"IPv6: The water is fine, jump in!"

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ISC's experience with IPv6

    - f.root-servers.net

    - corporate use

IPv6 enabled root servers

IPv6 in DNS and DHCP

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ISC's operational experience with IPv6:

Have been running dual stack at the core since 2002.

All major services (bar one) have been IPv6 enabled since 2003.

F-Root has had a "unofficial/official" IPv6 address (2001:500::1035) since 2004, and 1/3rd of our F-Root mirror nodes worldwide are IPv6 enabled.

What have I learned - "Avoid eui-64/autoconf addressing like the plague, it's a operational and a administrative nightmare unless paired with Dynamic DNS."

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IPv6 enabled root servers

Currently five of the 13 root server operators have published IPv6 addresses.
(B, F, H, K & M), although they are not in as glue records as of yet.

Delegations in the root have included AAAA glue records for some time -
including delegations for TLD's such as .at, .be, .biz, .cn, .de, etc.)

Due to the special role the root servers play there have been several studies
undertaken to make sure there were no serious side effects when IPv6 was
enabled and put into wide spread production at the root.

The Security and Stability Advisory Committee (SSAC) & Root Server System
Advisory Committee (RSSAC) performed these studies late last year and early
this year and presented in their final reports to IANA in March 2007 that there
were no major concerns.

Ball is now in IANA's court. No ETA at this time.

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DNS software

Most current versions of DNS software out there (commercial and open source) already have some form of IPv6 (transport and AAAA records) support.

DHCP software

There are several products out there (including ISC's which is in alpha form) supporting DHCPv6. There was a interoperability bake-off the week before the IETF meeting in March 2007 where there were no major interoperability issues found.

Report: http://www.ietf.org/proceedings/07mar/slides/dhc-8.pdf

Conclusion

While the IPv4 grim reaper isn't at our collective doorstep yet, it's a growing dark spot over the horizon and heading this way. (see ARIN statement)

Do test out IPv6 on your own network (in a small-scale test environment at least) – see which tools and solutions may need to have IPv6 support added and push your vendors to support it. Better to be ready now and know what's coming.

Don't use eui-64 addressing. ;)

In the meantime - peer with ISC. (IPv4 and IPv6) ;-)