of nearly every business in the city, providing a platform for a new generation of “smart city” applications and the roll-out of 5G mobile services.

Jason Leggett, city manager at City Fibre, who will spearhead delivery of the Sunderland project, which is due to commence mid-2021, explained what the £62m Sunderland full fibre network build investment will bring.

“We are working in close partnership with Sunderland City Council to transform the area’s digital infrastructure, ensuring that the digital needs of those working and living in the region are met now and in the future,” he said.

City Fibre will be engaging with Sunderland City Council and local communities to ensure a fast and successful roll-out. Ward councillors will be briefed on plans and local businesses will be kept informed by mailings ahead

of planned works. Once the network is activated, services will be available from an increasing range of Internet Service Providers (ISPs) to deliver next generation broadband services.

Patrick Melia, chief executive at Sunderland City Council, added that Sunderland is getting “noticed as a serious player globally” as a digital leader with opportunities for investment, whilst firmly positioning our fantastic city as a healthy, happy place to live, work and play.

“The announcement of this huge investment from our valued partners at City Fibre will continue our citywide digital transformation, advancing opportunities for our residents, businesses, educators and healthcare providers through a truly transformative full fibre network,” he said.

Councillor Graeme Miller, leader of Sunderland City Council, added: “This investment represents significant opportunities to drive efficiencies and innovation to help Sunderland-based businesses to gain a real competitive edge.”

City Fibre recently started to invest £32m in order to rollout a new 1Gbps capable FTTP based broadband network to “nearly every business” in Barnsley. ■

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Leeds firm introduces 'Pod Fusion' service

Leeds-based telecoms company 24 Seven Cloud has launched Pod Fusion, a connector application that allows Microsoft Teams users to initiate calls to any number from within the proprietary business communication platform with no additional Microsoft License requirements.

It is powered by Metaswitch, the virtualised network software and communications solutions provider that was acquired by Microsoft last year.

"The problem with multiple apps, is that switching between them causes user friction in terms of usability," said David Samuel, managing director of 24 Seven Cloud. "The new Pod Fusion app allows users familiar with the Microsoft Teams environment to initiate Pod phone calls and take full advantage of the rich telephony features that the Pod unified communications platform can offer. As well as a richer user experience compared to MS Teams Telephony, and the ability to easily add on best-in-class solutions like call recording, auto attendant and call centre functionality, it also brings really compelling cost benefits for every business."

Furthermore, 24 Seven Cloud said the launch of Pod Fusion is the first of many product launches in an ambitious new strategy developed over the last six months to help businesses work better and more cost efficiently during the current homeworking guidelines due to the ongoing pandemic.

Samuel added, "The unique aspect of



The application is powered by Metaswitch, the virtualised network software and communications solutions provider that was acquired by Microsoft last year PHOTO: [HTTPS://24SEVENCLOUD.CO.UK](https://24sevencloud.co.uk)

our app is that it enables calling within Microsoft Teams without the need to pay for additional Microsoft Licenses including the costly E3, E5 and Business calling package add-ons. The other real game changer here is that our unique device agnostic platform can support and adopt any SIP phone or device. This means that costly hardware upgrades are not required, and businesses and resellers can utilise their existing hardware inventory without any more CAPEX expenditure."

The new Pod Fusion product is available to businesses through the company's reseller partners as a free of charge addition to the company's existing platform, 24 Seven Cloud said. ■

Sepa cyberattack 'likely to be by international organised cyber-crime groups'

The Scottish Environment Protection Agency (Sepa) said it was continuing to respond to an ongoing ransomware attack on Christmas Eve, probably by international serious and organised cyber-crime groups.

It also confirmed the theft of 1.2GB of data, which suggests around 4,000 files may have been accessed and stolen as part of a "complex and sophisticated" attack.

However, Sepa reassured the public that priority regulatory, monitoring, flood forecasting and warning services are adapting and continuing to operate.

"Whilst having moved quickly to isolate our systems, cybersecurity specialists, working with Sepa, the Scottish government, Police Scotland and the National Cyber Security Centre, have now confirmed the significance of the ongoing incident," said Terry A'Hearn, Sepa chief executive. "Partners have confirmed that Sepa remains subject to an ongoing ransomware attack likely to be by international serious and organised cyber-crime groups intent on disrupting public services and extorting public funds.

Sepa added that recovery may take a significant amount of time, with some systems remaining badly affected for some time.

Some security analysts said the hack was similar to that of ones conducted by Russian organised cyber criminals. However, neither Sepa nor Scottish police have commented on the matter. ■

Data Center energy waste could be costing you the Earth

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A network that thinks like you

Traditional network models simply can't keep up with the demands of modern businesses. The result? Serious stress on your infrastructure and people, which is why we need a new approach to networking.

The focus of that new approach needs to be where the "intent" of your business is translated into policies that can be automated and applied across the network. This takes you from a network that needs constant attention to one that simply understands what you need and makes it happen.

Welcome to the nerve centre...

Cisco DNA Centre is the key to realising an intent-based network; it's the network management system, foundational controller, and analytics platform that makes it all possible. Cisco DNA Centre, with Daisy Corporate Services for expert deployment and support, lets you simplify your network management regardless of your hybrid architectures' complexity.

Chances are that your network infrastructure isn't completely powered by Cisco. That's why Cisco DNA Centre has been designed as an open platform delivering true 360-degree extensibility and visibility across your entire network.

Let's take a look at how Cisco DNA Centre can help solve common network challenges:

Optimise the user experience: Welcome to faster troubleshooting, minimised downtime and a better experience for your users with a single dashboard and granular views networkwide. You can understand what was happening when an issue occurred with a timeline view of device or user performance, and stay in the know with a quick overview of the health of every network device and user on the network – wired or wireless.

Embed security everywhere: Instantly detect day-zero malware and find threats even in encrypted traffic. You can get ahead of threats with continuous monitoring and compliance and detect advanced persistent threats with network security analytics that uses multi-layered machine learning (ML) while ensuring comprehensive visibility and trusted access everywhere on your network.

Automate device provisioning: Say goodbye to manual device configuration and save time, money and headaches. You can deploy new devices in minutes without on-site support visits and automate additions, changes, policy provisioning, and upgrades.

Simplify operations: You can deploy new capabilities and address Product Security Incident Response Teams (PSIRTs) faster than ever before. You also get software image management for consistency and better network performance and can use pre-and post-checks to help prevent software upgrades' adverse effects.

Centralise policy across multiple network domains: Define, configure, enforce, and update policies across your campus, WAN, data centre, and multi-cloud networks, and automate how to connect trusted users and things to trusted applications while reducing human error. You can take the information collected in policy and translate it into network- and device-specific configurations required by the different types, makes, models, operating systems, roles, and resource constraints of your network devices. Additionally, you can create virtual networks, access control policies, traffic policies, and application policies.

In such a climate, the ability to understand, control and optimise all elements of your network may be all that separates success from failure. Learn how to accelerate your journey to intent-based networking in the whitepaper: **A Network That Thinks Like You.**

BA customers claim compensation

Over 16,000 people are seeking compensation from British Airways (BA) over a data breach three-years-ago, according to lawyers acting for the victims. In September 2018, the UK's flag carrier admitted that the personal details of 420,000 customers – including names, debit and credit card numbers, addresses and email addresses – had been stolen. Law firm PGMBM has since announced that a record

number of customers have signed up for the action – the largest opt-in group action for a data breach in UK history. Lawyers estimate that each claimant could be in line for £2,000 in compensation, putting BA's overall potential liability at around £800m. British Airways passengers feel let down by what transpired," said PGMBM partner, Tom Goodhead. "In this instance, they presided over a monumental failure.

Informatica launches customer experience via cloud-native solution

Enterprise cloud data management firm Informatica has rolled

out a cloud-native Customer 360 SaaS solution. The company said it is designed to improve the delivery of CX from enterprises in a post-pandemic, digital-first, cloud world.

