

# **IPv6 Deployment at University of the South Pacific**

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I applied for a IPv6 allocation from our RIR (Regional Internet Registry), APNIC. I requested a 'Critical Portable Allocation' as we host the .FJ ccTLD. The process is straightforward and the allocation was made within a few days.

We are fortunate in that our upstream provider, AARNet, already runs native IPv6, so we were able to establish full IPv6 BGP peering rather than tunneling IPv6 over IPv4. Although Most of our core devices support a dual stack (IPv4 and IPv6), as a precaution we decided to run IPv6 on a separate core infrastructure to our existing IPv4 Core with the intention of merging the 2 stacks/routing into one core infrastructure once we are familiar and happy with the setup.

The setup of IPv6 BGP peering session was pretty straight forward as BGP already supports IPv6 routing and the concepts are pretty much the same as BGP for IPv4. Successful BGP peering achieved 1st August 2007 12pm over our AARNET link. We received confirmation from AARNET NOC and Cisco San Jose of successful internet propagation of USP prefix 2001:dd8::/48 on August 2nd.

For internal IPv6 routing we are currently using static routes with the long term goal of using OSPFv3 once we start building up the IPv6 network. At this point in time only certain internal subnets have been activated for IPv6.

### **Issues:**

On Cisco Routing platforms, the IOS 'Service Provider' firmware images do not include IPv6 support, so we needed to upgrade our border routers to the 'Advanced IP Services' firmware image.

Some of our firewalls (non-Cisco) were not really IPv6 configuration friendly and only support IPv6 static routing. At times IPv6 static routing through them would fail. Also with the long term goal of moving to OSPFv3 these devices could be a problem as the current vendors roadmap does not include OSPFv3 support. We decided to replace the misbehaving devices to get IPv6 routing back on track. At this point our IPv6 Core is purely Cisco System Equipment until we can verify/Fix the Firewall routing problems with the vendor.

At this point, our web Proxies (squid) do not support IPv6 traffic so IPv6 web traffic is bypassing them. There is a v6 patch for the squid which we are evaluating in a test environment with a view to deploying soon.

Since all our Linux servers run fairly recent distributions, most had v6 running already and just picked up an address and worked. We added quad A DNS records to both windows and Linux/BIND DNS servers and services like ssh and www (Apache) just worked over v6 straight away.

As well as Linux desktop clients, we have been testing Windows XP. Although it supports IPv6 this is limited to certain applications.