

# NETWORK INFRASTRUCTURE MANAGEMENT

LEAVE A LIGHT ON

## MANAGING A HEAVY TIGHTROPE

Between managing physical servers, bring-your-own-device initiatives and CRM strategies, let alone cyber security, back-ups and bandwidths – network management and infrastructure is no arena for the faint-hearted, writes **Gráinne Loughran**

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**E**mployees increasingly need to be able to access secure work data any time, any place, and on any device. Meanwhile, outages in online services can result in huge financial and productivity losses. Businesses and their networks no longer exist within four walls and as a result, network management has become a business in and of itself. With so much involved, it's no wonder it poses challenges to even the most savvy of organisations.

"Some of it has to do with what we call the borderless enterprise. Large companies used to be siloed, everyone coexisted inside of a single site or building. Today, the enterprise is not a location, it's a concept," says Charles Thompson of Viavi Solutions. "With the move to the borderless enterprise, combined with the evolution to the cloud, and now just the sheer volume of information that's downloading across these environments, it's extraordinarily difficult for the average IT worker who's tasked with making sure things go well; that everyone can access everything all the time, and nobody experiences degradations in performance or outages or inability to do their job."

But although network access is a vital part of doing business, it's not always among the top priorities in terms of investment. Rather, it can be taken for granted as a basic necessity which shouldn't require as much maintenance and commitment as it does.

"It's a bit like electricity for users. They want to just plug in and it's there," says Catherine Doyle of Dell EMC Ireland. "Because it's such an invisible, underlying part of your company infrastructure, it can be underinvested in. The investment tends to go to the revenue-gen-

erating top-line applications rather than the network."

As with other areas, challenges lie in finding compromises between often opposing priorities. For instance, employees may want to access secure data from a diverse range of devices, but an open network can result in security issues. "We're finding with the larger companies that we're trying to create network access for everybody, to enable the business to expand and not be restrictive, but at the same time make sure it's secure, so it's flexibility versus security," continues Doyle. "Another one is how large can I grow the network before I start creating reliability issues for myself."

Balancing cloud and physical storage and backups can similarly lead to difficult decisions as businesses weigh up the benefits of moving entirely to the cloud. Cloud storage is becoming more ubiquitous and easily accessible in terms of cost, but the total changeover to cloud services predicted by many may not come to pass, according to Gavin Lockhart of Ergo.

"A lot of people think that physical infrastructure in enterprises has gone away, but that's not the case," he says. "We've got Azure and Amazon but there's always going to be a need for civil infrastructure on premises. People still need to have their own hub on premises to run specific applications because of security reasons, or they're bespoke applications, or that they just won't run in an environment that is managed by a third-party provider."

But owning physical infrastructure on premises isn't without its downsides either. Not only is it costly, but as has always been the





**Francis O'Haire,**  
**DataSolutions**

case, to get the best value and experience it's important to know exactly what you're going to need from it – not just now, but into the future. “The other big challenge with owning that hardware is that you get five years out of it and then you have to replace it. That can be managed, and some companies will always give you a way to finance your hardware and pay for it over five years so you're essentially changing your Capex model into an Opex model,” continues Lockhart. “Planning and understanding where your business is going to be in five years is a big challenge, but you've got to make your best stab at it. The problem then is if you don't get it right and you have to upgrade a year later, the kit you buy then is out of sync from an age and a service perspective from all your other kit, you have warranty of different years, and trying to align that all your network, server and storage equipment is on the same level and age.”

Where the budget fails to stretch to suffi-

cient physical infrastructure, cloud can provide a cheaper option. “Every business in my opinion should have an online back-up, several copies of local back-ups, and servers should be replicated to a second location,” says Kevin O'Loughlin of Nostra. “If the budget for a second location isn't available, there are some very good cloud disaster recovery options available, like Azure Site Recovery, where you pay a fraction of the cost of a server but you can be back up and running in a couple of hours.”

But although cloud hasn't displaced physical infrastructure entirely, Darragh Lamb, of BT, says that cloud continues to grow quickly. “We are finding that our customers are looking to embrace cloud technologies more and more,” he says. “For an end-user, the reliance on physical infrastructure evolves as the transition to the cloud progresses. For the cloud service provider, utilising cloud storage places a definite dependency on the physical servers required to support this environment. They are hand-in-hand. As businesses become more cloud aware, the decision needs to be made as to how best to manage their data. Cloud adoption reduces complexity, improves business integration and productivity and makes it easier to scale up or down, according to business needs.”

With the various advantages and disadvantages of cloud and physical storage, it becomes difficult to decipher the best thing to do for your business in terms of managing of your network, let alone maintaining functionality on a day-to-day basis. “Workers bring their own devices and expect to be able to use them, and now you've got cloud as well, and boards of directors are saying you need to

use cloud, but it doesn't deflate anything, it just adds to what needs to be managed,” says Francis O'Haire of DataSolutions.