"Today's customers demand a digital-first experience that delivers the highest satisfaction," said Scott



Holcomb, principal, Deloitte Consulting.

"With the new Informatica Customer 360 solution built on the Cloud and designed for the Cloud, together Deloitte and Informatica can help enterprises radically transform their CX with a modern cloud-native, microservices-based, API-driven, AI-powered architecture." The service, apparently the first enterprise-scale data management system in the world, went live in January.

Ambulance service partners with O2



The East of England Ambulance Service NHS Trust (EEAST) has partnered with O2 to provide access to technologies that support the roll-out of a new electronic patient record system. This partnership could save 1,700 days of ambulance crew time over the course of a year. The contract is also said to eliminate the majority of paper records, bringing environmental benefits. Furthermore, it will enable the roll out of iPads to frontline workers, speeding up the turnaround for ambulances. Jo Bertram, managing director for O2 said: "By implementing these new technologies, we hope to eliminate any inefficiencies and create seamless systems to help them focus on what they do best." The partnership is worth £5.9 million over a five-year contract with funding from NHSX.

Nextgenaccess completes full fibre between Bristol and Wales

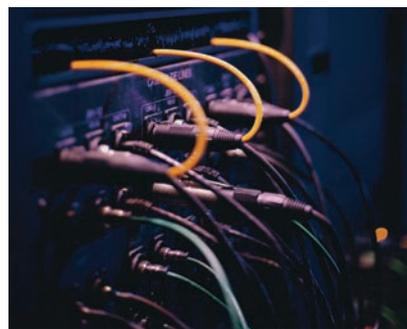
Fibre optic UK network builder Nextgenaccess confirmed the completion of its new 67km high-capacity carrier-neutral fibre network between Bristol and Wales. The project built its link between Bradley Stoke (Bristol, England) and the

Next Generation Data (NGD) datacentre near Newport in south Wales, making use of Openreach's (BT) existing cable ducts using Physical Infrastructure Access (PIA / DPA). It also entailed the deployment of a 4km fibre section spanning the

Severn Bridge (M48) crossing with 864 fibres in two diverse ducts. Nextgenaccess is supported by an investment of £22m from the UK National Digital Infrastructure Fund (NDIF) to help spread its 10Gbps broadband to businesses.

DC specialist Keysource completes MBO

Keysource, a specialist in data centres and critical environments, has successfully completed a management buyout (MBO), led by its CEO. The transaction was backed by Manchester-based Tosca Debt Capital (TDC) and Shawbrook Bank, which provided equity finance and debt funding respectively. Terms of the deal are undisclosed. Based in Gatwick, Keysource has been a specialist in data centres and critical environments for more than 40 years, providing a range of services to design, build and maintain critical and technology infrastructures and protect reputations. As part of the transaction, Tosca Debt Capital founding partner Gary Davison will join the board of Keysource, while Warwick Ley of RooGreen Ventures will take the position of non-executive chairman. Stephen Whatling,



CEO at Keysource, said: With the backing of a strong financial sponsor in TDC, the business plans to develop its buy and build strategy alongside existing organic growth plans and take advantage of the significant opportunities that lie ahead in our sector. Terms of the deal are undisclosed.

SSE and Telent partner for new UK MCA network

Connectivity supplier SSE Enterprise Telecoms has partnered with Telent, a technology and network services company, to deploy a new ethernet network for the UK Maritime and Coastguard Agency (MCA). The former will connect four data centres and deploy a network of resilient ethernet cables into 165 of the MCA's remote radio sites around the UK coastline, to improve the public's safety at sea. Peter Asman, divisional director for public sector at SSE Enterprise Telecoms said: "Partnering with like-minded businesses such as Telent will be key in bringing high capacity, highly resilient services to more UK organisations."

English councils deploy IoT in houses

Local authorities in Leeds, Richmond and Sutton are advancing their use of IoT technology in up to 1,000 council homes to better support residents and make services more efficient. In Leeds, for example, Home Link has secured a 12-month project with Leeds City Council to install environmental sensors to measure temperature, humidity and CO2 in social housing. Around 50 properties will also get technology for the remote monitoring and management of fire and carbon monoxide alarm systems. This second phase of the project, which is funded through a £500,000 GovTech Catalyst investment, follows an initial pilot where sensors were installed in six properties.

Word on the web...

Post-pandemic normality: 2021 predictions, by Xavier Coemelck, regional VP of sales and services at Entrust

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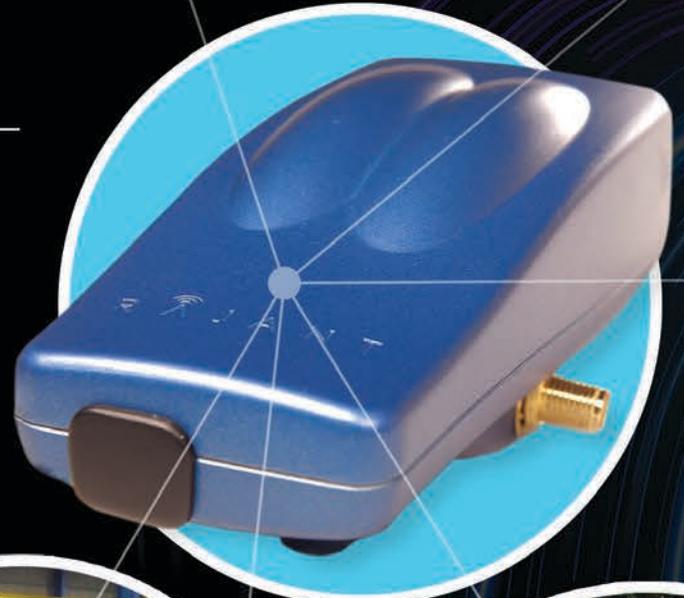
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What happened to Black Friday and Christmas?

Nigel Thorpe at SecureAge Technology looks at what the hackers got up to over the recent festive season

If you Google cyber crime during Black Friday and Christmas you can find plenty of warnings and advice from a plethora of experts, vendors and even the UK National Cyber Security Centre (NCSC). But the strange thing is that there appears to be no headlines featuring online scams or breaches.

So, what happened in a year when more of us were online shopping than ever before? Previous festive periods have provided fertile ground for cybercriminals intent on spoiling our celebrations and bargain hunting. Was it the case that it's been a tough year for hackers too and they took time off? Or maybe they have been too busy crafting phishing attacks preying on our anxieties around the pandemic. Or have we just got better at spotting a malicious email or link during those long winter nights promising a great deal?

Alternatively, it could be that a successful festive phish is no longer news. We have become so accustomed to cyber crime headlines that it takes a major breach to make the news. And of course, the SolarWinds and FireEye attacks provided plenty of big stories to write about.

There is probably some truth in all these explanations, but we should not get complacent or assume that we can rest on our cyber security laurels. After all, consumers will always provide high volume attack opportunities, albeit delivering low per-unit returns. Send an email containing some very attractive deals to enough people and the cybercriminal will always manage to scam good pickings from a small percentage.

This is exactly where all those millions of stolen email addresses fit. Throughout the year we hear of organisations who have been attacked, with their customers' data stolen. 'But it's OK', they say, 'no important information was stolen; just email addresses'. The problem is that both personal and business email addresses are valuable to cybercriminals who will use them directly for activities like Black Friday or Christmas deal scams, or they may just sell these contacts to other criminals.

The fact is that it's not just credit card or bank details that are valuable. Organisations need to realise that ALL data is important.

Working on the supply chain

A second area of attack is against retailers directly along with other product

and service suppliers, including the growing number of Managed Service Providers (MSPs). In a busy sales period, the last thing a retailer or product supplier needs is an interruption to the smooth running of its operations. So, this is the perfect time to launch ransomware attacks.

