

FX Networks: IPv6 Case Study

IPv6 Hui, August 2009

FXnetworks

Who?



- ⇒ FX Networks, National Telecommunications Backbone and Business ISP.
- ⇒ Finalist in TUANZ Next Generation Network Awards, 2008.
- ⇒ ISP to those that need real horsepower. Private WAN networking for those who demand the same.
- ⇒ Native IPv6 dual stack support on the ISP went into full production in June 2009. This support costs our customers no extra. It's just normal for us now.

IPv6 in Gisborne!



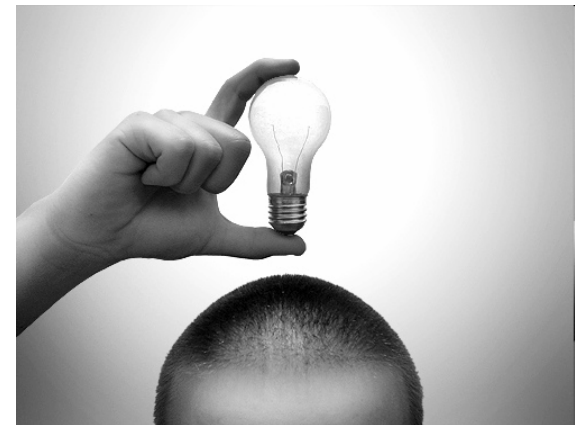
2402:6000:0701:0000::/56

via

2402:6000:F000:0::103/64

What?

- ⇒ Parallel support for IPv4 and IPv6 (Dual Stack). The Global Internet. It's about reach.
- ⇒ Dual stack is consistent with our strongly held philosophy of 'end to end networking'. The network *facilitates* innovation, it does not necessarily *create* innovation.
- ⇒ Journey began over 18 months ago.



Why now?

- ⇒ We wanted to be ready before our customers demanded it.
- ⇒ We recognised the world is changing regardless of what NZ does.
- ⇒ We recognise good things take time. Doing it early is less expensive and easier than doing it late.



How?

⇒ IPv6 is not a Project.

⇒ It is a modification to Business as Usual.

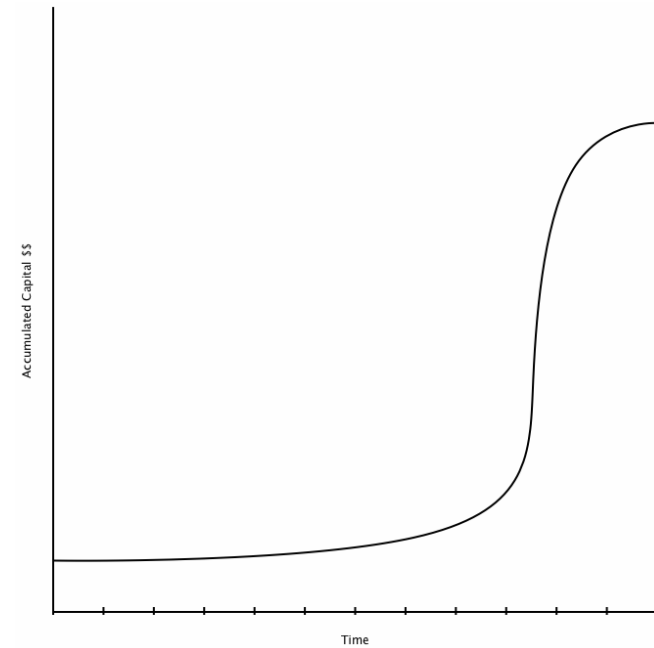
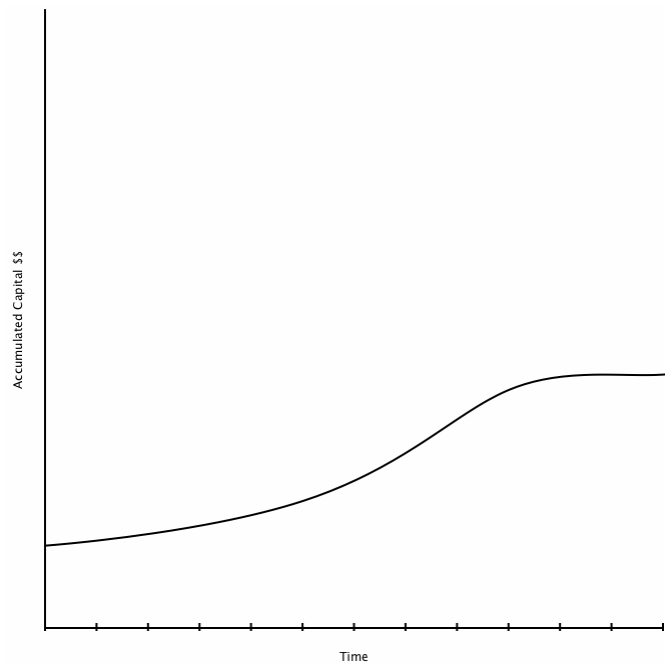
⇒ Treat it as such.

Proactive vs Reactive

- ⇒ IPv6 is essentially an infrastructure issue.
- ⇒ It's about the continued growth and reach of the Internet.
- ⇒ Stability is important with infrastructure.
- ⇒ Incremental planned change is far better than rapid unplanned change in the context of stability.



Your choice



⇒ Essentially a choice between an orderly progression or chaotic change.

How?

- ⇒ Started 18 months ago with a small team. 1 'IPv6 guy'. Must be led by Senior Tech Architect who is committed to operationalising it to the broader team.
- ⇒ 18 months ago: Experimental approach. Tunnels, Debugging Nightmare, Path selection, MTU's, maintaining divergent policies. Technically complex. Too hard.
- ⇒ 6 months ago: Native IPv6 into NZ, combined with a major domestic architecture upgrade which was driven by other needs. 12 month timeframe to consolidate learnings. IPv6 guy evolves into a dual stack team.
- ⇒ Today: Vendor Support (features are still maturing), High Level elements are still an issue. Global interconnectivity is still evolving (déjà vu).

How?

- ⇒ You will not be able to recall an IPv6 address. DNS/Active Directory/Address Management etc are really important.
- ⇒ INZ workshops really helped – a peer group of colleagues is important. Don't be precious about your IP – it's more important to be globally competitive.
- ⇒ Operational awareness is important but maintaining that is hard whilst it is not an everyday thing.
- ⇒ Retaining 'clue' is something that needs to be considered. Do you want core operational capability?



Conclusions

- ⇒ Get on with it now!
- ⇒ It's not as hard as you may think it is.
- ⇒ IPv4 exhaustion is undeniable.
- ⇒ Waiting for a car crash will hurt more.
- ⇒ Demand your vendors to support IPv6. Coordinate with your peers to aggregate demand.
- ⇒ Acting now is the responsible thing to do.

