Agenda

• Recap from IETF 98: differences from RFC 6555
• New Section: NAT64 + DNS64
• New Section: Limitations
• Next Steps
Hostname Resolution

cgetaddrinfo()
Hostname Resolution
Asynchronous

Start DNS
AAAA
Start TCP
IPv6 SYN
Done
A
Start TCP
IPv4 SYN
Hostname Resolution

- AAAA received first → start IPv6 SYN
  - A records added to list when received
- A received first → start 50ms timer
  - AAAA received before then → start IPv6 SYN
- timer fires → start IPv4 SYN
Sorting Addresses

- Destination Address Selection — RFC 6724
- Rule 8.5 — leverage historical data
  - RTT
  - Used addresses
- Move first address of second family back up
Connection Attempts

- Walk entire list of addresses
- Start next attempt after $\mu_{RTT} + 4\sigma_{RTT}$
NAT64 + DNS64

• IPv4 literals
  • Synthesize IPv6 address (RFC 7050, 6052)
• Host Names with Broken AAAA Records
  • Wait 2s, query A record, synthesize
• VPN
  • Query A from VPN DNS and synthesize
Limitations

- PMTUD
- Application Layer
- Operational Issues
Next Steps

• Addressed comments

• Implementation in production

• Working Group Last Call ?