

# IPv6 is coming but IPv4 isn't going

Panel Discussion: When can we turn off IPv4?  
RIPE NCC::Educa IPv6-only

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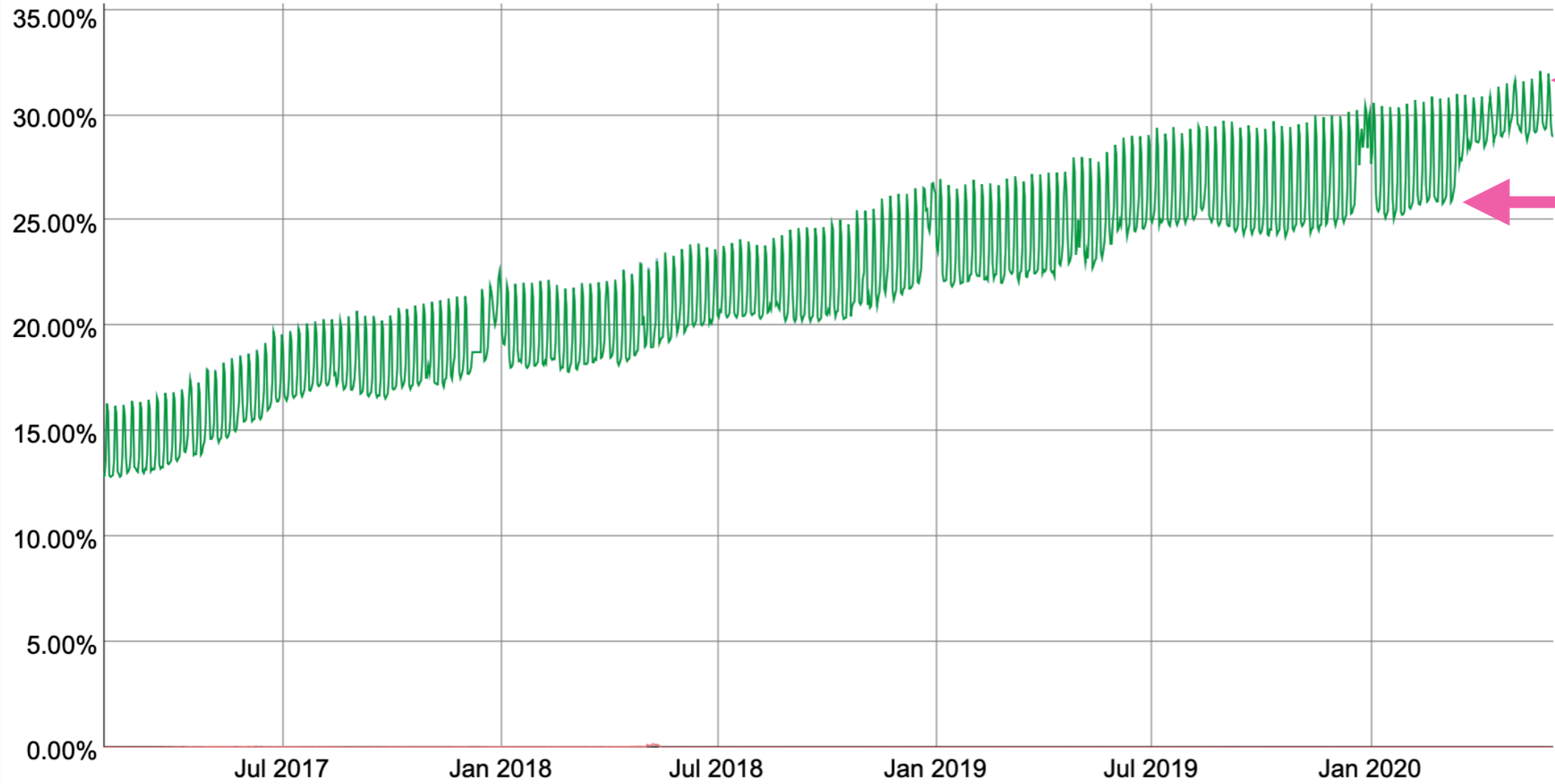
# Making things hard or easy

- If you're a fast growing ISP:
  - IPv6-only is very easy
  - IPv6 with IPv4aaS is relatively easy
  - IPv4-only is hard/expensive
  - dual stack is harder than IPv4-only

# Making things hard or easy

- If you're a slow-growing enterprise:
  - IPv4-only is relatively easy
    - the real problem is internal RFC 1918 addressing
  - full dual stack: twice the work, not twice the benefit
  - IPv6-only: very rough transition
  - mostly IPv4-only + a little IPv6 is probably the sweet spot

Native: 28.99% 6to4/Teredo: 0.00% Total IPv6: 28.99% | Jun 3, 2020



home IPv6

work IPv6



# IPv4-as-a-service

- IPv6-only clients → IPv4-only servers: 😊
- IPv4-only clients → IPv6-only servers: 😬
- So:
  - clients can move to IPv6-only
  - servers *can* remain IPv4-only, but dual stack is better

# IPv4-as-a-service

- ISPs need to do the IPv6 → translation
- 80/20:
  - the last 20% of traffic to IPv4-only services: fine
  - but translating the first 80%? Not so much!
- ISPs with IPv6-only customers will push big platforms to dual stack to save money on translators

# Do we even want 100% IPv6-only?

- Happy eyeballs: if IPvX doesn't work, application switches to IPvY within milliseconds
- With IPv6-only (or IPv4-only) you have to wait for slow, dumb protocols like BGP to reroute
- So having separate IPv4 and IPv6 connections is a great way to get more redundancy without running complex (routing) protocols