To cause any damage to an organisation's systems, the cybercriminal has to sneak in, on the back of an employee, contractor, via a supplier's network, or in the case of an online service provider, through a customer account. Phishing and social engineering are the favourite avenues, but drive-by downloads and compromised user accounts work too. So, using a Black Friday and Christmas deal or a COVID-19 promise as phishing bait is a golden opportunity.

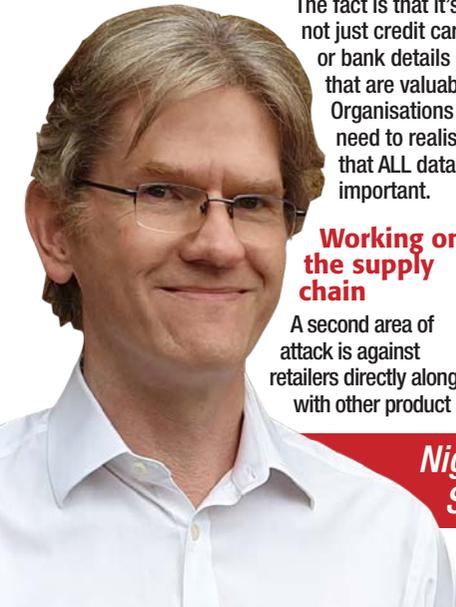
Today's ransomware doesn't just stop at disabling everything until the ransom is paid. The first job the cybercriminal completes today, once inside the target network, is to steal as much data as possible. We've seen this through the year with incidents like the attack on Blackbaud that provides hosted fundraising software used by many universities, schools, charities and other organisations.

Organisations often make things easy for the hackers, but even with the best multiple layers of defence it is impossible to keep all the bad guys out, all of the time. This is demonstrably the case, since we daily see stories about hacked companies and stolen data. And if some of the best IT security and tech companies can't protect themselves – what chance is there for other corporates or SMEs?

Once in, the cybercriminal can unleash the ransomware, disabling systems and having the additional leverage that an unpaid ransom will result in published data. If the organisation chooses to pay the ransom, they must trust the criminal to keep their side of the agreement, unlocking systems and not publishing or reselling the data. If you can't trust a good, reliable, upright cybercriminal, who can you trust?

Lessons learned

As we enter an uncertain 2021, we need to understand that all data is important and needs strong protection – not just for Christmas or Thanksgiving. Full disk encryption won't solve this problem. On a running system with full disk encryption, every process that requests access to data will be given it, no questions asked. After years of simply trying to stop the 'bad guys' getting in, the new year resolution for CIOs and CISOs should be to take a data-centric approach and protect the information by encrypting all data, all of the time. It's the ultimate in zero trust and ensures that the cybercriminals will be disappointed with what they get for Christmas next year. www.secureage.com



Nigel Thorpe, technical director, SecureAge Technology

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Areas of application





Voice quality matters now more than ever

Dominic Norton, director, Spitfire Network Services

With a new year underway, we at least have a glimpse of light at the end of the tunnel. With progress being made on vaccines against COVID, businesses everywhere can perhaps start to plan for a return to normal. However, the pandemic has left no doubt that the nation's work patterns have changed for good. Depending on what reports you read, it is suggested that anywhere between 20 - 50% of the workforce will now base themselves most (if not all) of the time from home. Technology will be key here in order to make sure that workers can continue to be productive - success will be replicating the office working experience but at home.

And a critical part of replicating this office working experience is communications - clear communications. Anyone who has battled with poor quality work calls knows how frustrating and unprofessional this can be. Connectivity issues could prove to be a major hurdle for many businesses trying to set their people up in home offices. After all, voice quality matters. With this in mind, we set out to find out what employees really think about this issue and how it impacted their WFH experience.

Voice quality matters

Our 'Voice Quality Matters' survey (1,007 respondents were surveyed throughout November 2020) found that 27% of employees faced connectivity challenges, such as drop-outs or lags, during the course of their working day. The upshot of these issues was that they caused frequent disruption for workers and impacted negatively on their productivity. With the majority of voice (video) communications hosted via the Internet, ensuring that your voice can be heard clearly has never mattered more. The survey revealed that only 4% of employees working from home had their own dedicated internet connection for work purposes - essentially, employees are relying on their home broadband for connectivity. We also discovered that 57% of employees revealed that they had anywhere between 3 to 10 devices connected to their home broadband at any one time - quite a drain on the pipeline under domestic conditions. And it was of little surprise to discover that most connectivity issues occur between 4pm and 6pm, a timeframe which sees many kids returning home from school and using personal devices etc. - again, a massive strain on the network leading to connectivity challenges.

The connectivity conundrum

The information we gleaned from our study pretty much confirmed what we already suspected. Indeed, we were unsurprised to discover that more than one in four employees are facing connectivity challenges whilst they work from home. And when you consider that remote working can no longer be classed as the supposed 'new normal', (this shift happened over 9-months ago), it shows that businesses have been slow to act. Connectivity is critical for employees in order to be able to mirror the experience of the office, at home. It is absolutely essential if organisations want to deliver quality service to customers and if they want to ensure that their workforces remain as productive as possible. Our message to businesses is to act now and take the time to consider the damage that might be inflicted to both productivity and reputation by a continuing scenario of sub-standard connection.

Dedicated connection = improved experience and increased productivity

We earnestly believe that connectivity will be fundamental for successful remote working as businesses try to meet the demands of an increasingly based-from-home workforce. Ultimately, they require reliable connections that enable them to quickly and easily reach business applications and services. When your people are working in a disconnected environment this can ultimately lead to a frustrated workforce - not great given all the new remote working policies that will be coming into effect. Those working in professional services industries will

be particularly keen to enjoy a connected environment that is both reliable and robust. Imagine the financial and reputational consequences of failed Zoom calls or constant dropping in and out of online meetings. Key workers in these sectors will certainly be thanking the decision makers who facilitate seamless communication.

Businesses of all shapes and sizes are facing many challenges in the face of lockdowns and shifting goalposts. As they look to balance the requirement for more secure access to resources with the need to enhance the end user (worker) experience, addressing poor connectivity should figure at the top of the list. Adopting the right technologies will ensure that

employees can enjoy a 'work-from-anywhere' environment and be free from the negative effects of below par communication.

We were actually unsurprised to discover that more than one in four employees are facing connectivity challenges whilst they work from home. When you consider that remote working can no longer be classed as the supposed 'new normal' with this shift happening over 9-months ago, it shows that businesses have been slow to act. Connectivity is critical for employees to mirror the experience of the office from home - critical for delivering a service to customers and ensuring their workforce is as productive as possible.

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Here we go again

The nation has entered lockdown 3.0, which means working and learning from home. Having adapted to it last March, are we in a better position almost a year later?

It was March 16 last year when Matt Hancock, the health and social care secretary told the House of Commons that “unnecessary social contact” should be avoided as the UK experienced an exponential rise in coronavirus cases. Later that day, prime minister Boris Johnson announced this “very draconian measure” in a televised statement. Then a week later, Johnson’s ‘stay at home’ mantra was the harbinger for the rest of the working year.

Working from home is something many of us – me included – have either wanted or had enjoyed doing already, so knowing that we didn’t have to sit in traffic jam or stand underneath someone’s pungent armpit on the tube any time soon, was a game-changer.

Are enterprises in a better position for remote working now than they were

during the first lockdown?

“From a cloud perspective absolutely. More cloud solutions are easily available; multi-cloud, hybrid cloud; public, private and bare metal options,” says Hiren Parekh, UK head of OVHcloud. “In the past many organisations only saw public cloud as the go-to which was quite inhibitive due to cost and vendor lock-in. Traditionally it’s difficult to move legacy apps to the cloud. Now there is freedom of choice and better pricing models. Legacy apps can now easily be moved through Hosted Private Cloud. High performance connectivity is also more readily available than in the past, so much so that cloud apps and the workforce can be ubiquitous as connectivity moves away from the bottleneck single access point of the office.”