“Most networks these days, when you take all the network parts together – the switching and the routing and the servers and the virtualisation and the applications and the management – it's so complicated. There are so many different pieces, and companies are realising that they're going to have to simplify things as much as possible.

“When it comes to all of the devices coming on to the network sometimes you just have to realise you don't have to boil the ocean, you don't have to manage the whole device,” he says. “The better approach is for IT to treat themselves as a service provider and to give you the applications you need, secure those applications, and don't try to manage the device, just manage corporate applica-

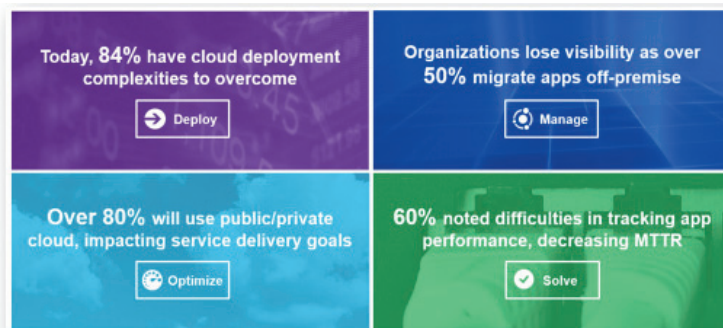


**Catherine Doyle,**  
**Dell EMC Ireland**

## Commercial Profile: Butler Technologies

# THE BORDERLESS ENTERPRISE

Supports 4 Pillars of IT



Networks across the globe have grown exponentially over the last two decades and our reliance upon them and the applications they deliver has become critical. Few businesses have failed to grasp the importance of the network, the performance of the applications, security implications and the real-world effects that occur as outages take place affecting customers. As businesses struggle to maintain competitive advantage in the digital economy, only one holistic approach to infrastructure management makes sense – to capture all the data packets traversing the network and so have a view of every single transaction.

Advanced analytics enable enterprise operations teams to access a sole source of undeniable truth about what happened, how it happened and when it happened. This can be useful to monitor anything from individual transactions to post-event remediation of cyber-attacks and their associated attack vectors (a requirement under new EU Data Privacy Laws known as GDPR).

The IT industry is moving rapidly to cloud against the backdrop of increased regulatory demand for data privacy. The “cloud” is expected to grow \$58 billion to \$191 billion by 2020<sup>1</sup>. At the same time, the cost of an average data breach increased from \$6.5 million to \$7 million in 2017<sup>2</sup>. Some 84 per cent of respondents to the Viavi State of the Network Study stated

concerns and challenges in relation to loss of visibility and control in migrating applications to the cloud.

Butler Technologies, based in Maynooth, is Viavi's Elite partner in Ireland and has worked in delivering enterprise and cloud solutions so that when the phone rings after an event, be it a cyber-attack or “system down”, then a single and comprehensive source of intelligence delivers the answers so that resolution activities can be started. Viavi Solutions is a market leader in delivering a highly granular view of real-time performance backed by all the evidence found in complete packet capture and is a leader in the Gartner Magic Quadrant for Network Performance Monitoring & Diagnostics (NPM) and has been for four years in a row.

Contact Aaron Joyce at Butler Technologies, for a copy of the ‘Annual State of the Network Report’ or ‘The 2017 Gartner Network Performance Monitoring and Diagnostics (NPM) Magic Quadrant Report’ by calling (01) 6292620 or (086) 678 3301, or email [aaron@butlertech.ie](mailto:aaron@butlertech.ie)

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Sources:

<sup>1</sup> KPMG 2015

<sup>2</sup> IBM 2016 Cost of Data Breach study



# NETWORK INFRASTRUCTURE MANAGEMENT

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tions and data.”

The major forthcoming solution to simplifying your network while also retaining as many benefits as possible is the hybridisation of physical and cloud infrastructure in network management.

“What’s really going to differentiate companies that are successful versus those that will become the laggards is those that create a true hybrid environment,” says Thompson. “Those that can seamlessly transition from a public cloud ERP application or CRM application and their cloud-based voice, with their on-premises order management system and inventory tracking, those that can truly combine these elements.”

Integrating the two systems takes time, but it can be worth it. However, it also involves a deep level of knowledge about your applications and their various dependencies which businesses may find challenging. “The organisations that I have seen do it the best have taken a very scenic approach to how they’re going to go about that transition,” continues Thompson. “It begins with the planning phase: how do I take what has traditionally been on-premises and transition it to off-premises, through a litany of questions regarding security, latency, and inter-system dependencies... Some applications are not more suitable to cloud evolution, and in some cases are even more expensive to run in the cloud. It’s a planning process to find what’s best to migrate, what’s the most efficient and effective way to migrate it, and what do you need to migrate in tandem, and understanding application dependencies – a lot of organisations don’t really understand which pieces depend on which in order to facilitate servicing applications for their end users, so we recommend application dependency maps so they can choose what to migrate.”

