Your IPv6 Turn-On Is Late

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The Story So Far at U. Hawaii

- 13.25 years of functional IPv6
- 8.5 years of operational support-parity IPv6 vs IPv4
- Ours is an operational Dual-Stack network
- All of our network staff are IPv6 capable
- Our only IPv6 training is on-the-job
- DNS, NTP, Email available over IPv6
- Our network, including wireless and VPN provide IPv6 connectivity
- But: We offer almost no content on IPv6
Dissent

“IPv6 isn't ready yet. We're waiting for it to mature”
“The IETF messed up. They got it wrong.
“IPv6 addressing reduces user privacy”
“This isn't what we expected.”
“IPv6 is unfamiliar and we can't afford to prioritize training for it.”
“Our users aren't requesting it.”
Dissent

“IPv6 isn't ready yet. We're waiting for it to mature”

- It works, it's functional
- It's no more or less secure or private than IPv4
- It's bearing traffic on your network now
"Our users aren't requesting it."

- Users don't request Layer 3 protocol upgrades, why would you expect them to?
- Our users have lived with it for over 8 years and IPv6 is no more or less problematic than IPv4
Dissent

"IPv6 is unfamiliar and we can't afford to prioritize training for it."

- All of our network staff are IPv6 capable
- Our only IPv6 training is OJT
- It's not unfamiliar in practice: those who have deployed it usually say that it's like managing IPv4, with longer addresses
- The difference between orgs that deploy and orgs that don't is simply rationale


Dissent

“IPv6 addressing reduces user privacy”

- stop reading outdated posts/articles
- IPv6 Addressing on any OS less than 10 years old is more private than your IPv4 address
“The IETF messed up. They got it wrong.”

- The IETF does not lack for:
  - people as insightful and sophisticated as you
  - people willing to belabor a point
- The IETF is not a vendor. You are part of the process by which IPv6 will fill your future needs
- If there are things about IPv6 operations that you want to effect change in, become part of the process
Who's Accountable?

For IPv6 to be an IPv4 replacement, a tipping-point majority must deploy it, by both:
- providing connectivity
- providing content and services

If “critical mass” is the needed milestone, then anybody who's in a position to deploy IPv6, but doesn't, is the obstacle to IPv6 becoming useful.
Who's Accountable?
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You Are
When U. Hawaii joined Internet2 in 1999, the understanding was that we were part of a community which developed technologies and practices that could be shared with Internet1 to improve it for the common good.

Has that changed?

I say no.
Internet2 IPv6 Working Group

- IPv6 WG is chartered to advocate and promote IPv6 deployment
- We're not here to account to you for a challenge-free work day
- We're here to meet those challenges with you and work with you to make the Internet better for everyone.
Technology Exchange 2017

- We'd like to bring Sunday tutorials for bringing IPv6 to your current network, as a solution, not as a nerdy political statement
- Watch the program, plan travel accordingly.
IPv6 Transition In Progress
(snapshot 04/03/17)

Around 111 Member Universities On Internet2 are providing IPv6 connectivity
25 Member Universities have web sites reachable by IPv6
  9 of those are outsourced to CDNs
52 Member Universities can receive IPv6 email
  48 of those are outsourced to Google or Passpoint
48 Member Universities answer DNS over v6
The Content You Consume

- Is mostly reachable by IPv6
  - Via I2 TR-CPS
    - Google
    - YouTube
    - FaceBook
  - Elsewhere
    - Akamai, other CDN
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You Are