

# IPv6

## Current deployment status in Sweden

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# Shortly about us...

- Operates the Internet Exchanges in Sweden
- Operates shared critical infrastructure. For example
  - Some of the .SE TLD servers
  - i.root-servers.net
  - TLD services using anycast for 15 TLDs
- All but Anycast supports IPv6 today in full operation
- In addition we (me) are quite active in the standardization in the IETF

# Operators

- A large sub-set is offering trial services for IPv6
  - Delivery methods varies (some native, mostly tunnels)
  - But without SLAs
  - But all operators are working on building out IPv6 delivery
  - Missing standardization for broadband networks (xDSL&FTTx) is an issue

# Broadband networks

- 3 Municipal fiber networks provide IPv6 services, but not with SLAs and only for testing
- 3 more have been allocated IPv6 blocks
  - But have so for four years...
- But interest in IPv6 is large
  - But also harmed by the lack of Broadband standards

# Operators

- At Netnod we see
  - 24 allocated addresses
  - 15 in use
  - 52 connected networks
- Unfortunately we are not allowed to present traffic data...

# One major operator view

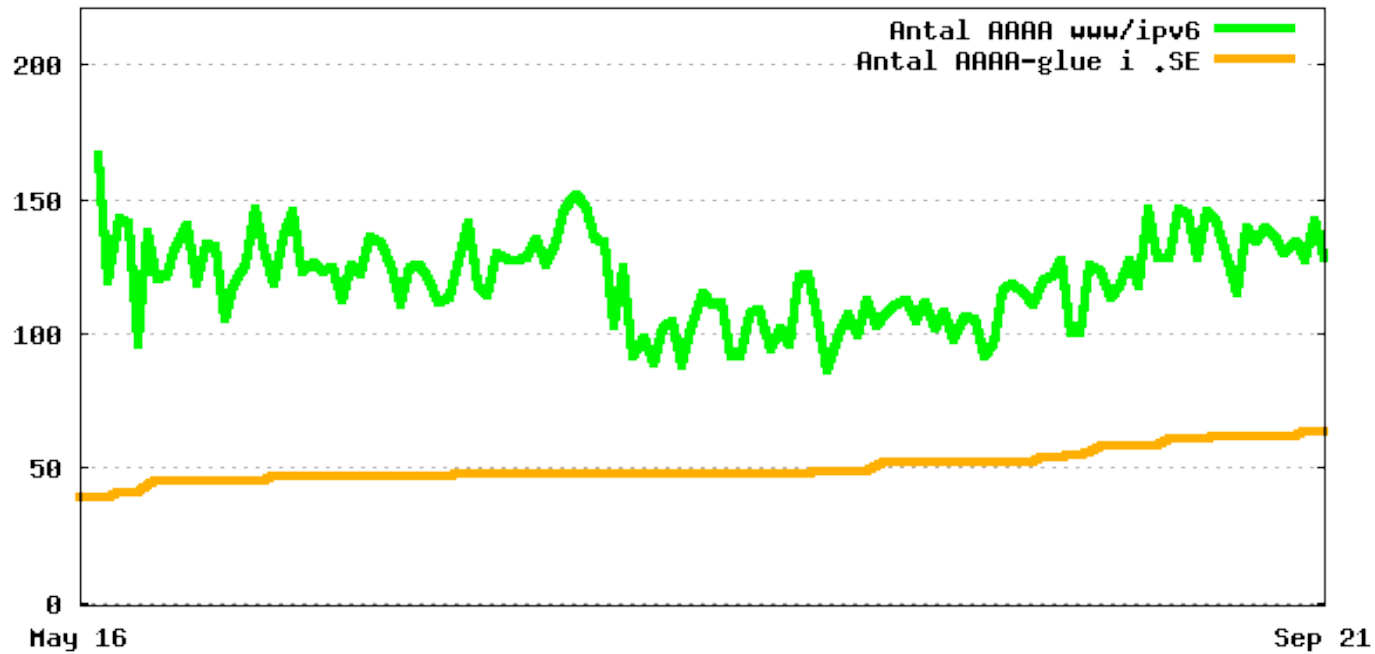
- 50 Mbps peak for 6to4
- 150 Mbps peak Teredo
- 2 per thousand of peering traffic is IPv6