“At the time of the first lockdown there was a lot of uncertainty surrounding which

of the many solutions on the market would be the best fit for companies,” says Ben Kearns, head of sales at telecom 24 Seven Cloud. The UK telecoms and IT marketplace have innovated new solutions and rolled out products at an incredible pace. As a result, the solutions out there today are far superior to those available even a few months ago. Nearly 12 months later we can safely say that two clear front-runners have emerged - Zoom and Microsoft Teams.”

It’s a view shared by Richard May, managing director at virtualDCS, who says that there was initially a shortage of physical equipment, including laptops, headsets and even cameras, which meant that it was challenging for many organisations to be able to offer remote working facilities to their employees.

“I think businesses are more prepared than they were during the first and second

lockdowns and working from home has almost become the new norm for many,” May adds. “Employees are far more mentally and physically equipped than before and are used to the technology now. They’ve adapted to the world of Zoom and Microsoft Teams, and are now used to conducting business in this new way, but many still have a long way to go as companies still struggle to answer phones and manage their distributed workers.”

For May and his colleagues at virtualDCS, “Microsoft Teams has proven to be the most important tool for providing secure connectivity between our staff members, and with our recent telephony integration, the outside world as well. Our file sharing service Nimbox has also been essential for distributing internal data securely between employees”.

That’s not to say it’s all been plain-sail-

ing, as May's team does have moments where technology isn't quite offering what it promises. "We've seen frequent episodes of poor latency and video quality, but it's often hard to work out if it's the internet connection or the cloud service provider that is causing the issue and struggling to keep up with the increased demands of home working," he adds.

However, you could argue that was to be expected, especially when one considers the speed in which companies the length and breadth of the British Isles had to adapt to the biggest change to the working week it had ever experienced. So, what do the internet providers think of it all?

"In 2020, organisations rapidly pivoted to support remote working, leaping forward five years digitally in a matter of months. This enabled them to survive and stabilise, says Andrew Halliwell, product director, Virgin Media Business. "With a third national lockdown disrupting business once again, leaders should invest in advanced cloud and networking technologies to continue supporting employee collaboration and meeting online customer demand."

It's clear that enterprises are adapting and working as well as they can with the new way of working, but people still need to adapt to the technology in a different environment – working from home isn't just about not commuting.

"The biggest learning curve with technology is typically working out how to use that technology," Kearns continues. "As technology evolves and adds new features it can often become more difficult to start using that technology without training or mentoring in that new technology."

Of course, it wasn't just traditional office workers who had to make the change. Schools, colleges and universities all had to do likewise. Children and young adults no longer got to see their friends, unless it was through the medium of a computer screen.

Mobile operator Vodafone launched its 'schools connected' programme in November and is proud of the fact that all 350,000 data SIMs have now been ordered by more than 9000 schools and FE colleges across the UK.

"These SIMs are ready to be used by students during the current lockdown," a spokesperson says. "We believe key to the programme's success was a quick and easy ordering process (it took less than five minutes to order the data SIMs online) and giving schools and colleges the opportunity to distribute the connectivity to those they felt needed it most."

The company is also joining the Department of Education's Get Help with Technology programme to increase data allowances for disadvantaged children.

Simon Carter, director at RM Education, a supplier of technology and resources to the education sector, argues that before Covid-19, many schools were looking at cloud-based infrastructures but hadn't fully made the leap.

"As a consequence, when speaking to our customers, the adoption of new technology and upskilling have proven to be the most significant challenges over the last few months," he says. "Ironically, our research, conducted this time last year, suggested that many schools were unconvinced that technology had a big part to play in how they operated. All of that, of course, has since changed as a result of the pandemic and schools were forced to make the digital transformation journey almost overnight. Something schools planned to roll out over the next twelve months, was suddenly done in a week."

Carter adds that with the help of the government's Cloud for Schools scheme,

the majority of schools have now got a robust remote learning platform – usually Google Classroom or Microsoft Teams – in place, which is the basis of all remote communication, live lessons and everything else in between. "The challenge now is to make sure every student and child has the device they need to learn and thrive," he says.

A number of UK universities have been the target of cyber criminals over the past year, as hackers exploit the shift in working and learning. Carter argues that with many people going online for the first time, the risks are significant.

"In fact, the National Cyber Security Centre wrote to all schools in September warning them of an increase in ransomware attacks," he continues. "It is imperative, therefore, that schools stay one step ahead of cyber-attacks – especially given that a ransomware attack can cost a school anywhere between £20k and £50k depending on both the incident and the size of the establishment. As a starting point, schools need to consider where their valuable data is stored and how it's being protected. If the network is being accessed remotely, for instance, how is the network secured to ensure 'bad actors' can't get in through the same route. It also means employing vigilance when it comes to preventing phishing attacks by educating staff and pupils. Alongside this, schools should be making sure that access controls are secured, recording policies and content is secure and private, students are keeping their laptops in a safe place day to day, and that messaging between students are monitored and even restricted when necessary."

We've heard from the vendors, so now it's time to ask an educational institution how it's faring.

"Last time we had just fortuitously launched our new LMS (learning management system) but were working at speed to find out what it had to offer and there was variable skill and engagement of our teaching staff," says Janet Legget-Jones, head of educational business development and support at the Royal College of Physicians (RCP). "This time we were aware of all the different opportunities for virtual learning and had complete staff engagement. We have spent 2020 ensuring all education had been adapted for a virtual environment – a vast task as it is not just a case of putting a few slides up, but all group activities have to be adapted and changed."

Legget-Jones adds that during the first work and study from home period, it felt as if the college's staff was working so hard and relentlessly and fast to help doctors and provide information and teaching as quickly as possible on the new pandemic across the college. This time, she says, it's "more hard work but seems more manageable" due to the processes the college has in place and the familiarity with using the virtual classrooms and the LMS.

"We have fast tracked the changes we were already planning over the next few years and have also identified new areas to work with – especially potentially international in the virtual spaces," Legget-Jones continues. "The changes will not go away but we plan to have them alongside our existing face to face offering when it returns and, in fact, to offer a blended offering in some cases to maximise busy doctors' time."

Her colleague, Jonathan Jay, head of IT at RCP says the college is in a better position now for home working, although the tools haven't necessarily changed. "Those, such as MS Teams have developed quickly. More important has been the enforced change in user mindset which otherwise would likely have taken

"More cloud solutions are easily available; multi-cloud, hybrid cloud; public, private and bare metal options"

Hiren Parekh,
UK head,
OVHcloud,



several years to accomplish," he says.

Now, it's time for that all important question. We've adapted to three lockdowns and we know we have the tools we need. Does that mean we need to prepare for working like this indefinitely?

Parekh says the last 10 months have made employees and employers evaluate work/life balance and raised the question: do we really need to commute to the office to be able to work effectively? "What we do know is that the need for face-to-face and team interactions isn't going away, so this must be always be taken into consideration," she continues. "The current situation has forced companies to look at flexibility in the workplace, now there are much better collaborative tools available through the right IT investment. Naturally, getting the right balance will be key. During this latest lockdown companies are aware of the agility of working from home and are therefore better prepared. During the first lockdown parents were left to their own devices with their kids. This time round there are more collaborative tools, with a better schedule trying to mirror a school routine. The question is how do we keep younger children engaged and how can parents balance home-schooling with work? Schools are

better prepared for another lockdown."

In Jay's opinion, "a shift to increased remote/home working will become the norm" but May isn't convinced. "Personal interaction is a major part of human life and it can't be replaced," he argues. "While home working may be offered by more employers moving forward, I feel like productivity will suffer in many instances from continued social isolation, especially in departments where a consistent and open communication stream is essential."

