

# IPv6 Panel Discussion

IETF 54 Plenary

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# Our Background in v6

- IPv6 stack implementer
  - Implementation started in 1996 in Microsoft Research (by myself and Richard Draves)
    - Multiple web releases in subsequent years, targeting NT 4 and (later) Windows 2000.
  - Implementation moved to Windows Networking group in 2000.
    - Couple of web releases targeting Windows 2000.
    - Shipped IPv6 stack in Windows XP.

# More background

- Public 6to4 relay operator
  - Established first relay.
- OS services developer
  - Internet Explorer, ftp, telnet, RPC were all IPv6-enabled in XP release.
  - IPv6-enabled IIS, File and Print sharing, Media Server, more, are under development for this year's .NET Server release.

# Implemented, used

- Stateless address auto-config (It “just works”).
- DDNS registration of AAAA records
- Temporary (aka “privacy”) addresses
  - Off by default in server product.
- Site-local address support
  - Needed scoped address support for link-local.
  - Additional work for site-locals was small.
  - Anycast especially useful for service discovery.
  - Customers like site boundary feature.

# Implemented, used

- ISATAP for automatic tunneling inside corporate network environments
  - Router Discovery impacted by DNS config.
- 6to4 for automatic tunneling in the Internet
- “portproxy”
  - a cross-protocol TCP port forwarder.

# Implemented, used less

- 6over4
  - ISATAP serves similar purpose, but doesn't require *multicast-enabled* IPv4 network.
- Configured tunnels
  - 6to4 is easier to set up and use.
- IPsec
  - Current IPv6 implementation doesn't yet support IKE, requires manual keying.
  - We consider this important, plan to fully support IPsec for IPv6 in future release.

# Prototype implementations

- NAT-PT, SIIT
- Mobile IPv6

# Not implemented

- Stateful address autoconf (via DHCPv6)
- DSTM
- A6 / DNAME
- Routing protocols / Router renumbering



# Considering / Underway

- Multicast DNS
- Prefix delegation
  - Not clear which solution to implement.
- PPP support
- Node information queries
  - Address to name translation.
- Teredo
- V4 mapped addresses

# Specs to augment/revisit

- Site Prefixes in Neighbor Discovery
  - Draft expired, needs reissue and update
- Default Router Preferences, More-Specific Routes, and Load Sharing
  - Draft needs approval and IANA assignment

# Fun Stuff

- Direct Play
- New Peer-to-peer apps

