

ITAnalysis – The mounting address problem

By Fran Howarth, principal analyst, Quocirca Ltd

There was time when every person had just one or two addresses associated with them—that of their home and, perhaps, place of work. The addresses specified in which building they lived or worked, on what street, the town it was located in and, for international purposes, the country. More recently, the growth in electronic networks has led to the number of such identifiers expanding. We are all now accustomed, for example, to having one or more email addresses. These don't specify necessarily to a person looking at or using the email address where that person is located, but those specifications are still required behind the scenes in order to route that email to the intended recipient.

Every time a device attaches to a computer network, it is assigned an internet protocol (IP) address. IP is the most commonly used protocol for sending data from one computer to another on the internet, other public networks and private networks. Each IP address needs to be unique so that the network knows where to send packets of information. The Internet Engineering Task Force describes the role of an IP address as follows: "A name indicates what we seek; an address indicates where it is; a route indicates how to get there."

Nowadays, all manner of devices are linked by IP networks, from smart phones to VoIP handsets, RFID and industrial automation devices. The number and scope of interconnected IP-enabled devices is proliferating rapidly. The use of virtualisation, where multiple virtual devices may exist on one physical one, adds to the problem since each virtual machine requires its own IP address if it is to communicate across the network. All of this means that the number of IP addresses in use is growing exponentially.

As a result, organisations can find themselves with thousands, or even tens of thousands, of IP addresses that have to be provisioned and managed in order to be able to control which

devices are connected to the network. If an organisation is not able to control IP address allocation and use, it could be unaware that rogue devices are connecting to the network, perhaps from former employees or business partners that could lead to sensitive information being compromised.

Failure to effectively police IP address allocation and use can also have consequences regarding service availability. Systems for allocating, classifying and tracking IP addresses in use in an organisation are also used for managing supporting technology. These include domain name system (DNS) servers, which are used to locate and translate domain names into IP addresses, serving as the glue that connects a network infrastructure with business applications, and dynamic host configuration protocol (DHCP) servers. DHCP is used for assigning addresses on the fly to devices such as printers, laptops and other mobile IP-connected devices and for associating where the device is on the network.

If DNS and DHCP network services are not carefully managed they may fail, which could mean domain names not being mapped to IP addresses and network clients not mapping to servers. For example, email systems require DNS in order to determine where the mail is to be sent. If the DNS service fails, emails will start to bounce. Email and many other applications that rely on IP are now business critical and their failure is unacceptable.

The answer to the problem seems simple: by putting in place a system to effectively manage IP address allocation and, by extension, DNS and DHCP services, organisations are better placed to ensure availability of IP-based services, as well as ensuring that only authorised devices connect to the network. However, many organisations attempt to manage allocation of these IP addresses using spreadsheets or databases, which can be all too easily tampered with or become inconsistent and contain errors.

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But help is at hand. To facilitate provisioning and management of IP addresses to all applications, devices and users that need them, organisations are increasingly turning to IP address management (IPAM) technologies. IPAM tools integrate processes surrounding the management of addresses to provide greater visibility into IP networks, enhanced data accuracy and simplified management of all tasks. By automating these tasks, organisations can cut management costs, increase productivity and better control resource allocation. This can help them boost governance and regulatory compliance efforts, as the audit trail that is generated allows them to better prove how resources are being accessed and by whom.

Is now the right time to invest? Given today's economic climate, businesses are, more than ever, looking to create additional value through the reduction of risk and by saving costs. For many, the economic downturn is seen as the best time to optimise the infrastructure that they already have in place, to look to trim unnecessary expenditure and to use existing resources more effectively. The benefits of IPAM are tangible, promising to slash costs from the bottom line and help achieve compliance goals. When budgets are limited, any expenditure is tightly controlled and must be justified in terms of the real benefits that its deployment will bring. IPAM technologies could be just the candidate for improving productivity, bringing down costs and ensuring the smooth running of those business critical applications that rely on IP.

Quocirca has recently published a report explaining the benefits of IPAM, which can be reached via this link: [Addressing a growing problem.](#)

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Through researching perceptions, Quocirca uncovers the real hurdles to technology adoption – the personal and political aspects of an organisation's environment and the pressures of the need for demonstrable business value in any implementation. This capability to uncover and report back on the end-user perceptions in the market enables Quocirca to advise on the realities of technology adoption, not the promises.

Quocirca research is always pragmatic, business orientated and conducted in the context of the bigger picture. ITC has the ability to transform businesses and the processes that drive them, but often fails to do so. Quocirca's mission is to help organisations improve their success rate in process enablement through better levels of understanding and the adoption of the correct technologies at the correct time.

Quocirca has a pro-active primary research programme, regularly surveying users, purchasers and resellers of ITC products and services on emerging, evolving and maturing technologies. Over time, Quocirca has built a picture of long term investment trends, providing invaluable information for the whole of the ITC community.

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