For Halliwell, "longer term, a hybrid 'Operate from Anywhere' model, with employees working from home, the office and elsewhere, is the future, but it will require organisations to invest in flexible, agile and secure networking technologies. Those that embrace these technologies will be best placed to rebound". Don't renew that train season ticket just yet. ■

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Mind the gap

The digital skills gap problem isn't going to go away any time soon, so Robert Shepherd asks the industry what we are doing about it in 2021

It's a new year. The Covid-19 vaccine is being rolled out worldwide, the USA has a new president and you are looking to hire or change jobs.

However, like in many industries, supply doesn't always meet demand in this sector and that has long been blamed on a skills shortage.

The UK has long claimed to be among the – if not the – best and most advanced nation when it comes to tech, IT and data storage. If that's the case, why are we where we are?

Paul Rivers, CEO, Guidance Automation is of the opinion we're not quite as good as we make ourselves out to be.

"With the UK lagging behind globally in terms of skills, productivity and innovation, tackling this issue must be a priority for both industry and government," he says. "The latest government initiatives and roadmap to attract global talent and better the UK's reputation in science and technology is a great start, but the only way to continue this progress is more investment and emphasis on automation, robotics and technology as a career path."

There are others who think there has been

far too much talk and not enough action – so much so that it has become white noise.

"We've been talking about the skills gap for so long that I'm sure many are growing tired of the conversation," says Matias Madou, co-founder and CTO, Secure Code Warrior. "However, it remains a critical topic as the gap continues to widen year on year, stifling both growth and innovation across the UK. Surprisingly the impact of the pandemic may actually help to narrow the skills gap, as increasing numbers of non-tech workers are considering a career move into the tech sector."

Despite this Madou, cites a summer 2020 report from the Information Systems Security Association (ISSA) and Enterprise Strategy Group (ESG), which found that the cybersecurity skills gap worsened for a fourth consecutive year. "We see a lot of security issues stemming from common vulnerabilities in code, pointing to a lack of secure coding skills and awareness amongst developers, Madou continues. Many finish formal training without a foundational understanding of how to write secure code, meaning organisations are required to

either pay top dollar for candidates with security skills. An emphasis on training their existing teams, especially developers, can help fill this widening gap."

The skills gap appears in reports every year, so it's clearly not a fabrication. Yet for Sarah Gray, head of HR at Exponential-e, the UK's skill shortage stems not so much from a lack of talent, but from increasingly high demand for it. "There is huge competition between both technology businesses and enterprises looking to hire IT expertise in-house, which makes it very challenging to successfully recruit experienced candidates, given the plethora of options available to them," she says. "This is especially true in the UK. When I looked at a job site recently, I found 10,900 jobs advertised for cyber security specialists, 20% of which were based in the UK alone. Demand in the UK for cyber skills is sky high, but we don't have the pipeline of talent to match it, whether that's made up of people studying the relevant subjects, or simply experienced talent residing in the UK. This has also been exacerbated by the pandemic, which has seen a lot of people

understandably returning to their home countries to be nearer their families."

Security certainly appears at the top of most digital skills gap research and on the face of it, things don't look to be improving short-term.

"A UK government report found 68% of cyber sector businesses have tried to recruit someone in a cyber role within the last three years," says Madou. "These employers reported a third (35%) of their vacancies as being hard to fill. In 43% of cases, this was because applicants lacked technical skills or knowledge."

Another tech role that proves hard to fill is that of software developer and according to Nick Ford, chief technology Evangelist for Mendix, this is due to the fact they possess a highly specialised skillset. "This high demand has created a short supply of developers, creating a developer drought for many businesses," he says. "This drought poses a significant problem as businesses have a large amount of software to develop within their digital transformation projects, but don't have enough developers to keep up."

While it can be difficult to argue

against statistics, that's not to say the training isn't there.

CNet Training is renowned for its technical education and training for the data centre and digital network infrastructure sectors and its president and CEO, Andrew Stevens, says looking for immediate options, organisations can still do more when it comes to recruiting.

"If job roles all state a minimum of three to five years' experience, you're unlikely to consistently fill positions as there aren't enough skilled people in the industry," he adds.

"Those that do have the experience are more than likely already working for another organisation and therefore will need a desirable reason, additional benefits, salary etc to change jobs. Plus the industry is currently rife with organisations poaching each other's staff and paying higher and higher salaries."

That said, Stevens highlights some crossover industries and transferable skills that need to be taken more into account. He says individuals from the automotive industry, mechanical engineers, nuclear engineers and submariners can make great data centres technicians as well as ex-forces individuals looking for new careers after leaving the military. "All would make fantastic data centre technicians because they truly understand what mission critical is," Stevens continues. "Opening up the recruitment process can help fulfil open positions. Another option is to look at the individuals already within an organisation and assess those who can be trained and mentored to progress through the organisation. It's not just a skills shortage we face, we also have an ageing workforce, so we need to be looking to fill senior roles internally to protect the future of organisations."

Still, there is a good supply of graduates in the UK with the appropriate skills and knowledge for technical roles, Gray says people also need to consider the training and development required for them to gain the business acumen and confidence to walk into a role, 'hold their own' and make a difference.

"A significant number of young people seem to struggle with the transition from the lecture theatre to the office," she adds. "At times this can be due to the lack of strategic understanding, commercial awareness, and a basic appreciation of how to speak to customers. Employers must be mindful of this when it comes to hiring and training new recruits, as their skills are indispensable for any role in the technology sector. Businesses that get it right will be well placed to bridge the skills gap over time."

It's easy to point the finger of blame at training specialists and various companies

for investing where they should, but technology is now advancing faster than ever before and keeping up with the latest, cutting-edge solutions – and the skills needed to work with them – can be difficult," argues Sean Farrington, Pluralsight SVP EMEA. "Consider the fact that just two decades ago, developers needed to understand only a handful of coding languages," he says. "Now, there are over 250 languages and they are constantly changing – often multiple times a year. As a result, technologies mastered at university may be outdated by the time someone reaches the workplace, and upskilling employees on the job takes time and investment. This means many organisations are finding that demand for experts in AI, cloud, cybersecurity and DevOps is outstripping supply, and hiring the right talent is a challenge."

Farrington says further complicating matters is the fact all industries are now underpinned technology – from banking and finance to agriculture and retail, companies are migrating to the cloud, "AI is automating systems, and cybersecurity expertise is mission critical to protect against threats. In order to adapt to this change, the pool of tech talent is being increasingly stretched," he adds.

However, there are some who are of the view that companies need to change their approach when it comes to building the right structure.

"A multidiscipline approach is vital to crafting a diverse cyber security team that can draw knowledge and ideas from multiple backgrounds, yet some organisations do not recognise the value of this and see it as a risk," says Charlee Ryman, director of recruitment at Trident Search, "Peoples' brains work differently and having a cultured and symbiotic team will allow you to predict and prevent a threat actor's efforts at multiple layers. Ryman highlights the importance of getting 'as many different personality traits and skill sets within your team', who have the ability to deliver, challenge each other and hold each other accountable. The broader your team, the more effective it will be in deciphering an attack and innovating your defences. "The risk is trying to create a togetherness across your teams, building a strong culture, which in turn reduces staff turnover," Ryman says.

When it comes to recruitment, the likes of Ryman have long been looking to place the best candidates in the most suitable role, but in the modern day, there are many ways to hire someone.

"Around 73% of our technology employees have been hired via job boards in the past two years," says Gray That figure includes advertisements that

"If job roles all state a minimum of three to five years' experience, you're unlikely to consistently fill positions as there aren't enough skilled people in the industry"

Andrew Stevens,
president and CEO,
CNet Training



candidates have responded to, us using the tools to seek out the right CVs, or in some cases, us headhunting on LinkedIn. 18% have then been hired via referrals, and a small majority via agencies.

"Our training academy in the Engineering department is one of our most exciting hiring routes. We started the programme around eight years ago, which involves us bringing individuals in for a placement year during their third year of university. We then keep many of them on flexible contracts throughout their fourth year so they can return to work with us during the holidays, and many then join us permanently once they have finished in education. The programme has an extremely high success rate and has produced some of the most successful leaders within the business. One of our candidates now heads a team within managed services, while many have also gone on to further success across the business."

