Project Activities

Mapping
Documenting the state of readiness for IPv6 in Australia, and the Internet services and technology needed to support it

Enabling
Developing business models, Checklists, ROI tools, and an easy access device, to assist Australian businesses adopt IPv6

Awareness
Providing on-line resources, information, documents and seminars to build broader awareness of IPv6

Infrastructure
Assessing DNS infrastructure support with the IPv6-ready auDA Registry testbed

Associated Event

Australian IPv6 Summit
www.isoc-au.org.au/ipv6summit

Project Consortium

Internet Society of Australia
www.isoc-au.org.au

.au Domain Administration
www.auda.org.au

BuildersNet Pty Ltd
www.buildersnet.com.au

Australian Electrical and Electronic Manufacturers Association
www.aeema.asn.au

Australian Defence Information and Electronic Systems Association
www.adiesa.aeema.asn.au

Internet Protocol version 6 is on the way!

For twenty years IPv4 has been the brilliant workhorse of network technology

Its successor, IPv6, is being phased in by Australian trading partners and defence allies

IPv6 has the potential for:

➔ *almost unlimited IP addresses*

➔ *built-in security protocols*

➔ *simpler address administration*

➔ *widespread mobility support*

➔ *Quality-of-Service capabilities*

The IPv6 for e-Business Project can help you plan for an IPv6-enabled future, see:

www.ipv6.org.au

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IPv6 for e-Business

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What is IP version 6?

The Internet Protocol provides the standard format for addressing, describing, and sending packets of data across the global Internet.

Version 4 of the Internet Protocol has been an amazing success for over twenty years, but available IPv4 addresses will probably be exhausted well within the next decade.

The familiar IPv4 format of 123.456.789.255 offers only four billion addresses, not even enough for the world's current population.

The Internet Engineering Task Force designed Internet Protocol version 6 to provide more addresses, with better security, mobility, and ease of configuration. It is written in hexadecimal, e.g. 12AB:0:0:CD30:123:4567:89AB:CDEF.

This odd format allows for **340 billion, billion, billion, billion unique IPv6 addresses -** five million billion times the number of observable stars in the sky, and more than enough for all of the computers, networks, phones and people in the world!

Why bother with IPv6?

IPv6 will offer business and strategic benefits in trade, services, logistics, and defence.

Booming economies such as China and India are experiencing exploding demand for connectivity beyond the limits of IPv4: their growing Internet markets will be built on IPv6.

The Korean and Japanese govenments have already mandated large IPv6 deployment and education programs. The European Union has been supporting IPv6 pilot networks since 2000.

The US Defense Department and the Office of Management and Budget have set the looming deadline of June 2008 for their backbone networks to become IPv6-capable.

The major trading partners and defence allies of Australia have committed themselves to a future Internet based upon IPv6, and the implications are enormous.

Costs and benefits of IPv6?

New platforms trigger bursts of innovation, and IPv6 is no exception. Today what appears to be little more than an improvement in 'network plumbing,' has incredible potential for the next generation of technology.

An IPv6 Economic Impact Assessment from RTI International estimated the cost of IPv6 deployment over a 25-year period in the U.S. would be around one billion dollars per year ... but the potential benefits were more than ten billion dollars per year.

Features such as mobility, billions of addresses, auto-configuration and better security protocols will drive innovation in Internet commerce, services and technology, especially for:

- **Quad-play content** - data, voice, video and wireless - information diversity and mobility

- **Social interaction** - email, voice, messaging, games, peer-to-peer, markets, flexible online communities

- **Device networks** - inventory logistics, building environment control, sensor networks, RFID systems, security monitoring

- **Ubiquitous communication** - the Internet via every medium, everywhere, for everyone!

How is IPv6 deployed?

IPv6 was designed to co-exist with IPv4, to be implemented in stages such as:

1. Exploring pilot IPv6 projects on IPv4 networks
2. Running separate IPv4 and IPv6 infrastructure
3. Transitioning to dual-stack IPv4/IPv6 devices
4. Moving to native IPv6 and phasing out IPv4

At all of these stages businesses will need to:

→ **Assess** their requirements, risks and benefits
→ **Survey** existing network infrastructure
→ **Educate** technical staff professionally
→ **Resource** network and security infrastructure
→ **Phase-in** and test IPv6-capable devices
→ **Inform** and set policies for general staff
→ **Monitor** and maintain systems and procedures

Much computing and network hardware is already IPv6-capable, so the easy transition path is to select IPv6-ready devices during normal business upgrade cycles, and educate staff over time.

However, moving successfully to IPv6 is only possible with strategic understanding in the boardroom, long-term planning by management, and professional resources for technical staff.

IPv6 in Australia

Information is the key to successful deployment. The IPv6 for e-Business project is documenting, developing business tools, raising awareness and assessing readiness for IPv6 in Australia.

Find out what IPv6 can offer you, at:

www.ipv6.org.au