

High time for ISPs, enterprises to prepare for IPv6

South African organisations and service providers must begin preparing for the shift towards Internet Protocol Version 6 (IPv6) or risk facing significant operational and technical headaches when they're forced to implement the new protocol in two-to-three years' time. So says Rob Hunter, JINX Working Group chair at the Internet Service Providers' Association of SA (ISPA).

"The rapid exhaustion of IPv4 address space is turning IPv6 into a pressing issue for enterprises around the world," he continues.

IPv6 is the answer to an anticipated shortage of IP addresses as more devices - ranging from smartphones and gaming consoles through to a continually growing number of PC and Web servers are connected to the Internet, says Hunter.

Underpins all online communication

IP addresses denote individual devices connected to the Internet, from web servers through to PCs, and as such underpin all online communications, from web and email, to instant messaging, voice and video. The IPv4 address scheme is based on 32-bit addresses and theoretically offers about four billion IP addresses.

The Organisation for Economic Cooperation and Development (OECD) estimates that more than 85% of available IPv4 addresses have been allocated and that address space could run out completely by 2011.

IPv6 is based on a 128-bit addressing system that grows the amount of addresses available by an exponential amount. In the longer term, IPv6 is also expected to deliver benefits over IPv4 such as better security, enhanced support for the mobile Internet, and integrated quality of service features.

“As early as 1999”

Says Hunter, "IPv6 isn't new. The Internet Assigned Numbers Authority (IANA), the body that governs the allocations of IP addresses, announced as early as 1999 that it was officially ready to allocate IPv6 address space. Yet deployment of the new standard has been slow around the world."

Up until now, many service providers and enterprises have not seen a compelling business case for the rollout of IPv6, says Hunter. Network providers have argued that there isn't much IPv6 content to cater for.

Content providers have been satisfied that they have enough IPv4 address space needed to invest valuable resources in areas where they might not see a return on investment.

"As a result, companies and service providers have squandered valuable time that could have been used to gain experience with the protocol and to iron out any operational changes and hiccups," says Hunter.

While some South African service providers have tested IPv6 since as far back as 2002, there have been few large-scale deployments of the technology by enterprise customers or service providers.

Facilitated the rollout

ISPA has facilitated the rollout of IPv6 by providing a virtual local area network (VLAN) at the Johannesburg Internet Exchange (JINX) to facilitate testing for ISPs that connect to JINX. AfriNIC, the regional Internet registry, and the body that Africa gets its IP addresses from, has also played its part by initially making IPv6 allocations free.

"South African service providers and enterprises also need to start taking IPv6 seriously," says Hunter. "They should be taking inventory of their infrastructure to assess readiness for IPv6, ensure that all new infrastructure supports IPv6, and start getting IPv6 addresses from their service providers so that they can start trials with the protocol."

The IPv4 and IPv6 protocols will co-exist for many years, but companies should rather form part of an orderly migration to IPv6 than be forced to scramble to the new protocol in a few years time, concludes Hunter.

Annual iWeek conference

The impact and benefits of IPv6 will top the agenda at the seventh annual iWeek conference and exhibition to be held 17 - 19 September 2008 at The Forum in Bryanston, Johannesburg. Bookings for stands and sponsorships are now open.

While attendance at iWeek is free, attendees are requested to register prior to the event at

www.ispa.org.za/iweek/2008/apply.shtml.

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