The skills gap is often talked about; indeed companies invest and no doubt make a lot of money writing reports on the problem. Should we just expect a raft of more reports over the next however many years, or are we making progress?

Stevens says the longer-term commitment revolves around education and inspiring a generation. "Teachers, parents and educators need to be trained and properly informed about the digital infrastructure industry, the skills required and the opportunity the sector offers," he says. "They can then engage with students to help them make well-informed decisions when it comes to looking at career options and picking subjects."

Scratch the surface of a CV database and the chances are you will find far more males than females, but is that by design?

"The gender imbalance is not a choice for a lot of companies in the technology space, but an unfortunate consequence of having very few female candidates for the roles available," says Gray. "The data tells us there just aren't as many women studying technology-based subjects. The industry is

doing a huge amount to try and overcome this, but it ultimately comes back to our schooling. Girls' interest in technology needs to be encouraged from an early age so they consider studying subjects later down the line that will teach them and give them an understanding of the skillsets required for the various careers they may want to pursue in the future."

However, you can only hire from the talent pool in front of you and enterprises must be in the right position to hire. Evan Wienburg, CEO, Truespeed says that for any company that's growing fast, finding and hiring the right people is a constant challenge.

"Since we secured a £75m investment from Aviva, Truespeed's growth has accelerated," says Wienburg. "As our teams are expanding we're looking to bring in skilled people managers who have the right subject area knowledge plus the approach and experience to give our team a great employment experience. We also find that senior management roles can take longer to fill because we are looking for specific experience and skill-sets and are not based in the South East. We've welcomed some fantastic additions to our management team in recent months but we know this was good fortune and these are harder to source."

For Farrington, organisations often turn to external hiring to secure tech talent – and struggle to recruit people with the right skills – rather than nurturing the skills from within. "By focusing efforts internally, it can be much easier to identify skills gaps within teams and understand which individuals would benefit from training and closer development," he says. "Naturally, this means that businesses can roll out new systems, complete projects and meet business objectives faster."

So, the roles are there and so is the training. Let's get on with it. ■

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A ‘small’ bang approach to SD-WAN

Zabrina Doerck, director of product marketing, global enterprise, Infovista

SD-WAN is largely supplementing or allowing the replacement of Multiprotocol Label Switching (MPLS) networks, which have been the preferred WAN infrastructure for large enterprises. However, the MPLS standard has not evolved since 2011, with pricing still an order of magnitude greater than DSL based alternatives. With bandwidth and application performance demands rising, many organisations want a viable alternative, but moving from MPLS to more cost-effective options – with SD-WAN as the enabler – is sometimes wrongly perceived as high risk.

MPLS gained its dominant role because it guarantees a high level of predictability in terms of networking connectivity using built-in quality of service for what is essentially a dedicated circuit. However, business-grade broadband is catching up and newer products such as ethernet leased lines, business cable and SDSL are available.

Apart from lowering cost, enterprises need advanced capabilities to gain visibility and control over network flows, to simplify network management and to control user quality of experience (QoE) for business applications. SD-WAN allows centralised management across branch networks and deep visibility and control over network flows and QoE. The result is often more responsive applications, better ROI from investments into cloud and other digital technologies, and as beneficial by-products, enhanced resilience across the WAN architecture gained through disparate connectivity paths.

SD-WAN works out how to best route application traffic based on set business requirement for performance, compared against available connectivity. As a concept, it has been successfully used for over a decade but many network admins worry about the complexity of implementation. The fear is that WAN traffic may be impacted, or that physically provisioning new equipment and making extensive configuration changes is a resource intensive project for thinly-stretched IT teams, potentially disrupting the business.

This is a major issue for larger enterprises with disparate functions and complicated network architectures.

As such, SD-WAN projects that require hardware replacement or re-engineering of the network can have roll-outs lasting more than a year. Worse still, for 24/7 enterprises that simply can't accept any WAN downtime – this means complicated workarounds are deployed to build parallel networks while SD-WAN is implemented. Invariably, many fail to grasp the opportunity to re-architect their communication workflows and instead SD-WAN ends up being just a slight incremental improvement rather than a sea change, ultimately barely breaking even on ROI.

The perception of complexity and challenges around SD-WAN comes from the historically standard approach of key SD-WAN vendors to deliver full-scale “rip and replace” deployments – and rightly so. However, novel deployment approaches afforded by new Transparent Hybrid WAN (THWAN) technologies make it possible for businesses to implement SD-WAN instantaneously and non-disruptively.

The first is to catalogue any issues around application performance, scale or resilience that are impacting the organisation. Upgrading existing MPLS circuits for more bandwidth may not always solve the problem if the issue is centred on prioritisation of traffic rather than bandwidth utilisation.

The second factor is to examine what other potential WAN network technologies are available within the geography and the timescales involved in enablement. Setting up a new business broadband link in major cities

like Berlin, Frankfurt or Cologne is relatively fast, but the current Covid-19 health crisis has led to extensive delays. The ability to extend Quality of Experience (QoE) over various types of transport, e.g. internet, wireless, etc. is a critical requirement to agility.

Next, consider the SD-WAN deployment approach with care. This should not focus solely on budget but also on flexibility, as, moving forward, there may be some variance over the types of connectivity options that are used – such as the potential for 4G/5G in certain remote branch locations.

It is also worthwhile, if possible, to run a small-scale trial to gain an understanding of the capability of SD-WAN. This is generally easier

with Transparent Hybrid WAN due to the overlay capability, but even a small PoC will highlight the potential benefits of a wider deployment and provide valuable feedback as to the processes involved ahead of a wider deployment.

Another consideration is around the use of standards. As a still relatively nascent and rapidly evolving technology, standards around SD-WAN are not as formalised as industry standards like BGP or ATM, or even Frame Relay. SD-WAN is not a new protocol but instead a new way of approaching the problem – a lifestyle change, if you will. Each vendor's technology works in different ways, and at present, SD-WAN is still largely proprietary in nature. However, this is changing

with emerging standards such as the MEF 3.0 SD-WAN certification promoted by the Metro Ethernet Forum (MEF), a non-profit international industry consortium with over 200 members, which can provide confidence that vendors are heading towards an interoperability position.

MPLS is still going strong but in the same way that ISDN is now being phased out across Europe, legacy WAN technologies will not remain indefinitely, especially as its technology roadmap shows no sign of future development. Evaluating the future of the WAN is a project that cannot be put off forever and an examination of newer hybrid options might offer a “softly, softly” approach that overcomes risk.

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The network test and measurement jungle

David Griffiths, independent consultant

In this complex world, information generates more revenue and profit than any other market sector. The current global pandemic is affecting the Internet more than ever before. The rise of online video conferencing and collaborative applications drives user expectation to match. Adding to this mix is the challenge faced by network administrators, often working from home, doing all they can to provide the highest service quality to staff and customers alike.

Fortunately, a wide range of appliances and software applications is available to help identify issues across the Internet right down to the end user who may also be working from home. The challenge is, what is the most effective, reliable, and best value for money tool for troubleshooting and analysis? Multiple factors should be considered; this article will hopefully provide a guide through the T&M (Test and Measurement) jungle. We have focused our attention primarily on hardware-based appliances even though there are many software applications; however, performance depends on the device used (a laptop for example).

Is the troubleshooting appliance easy

to install and use? Do you really need multicoloured, dynamic charts? Easy to see graphs and user-friendly navigation helps to speed up fault detection faster than fancy graphics. If the vendor produces a range of troubleshooting devices, did they consider how important it is to offer the same user interface across their product range?

Does the vendor offer portable, quick to install and affordable products? Networks can be massive and not necessarily centralized, so powerful, and lightweight tools are a must. At the other end of the scale, can rack mounted analyzers handle existing and increasing number of users, protocols, and data in large installations?

