Telstra’s mobile network
IPv6 deployment

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Telstra made IPv6 available to its customers on its mobile services since September 2016 on specific products.

It has been a 5 year journey to reach this milestone in mobiles, and it will have a significant impact on Australia’s IPv6 capable rate.

The main reason for the decision to start deploying IPv6 for mobiles has to be IPv4 exhaustion.

Enterprise IPv6 support was launched 5 years ago already, and fixed networks is progressively being rolled out.
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“IPv6 is Live! Real World Success Stories”

Situation

Depleting public IPv4 address range

Non-interworking private IPv4 address ranges duplicated between domains, that now require interworking

$\rightarrow$ NAT

or

$\rightarrow$ IoT

Continual investment to extend IPv4 resources vs IPv6 to future proof our network
As IPv4 addresses deplete, it will be more expensive to extend IPv4 resources
- Reduced dependency on NAT
- Remove the need for regionalisation
- Prolong the delay to push applications to move to IPv6 – therefore not using IPv6 natively

Dual-Stack is an effective transition technology but does not solve the IPv4 depletion problem

Investment in IPv6 opens the door to new opportunities
- Internet of Everything
- VoLTE
- ViLTE
- WiFi Calling
- Simplification of Backhaul addressing and management
Telstra’s mobile network operates with the following:

- Non-Regionalised network due to legacy centralised Value-Added Services
- Requirement to reduce the number of APNs we operate with
- Must cater for users on legacy handsets that do not support IPv4 and cannot be easily modified
- Must cater for users on new handsets that are on IPv6 only
- Must cater for users that BYO devices that may be configured manually
- Must cater for users on Mobile Broadband with Operating Systems beyond our control
- Must cater for users that decide to do a SIM swap to another non-IPv6 enabled device
- Support VoLTE
Two existing APNs – one for Handsets, one for Mobile Broadband and Tethering

464XLAT + NAT64 + DNS64 for the Handset APN only

IPv6 enabled DNS for all other APNs
Network Configuration

Dual-Stacked IP network with 6VPE

SIMs configured for Dual-Stack

Network responds to Device request

Locked Device configurations
Launch Considerations

Informed Front of House and provided training, as well as Enterprise support and sales personnel

Updated internal Knowledge Base

Briefed Operations and provided training

Created moderated forum with official details on the network change

Provided direct email contact to Telstra Engineering

Contacted the technical community via mailing lists and public forums before launch
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Staged Deployment

Network Ready for IPv4v6

Launch IPv4v6 device

Network Ready for IPv6 only

Launch IPv6 only device

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Thank You

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