*Paul Bonner, Group Head of Technology at **HardwareServices**, discusses the concept of the sandbox environment and how it can be used to assist the delivery of a smooth network deployment with minimal business downtime.*

There is no good time for downtime

It goes without saying that network downtime is an absolute must-avoid scenario. This is not a new problem but it's one that's grown in magnitude as reliance on the network has intensified.

Nowadays, network access is demanded 24/7, it has become part of our daily life and our tolerance of failure is small. Sitting on a train, we scroll through our Facebook feed, waiting for the bus we browse our favourite website. Even in a restaurant, if our companion leaves the table we invariably respond by checking our phones for new messages.

If the service we expect fails, we simply move to another supplier who can meet our needs at that time. The consequence of poor network availability is almost instant loss of business.

Even within a work scenario, employees expect remote access out of working hours. Some work flexi time, others just like to get ahead on their emails on a Sunday night. In fact, employees are often at their most productive after the working day ends. Global offices also mean that network access spans time zones.

There is no longer a good time for downtime.

Gone are the days when we can carry out important upgrades or new equipment rollouts over a weekend, safe in the knowledge that the effect of any unexpected problems will be minimal.

Neither can we ignore the need for these new deployments. New technologies are a key driver of success, without them we will simply cease to be competitive.

Anything scheduled needs to be as short as possible so our new strategy must be to ensure the unexpected problems and downtime simply won't arise.

The way to achieve this is through the use of a sandbox environment.

What is a sandbox?

A sandbox is a completely isolated environment in which technologies, configurations and integrations can be tested, changed and finalised with no impact on the live network whatsoever.

In short, the sandbox provides an environment in which all unexpected problems can be identified and resolved, paving the way for a smooth and non-disruptive deployment with minimal downtime.

Benefits of the sandbox

If testing a new technology, an organisation may set up a sandbox environment in house, configuring the new equipment as required and testing extensively.

If planning an integration or a full migration, the organisation may need to look to a partner with the facilities to provision a larger sandbox environment and the capability to simulate existing equipment. In this scenario, external equipment is set up to mimic an organisation's internal environment. From here, integrations, IP addresses, VLANs and configurations can all be assessed. Traffic simulators and load generators can also be used to test routes and capacity limitations.

For example, if new switches are deployed, how does the traffic flow through the network? If IP addresses are incorrectly configured or duplicated then a major outage may occur. Equally, if the network can no longer reach all of the servers or a server becomes overloaded, vital functionality such as a credit card payment system may be cut off. In the case of an e-commerce site, customers may be able to add items to their cart but not pay for them – an error that could result in a significant loss of business.

Through the use of a sandbox environment, all of these potential scenarios can be tested and resolved with no fear of consequence. The result is a deployment that runs according to plan with little or no service disruption or downtime.

Deploying a sandbox

The first step in deploying a sandbox environment is to identify what needs to be achieved. What equipment is required? What tests will be carried out? What are the outcomes that need to be realised?

Once these criteria have been established, the sandbox can be set up according to the planned network design.

At this point it may be worth bringing in expert guidance to help build and manage the test environment. The benefit of referring to a consultant lies not only in the facilities and equipment they can provide but also in the experience and expertise they bring to the table. Previous migration experience is a very valuable thing and knowledge of industry best practices can save a lot of time and guesswork ensuring the desired outcomes are achieved as quickly and cost effectively as possible.

Of course, this extra step adds a length of time to the deployment process but it can save vast amounts of time and money in the long run. In a world where downtime is an increasingly unacceptable scenario, the sandbox should become a pre-requisite for any new deployment.

Group Head of Technology at Hardware Group, ***Paul Bonner*** *has over 23 years of experience in the IT and networking industry and has become a recognised thought leader in the arena. With expertise across network design, security, IP and server technology and cloud computing, Paul has always been quick to assess emerging technologies and their implications for business and continues to drive Hardware Group's product and service offering accordingly.*

About ***HardwareServices***

HardwareServices (a division of ***Hardware Group****) provides a range of end-to-end services to support IT infrastructure and prepare business for the evolving technological landscape. ISO*

security and quality certified, with an impressive collection of multi-vendor accreditations and a team of highly skilled engineers, HardwareServices is well placed to help companies realise their IT aspirations.

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