Data security is extremely important when it comes to small, portable analysis tools. The ideal solution is mains-powered, contains no hard drive and when disconnected, discards all network data. Tools with this functionality are mandatory in many governments and across a wide spectrum of market sectors.

With so many key workers unable to return to their normal workplace, network administrators can become bogged down with

emails and phone calls from users who may not be able to express what online problems they are experiencing. This challenge can be overcome. The installation of an appliance in the network centre and a small, portable analyzer from the same vendor can enable a home or in-house administrator to quickly identify end-user issues and, in many cases, fix problems without the need to travel. These small devices can be pre-configured and mailed to key workers along with simple installation instructions, so administrators can minimize user frustration while maintaining and improving network flow.

Wireshark, the world's most widely used protocol analyzer is perhaps the most popular, free network application. However, when there are many packets and numerous protocols being captured, identifying a transient phenomenon can be challenging. One troubleshooting tool vendor, has developed a 'quick-shot' extension to their Network Analyzer. Called 'Webshark' it enables an administrator to take a snapshot of a Wireshark capture and view the results within its own browser window; no need to launch a separate Wireshark session.

When there are many users and fast connections, finding infrequent problems can be a major and time-consuming task. A troubleshooting tool which can display real-time traffic and additionally store historical data is a real benefit to problem solving, especially when dealing with protocols such as SIP and RTSP. Some vendors provide limited storage for this requirement; only one or two can offer an almost unlimited storage capacity, perfect when there may be as many as 256 million connections.

Lastly, there's nothing like having a context-sensitive user manual at your fingertips when you need help. An ideal solution is to include a button on each page to instantly view all there is to know on a specific protocol or network layer. A complete version of this useful user manual is also available on some vendor sites as a Wiki.

"David Griffiths is an internationally recognized network, communications and IoT consultant, having held senior positions in companies including Cabletron Systems, Rockwell International and InfoLibria. He is the author of several books on SNMP, Network Switching and other technologies and a member of ISOC UK since 2007."

PRODUCTS

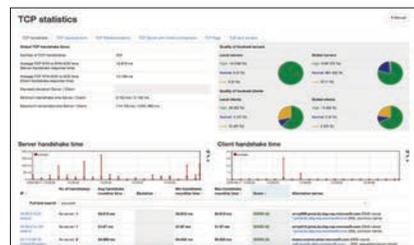
Due to the growing number of home-workers, pressure on IT and network administration staff is increasing. The Allegro Network Multimeter from Allegro Packets makes it much easier to ensure networks operate in a stable, reliable, and efficient manner. It measures all network protocols in real-time, such as https; debugs VPN connections and SIP/ RTP to provide administrators key quality parameters like the VoIP quality. This allows them to tune their systems for the best possible VoIP call quality. An Allegro

appliance, capable of processing 100 Gbit/s (e.g. Allegro x300) placed in the headquarters of an organization gives network administrators the opportunity to securely monitor all centralized and remote endpoints via a standard web interface. Home-worker network issues can be quickly and easily identified by sending staff an easily installable pre-configured small, portable (e.g. Allegro 200) appliance that can be monitored from a central location. With the Allegro solutions, a network administrator can for example examine and debug Microsoft Teams connections, which, together with other online conference applications has taken a significant role due to the Covid-19 crisis. Since Teams content is SSL encrypted, using TCP/IP as the Layer 4 protocol, an administrator can analyze poor connections by looking at the TCP connection quality statistics displayed by the Allegro Network Multimeter. In the web interface, they can examine the

most important quality parameters both in real-time and 'back-in-time': TCP handshake response times, TCP retransmission rates, TCP Zero Window times, SSL hello handshake response times, SSL first data response times etc. Moreover, administrators can also debug the RTP traffic with the RTP decoder output of the Allegro Network Multimeter. Despite audio/video traffic is sent by encrypted RTP frames, RTP encryption is applied only on the content and not on the RTP header, thus allowing for monitoring the RTP packet loss, jitter, and similar quality parameters. For all organizations, this solution helps minimize downtime, and enables network administrators to identify any issues without leaving their office or home. Such network troubleshooting solutions are essential to maintain the best network quality for all applications and services including conference calls and virtual meetings. gch-services.com/network-troubleshooting

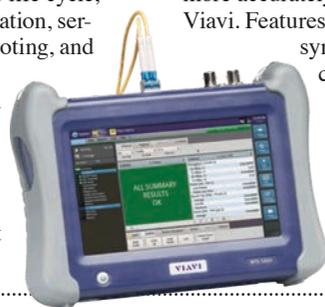


SignalTEK 10G from Ideal Networks is a new handheld ethernet tester designed to measure the maximum bandwidth available on LAN networks, identify bottlenecks and find ways to increase bandwidth "without the need to replace expensive data cabling". By simulating actual LAN network traffic SignalTEK 10G enables users to test, troubleshoot and document network and data cable performance up to 10 Gigabit Ethernet standards. With a max throughput test, the tester verifies what the maximum error-free bandwidth the cabling or infrastructure can support and establishes what hardware or applications would work on an existing link. Ideal claims this saves significant time and cost compared to replacing data cabling. Once the upgrade is installed, SignalTEK 10G can be used again to test and prove performance to international standards. With built-in Wi-Fi connectivity it connects to the free Ideal Anyware cloud test management system to generate professional reports for the client. The Anyware Cloud management system also allows real time collaboration between Field Technicians and Project Managers, even those working from home. Project Managers can pre-configure the jobs and tests in the Anyware Cloud from any web browser, eliminating potential mistakes and reducing the time taken to prepare reports for customers. Via the TeamViewer Live Support feature, Project Managers can also connect from any location to SignalTEK 10G on the jobsite to troubleshoot failed links, minimising troubleshooting time and reducing call-backs. As well as providing accurate 10G transmission testing, SignalTEK 10G can also be used as a wiremapper and for troubleshooting and maintenance of active and passive copper and fibre networks. ideallnetworks.net



The T-BERD/MTS-5800 handheld network tester from Viavi is the one tool that network technicians and engineers need to install, turn-up and maintain their networks, the company claims. It supports both the legacy and emerging technologies required to handle various network applications including metro/core, mobile backhaul, and business services installations. Viavi reckons "the industry's smallest handheld" instrument can

test throughout the service life cycle, including fibre characterisation, service activation, troubleshooting, and maintenance. Advanced Ethernet test features such as TrueSpeed per RFC 6349, J-Profiler, Wire-speed capture/decode, and automated J-Mentor, "help field technicians test their networks faster and



more accurately than ever before", claims Viavi. Features include integrated timing/synchronisation testing including PTP/1588v2, SyncE, Wander and one-way delay test. It's also compatible with Viavi 4100-Series OTDR modules and Smart Link Mapper, fibre microscopes and optical power meters. viavi.com

Garland Technology's PacketMAX Appliances are designed to provide advanced features for both inline and out-of-band applications. The systems support 1G- 100G speeds. The system aims at reducing the overall volume of traffic sent to tools to reduce the possibility of oversubscription. PacketMAX's Advanced FPGA based design offers increased flexibility by offering; Large-window de-duplication ensures tool CPU and

memory resources are only being used for the packets that matter, Time Stamping with 5ns resolution, Programmable Packet Slicing / Stripping support for VLAN, MPLS, VNTAG, FabricPath, VXLAN, GTP- U, IP-in-IP, L3GRE, L2GRE. A benefit of packet slicing is in regulatory compliance. Legislation such as HIPAA, PCI and others demand data confidentiality, and stripping sensitive payload data from packets before they go to monitoring tools ensures that this sensitive data is not stored outside secure boundaries. Deploying a PacketMAX solution extends the life of your existing infrastructure by optimising

throughput and preventing port oversubscription. Existing security and monitoring tools receive a new lease of life by reducing traffic volumes sent to the tools. Adding the above features to your existing infrastructure, can significantly reduce the processing overhead from security or monitoring tools that use SR, LR, and ER MSA compliant transceivers at speeds of: 1G, 10G, 25G, 40G & 100G. Securing and monitoring your network is the ultimate goal. Network packet brokers are critical to accomplishing that goal by providing access and management of network traffic from multiple links to optimize the performance your network monitoring and security tools. garlandtechnology.com



How video surveillance is transforming the smart cities of tomorrow

As smart cities intelligently monitor and manage the world we live in, Rishi Lodhia from Eagle Eye Networks explores how video surveillance is paving the way

The UN estimates that 55% of the global population lives in urban areas, a figure projected to rise to 68% by 2050. As urbanisation speeds up, the UN predicts the world will host 43 megacities containing more than 10 million inhabitants. All of this is driving citizens and policy makers to rethink their understanding of city systems and make the most of available technologies to tackle environmental and other urban challenges.

