



Foundations of Open: Technology and Digital Knowledge

Local 2020 Summit Submission

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IPv6 Now IPv6 for Australia's Future

What is IPv6 about?

IPv6 stands for Internet Protocol version 6. In Australia, we are currently using IPv4. IPv6 was developed by the Internet Engineering Task Force (IETF – www.ietf.org) in 1998 to deal with a looming shortage of addresses under IPv4. The address space pools for IPv4 are now projected to **exhaust around 2010 or 2011, if there is no change** to the existing rates of allocation. In practice this means that there is already a limitation on building new large networks based on the Internet Protocol. Australia's major trading and strategic partners are already in the process of transition to IPv6, including: Japan, South Korea, China, USA and Europe.

Australia's choices for IPv6

Australia has a clear choice in relation to IPv6. On the one hand, we could adopt a cautious policy of “wait and see”. This approach would mean that we would commence a transition to IPv6 when forced to, due to global IPv4 address exhaustion. Such an approach may mean that the transition would not occur for many years and could become highly expensive if it is required to happen suddenly like Y2K. In the interim, as networks grow more complex there will be a need for multiple implementation of network address translation which will be more difficult and costly.

Alternatively, it is possible to build a more advanced Australia using IPv6 in two ways. We could develop IPv6 in new larger networks and infrastructure projects. The Australian Government has a policy to develop a new fibre network based on fibre to the node or fibre to the premises (FTTx) that will supply more than 98% of our population with bandwidth of 12 megabits per second or more. Another policy seeks to ensure that every Year 9-12 high school student is equipped with a computer. These initiatives are very welcome to maintain or build Australia's capability in the International digital economy. But, to move Australia forward in line with the policies of our major trading and strategic partners these new initiatives should include full capacity for implementation of IPv6.

In addition, Australia could use IPv6 as “Platform for Innovation”. Such an approach could create significant new business opportunities for Australia's ICT sector and other sectors because ICT is an enabling technology. Potential innovation applications with IPv6 that are directly relevant to

Australia's geography and economic structure could include:

- Building management – for energy minimisation
- Sensor networks – for environmental monitoring and water management
- Supply chains – e-business
- Emergency services – interoperability
- Consumer electronics – embedded systems
- Automotive industry – vehicle telemetry

Priorities

- Skills – development of IPv6 skills at all levels from technical to strategic planning
- Transition planning – national coordination of transition planning efforts
- Infrastructure projects – incorporate IPv6 capacity into all major infrastructure
- Supportive government policies – gear government to be part of the national IPv6 innovation

Supportive Government Policies

- Government working with industry and research to develop strategic IPv6 opportunities
- Accelerate the dates for government transition to IPv6, in line with projected IPv4 address exhaustion
- Incorporate IPv6 into infrastructure projects, such as the FTTx network, computers for schools, broadband connections to schools, etc
- Foster innovation around IPv6 by 'whole of government' approaches to supporting the NICTIA 10 Year Strategic Vision for the Australian ICT industry
- Funding for national coordination of IPv6 transition, including international interoperability trials in e-business and e-government
- Funding to develop industry capability for strategic assessment of IPv6 based opportunities and skills development

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Declaration of Interest	Members of ISOC-AU include individuals, businesses and organisations who support development of the Internet for the benefit of all Australians.

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