But the most basic aspect of network management to get right is simply reliable and high-speed internet access.

Ireland’s commitment to introducing fibre broadband across the country by the end of 2018 will go some way to ensuring that businesses have reliable and fast broadband speeds and therefore connection to data hosted on the cloud, but at the moment, according to William Newton, of WiredScore, many businesses don’t know their own levels of connectivity.

“On the one hand, internet connectivity is increasingly important to businesses, and on the other hand businesses have no idea how well connected they are, especially before they move into a premises,” he says.

This will become particularly important as new networks rely more on the internet,



**Gavin Lockhart,**  
senior consultant  
engineer, Ergo

adds Lambe. “More and more businesses are becoming cloud-centric, so the ability to connect easily to cloud services, regardless of where they are hosted, is vital.

“Businesses want fast, secure and reliable connectivity into cloud computing. The next generation of networks will be delivered through a combination of internet and private connectivity – an intelligent, hybrid network. Using this type of model can help businesses adopt the cloud capability, allowing them to benefit from the agility and scalability of the cloud, but without having to pay huge access infrastructure costs.”

The physical landscape of a premises is also key to its online networking needs – something that businesses are beginning to realise. “Tenants are demanding more from landlords. They’re demanding better built buildings where their online needs can really be taken into account so that they can grow and thrive in that space,” says Newton.

“In years gone by, having a vertical riser that could run a separate connection wasn’t considered something that you could show off about a building, but now it is.”

Backup connections, direct wireless and copper connections are some of the options that can ensure that a business remains online. But ultimately, the network is still physical rather than online based.

“At the end of the day, the network is physical. You can outsource some of it into the



**Charles Thompson,**  
Viavi Solutions

WAN territory, you can actually outsource your network management to the telcos and they will manage it and the service around that and a lot of companies do that. But it’s not all upgraded to the point that you would be able to totally outsource it,” says Doyle.

“Networks can be a bit clunky. It will find an issue and stop and won’t go any further until you fix it. Proactive network management that’s automated is really critical to keeping any service going.”

Ultimately, providing a network is becoming more commoditised. Although aspects of it relating to securing sensitive data remain under physical lock and key in-house, where applications can be moved to the cloud, network provision is becoming outsourced as a

service. “The notion that big companies are moving away from having their own physical infrastructure is a myth. But what we do see however is that rather than having it on their own premises, they might move it into professional data centres and have someone else manage it for them,” says Lockhart.

“A lot of time it comes down to how critical the network is to your business,” adds Thompson.

“If you’re in banking or online retail, the network is your business so you have to have that expertise in-house, but others can have a hybrid approach where they have some expertise in-house as well as leveraging outside sources and a forensic team.”

It may be tricky to navigate, but finding a sustainable solution to network management and infrastructure can save a business time, money and even its reputation for employee and customer satisfaction. Certainly, network connectivity needs now more than ever to be always on, reliable and accessible in order to successfully retain and win customers, as well as to maintain productivity.

But although network management may never be commented on until a problem occurs, the journey to hybridise cloud and physical networking infrastructure both on and off the premises, all while maintaining security and getting the best value for money, remains one of the biggest challenges facing network-reliant businesses today.

## Network security

One of the most important aspects of network management is security. Most recently the WannaCry ransomware attack compromised networks worldwide, demanding ransom in exchange for returned access to files. As devices are online all the time and accessible from more locations, business networks are vulnerable to attacks.

Mike Smith, of Sungard AS, says that data will be more secure in on-premises infrastructure than on the cloud. “People want to hold on to infrastructure

themselves when they have security concerns,” he says. “If I’m working with secure information and put it into a cloud provider, suddenly I’m trusting someone with personally identifiable information, payment information, all that stuff. I want to keep it on my floor with my staff controlling this particular resource. Hybrid is a way forward with that so information that is more sensitive, you hold near to you. Some people entirely trust the cloud, but I don’t see any banking institution wanting to



**Mike Smith of**  
Sungard AS

put its critical business services in the cloud.” Knowledge and monitoring of the network is as important as securing it to begin with, says Kevin O’Loughlin of Nostra. “We’ve identified that it’s not as much about securing a network down, which is obviously very important, but to know if you have been compromised. If someone steals a car, the car is gone. If someone steals data, you still have your data, so you don’t know it’s gone. Most organisations don’t ever know they’ve been compromised.

“The key thing to do is have a method to identify everything happening on that network and

having a monitored scenario, so that someone is actually looking at it, monitoring exactly what’s happening on a minute to minute basis and if anything happens that shouldn’t happen, they can report it and identify it immediately.”

He also points out that security is probably “the biggest gap” in IT knowledge in Ireland. “There are a lot of people who are putting in solutions to secure a network while missing the first step of knowing the network, and blindly putting in security solutions that won’t identify whether you have a problem or not,” he says.