But to deliver the anticipated improvement in the overall functioning of cities, these technologies need to be interoperable and integrated. Smart video surveillance technology is one area in which these needs are being addressed.

Seizing the opportunity

There is no doubt that to carry the weight of the smart city of the future, mobile networks will need to be fast and able to handle vast amounts of data. Similarly, the growing capabilities of AI will be critical to enable data and insights collected through IoT networks to be monitored, analysed, and acted upon in real time.

Fortunately, today's cloud-based systems and tools now enable smart cities to leverage their networks and establish a truly open systems architecture that facilitates inter-operation with both local and other remote

open systems – with minimal infrastructure investment. Cloud video surveillance technology is a rapidly developing innovation that is increasingly enabling cities to confront some of the real-world issues they face today.

The trouble with trash

Cities generate vast amounts of waste that, if managed ineffectively, generates serious public health and environmental challenges. Embarking on innovative 'end of pipe' waste reuse, recycling, composting or energy generation projects is just part of the solution, because the success of all such visionary waste management projects begins with an optimised trash collection process.

The emergence of integrated IoT networks is enabling cities to make smart waste collection programmes an achievable reality. Video surveillance cameras connected to AI systems that monitor public spaces can identify where unwanted waste is building up around bins, on streets or in parks, as well as areas where fly-tipping occurs. The technology can alert maintenance teams immediately and they can alter their route on shift to ensure that the waste is collected before it becomes a problem.

Real time traffic monitoring

The integration of IoT and AI technologies is enabling intelligent traffic monitoring

that enables authorities to provide updates on traffic congestion and incidents, issue early warning messages to citizens, and broadcast updates to police and other authorities. With everything linked together, transportation authorities can deploy integrated components like adaptive traffic signal controls, emergency management services, and roadside units to minimise congestion.

Using images captured from connected CCTV cameras to calculate traffic congestion density enables traffic signals to be updated in real-time. Paired with the latest video analytics software, CCTV cameras can deliver the latest data about traffic performance, enabling authorities to trigger alarms related to traffic congestions to control flow better. Utilising AI and analytics, authorities can also review the best way to design the urban road infrastructure, road signage and traffic management policies in general.

Reducing environmental impacts

Around the globe, both urban cities and more rural areas are increasingly having to counter the environmental challenges created by climate change. Organisations are developing more effective water management as a result of increased

flooding, for example, however the dams and control areas for this are often more remote areas without stable connections. With 4G and 5G connections and a cloud video surveillance system, environmental teams can easily monitor all these remote sites from one central platform, and alert local citizens of any imminent danger.

Smart cities are able to use environmental monitoring to automatically alert emergency services, trigger pre-planned response plans, and issue timely early warnings to keep people safer. For some cities, this will include monitoring the physical and built urban environment to optimise the health, wellbeing and safety of citizens. This can include anything from identifying areas of potential pedestrian overcrowding – particularly regarding social distancing measures – to responding fast to behavioural issues on the streets that could lead to violent or anti-social offences.

The cloud, IoT, AI, GPS, and big data are helping to transform the core functions of today's cities to make them smarter. Enabling the real-time constant stream of information cities need to respond fast to local conditions and cost-effectively provide the basic services their expanding populations need, will continue to help urban environments to thrive in a digital world. ■

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Please meet...

Wes Durow, CMO, Extreme Networks

What was your big career break?

My biggest career development took place when I decided to move from working at an advertising agency over to the client-side. I was fortunate to make this transition during the early ascension of multinational telecommunications and data networking equipment manufacturer, Nortel Networks.

While certainly a challenging period, the rise and fall of Nortel provided me with so many different opportunities - both personally and professionally. Having been in a number of marketing roles since this time, I have learned more about developing and delivering on integrated business and marketing plans and am now a true believer that the purpose of business and marketing is not only to sell but to inspire.

The experiences from my time at Nortel, and up until now, have helped me embrace the opportunity presented by technology transitions. That's what makes it so exciting to be at Extreme Networks as mobility, cloud and data analytics all intersect.

Who was your hero when you were growing up?

As a child, my hero was an American football player named Fran Tarkenton. He played for the Minnesota Vikings and while the team managed to lose four Super Bowl appearances through the '70s, he remained an icon to me.

Fran's career as a National Football League quarterback was defined by his determination. While undersized for a quarterback he was always able to evade the defence and lead his team forward. He was the epitome of perseverance for not only breaking the mould of what was deemed the conventional quarterback, but for always pushing the team to do their very best no matter the result.

Leading with the same conviction and tenacity which I so admired of Fran is something that I strive towards in my own career. Both in and out of the office, I always think about how I can best inspire and motivate those around me. After all, it's all about teamwork!

What's the strangest thing someone has asked you to do?

During my time in advertising, I was asked to help oversee the voice-over recording sessions for our clients, featuring big talents such as Patrick Stewart, James Coburn and Matthew Modine. I'm sure to many this sounds great! But the whole experience was rather strange for me as at the time, I was not familiar with any of their work.

What would you do with £1m?

I have been fortunate enough to have had a benefactor to help fund my learning. With this support, I was able to study at the University of Northern Iowa for my bachelor's degree where I majored in Marketing with a minor in Economics; and later at north-western University for a master's degree in Integrated Marketing. Having attained these qualifications and prior to joining Avaya (through Nortel), I had the foundation required for my first role in an agency serving as an Officer/Account Supervisor at Termerlin McLain/Bozell Advertising.

Access to education opened so many doors in my own career and I strongly believe this has a positive impact on others. So, with £1m, I'd like to follow suit and put this money towards helping fund others' education.

What's the best piece of advice you've been given?

To be empathetic. It can be difficult to know and understand the personal challenges that

everyone you connect with each day are facing. This is truer than ever with the pandemic impacting every aspect of our daily lives.

Trust that there is good in everyone and seek to find that good to help it shine. And, at such a challenging time, we should ourselves make a conscious effort to reach out to others to check in.

If you had to work in a different industry, what would it be?

As crazy as it sounds, I would love to work in the airline industry. My career in agency began working on the American Airlines account

so it is an industry that is very close to my heart. I recognise that right now is a particularly challenging time for the sector, but I hope it will bounce back once travel resumes.

If money was no object, where would you live?

I can't pick just one, there are so many cities I have visited and have loved! If it was for a year, I would have to say San Diego. The laid-back vibe and incredible weather make San Diego hard to beat. That said, if it was for a decade, it would be London. I love just walking the streets of London and though I am

no hard-core art fan I visit the National Gallery at least a couple of times each year as a reminder of the incredible world we inhabit.

The Beatles or the Rolling Stones?

It has to be the Rolling Stones. Both are iconic, but I think the Stones fuelled the music and the performance style of the bands I grew up loving such as Van Halen, Tom Petty and the Heartbreakers and others. Even today at almost any time I walk on stage to deliver a talk I ask the AV team to play 'Start Me Up' - this really gets me fired up for the presentation!

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