# .SE IPv6 in numbers

- RIPE NCC has done 57 IPv6 delegations to Swedish providers (1 Supernational)
  - 1 /20
  - 1 /25
  - 37 /32
  - 7 /48 (IX prefixes)
  - 12 prefixes are registered as 32 <> 48 but are either /32s or will be returned to the pool for a larger block
- There are 387 ASNs delegated to Sweden

# .SE IPv6 in numbers

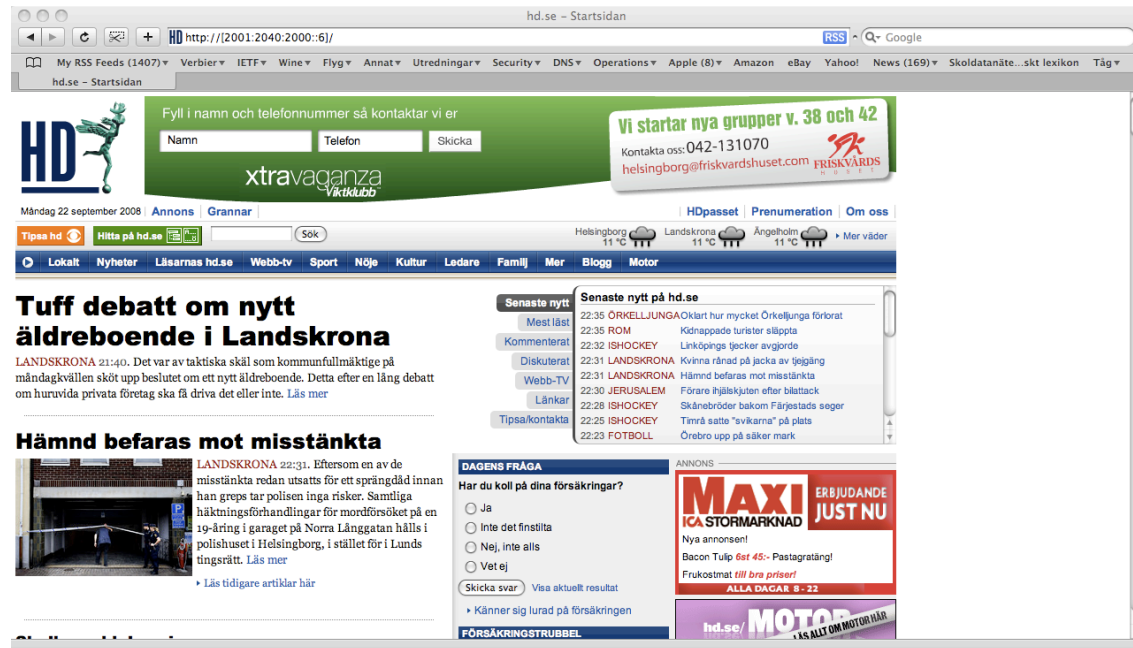
Plot av antal AAAA (www/ipv6.domain.se) under .SE



Data taken from .SE

# Content providers

- One regional newspaper group have actually enabled all their content over IPv6



# Content providers

- Having asked around
  - Major news-papers don't have a real plan for migration
    - The current IP version 'works'
  - National radio 'plans for 2009' deployment

# Promotional activities

- Netnod ported all services to IPv6 in Q1 2008
- Netnod held IPv6 workshop for all the Swedish ISPs in May
- .SE in co-operation with others will hold Firewall IPv6 interop testing in October
  - Also testing of IPAM

# General observations

- Operators are aware and testing
  - Also deploying in core
  - Many are preparing for a commercial (i.e with SLAs) services Real Soon Now
  - Still missing an architecture for broadband
- Content providers seems generally unaware
  - Or don't care

# General awareness

- From the .SE study
  - 3 of 10 managers have a plan
  - Only 22% of respondents have a timeline
  - Varies from 1 year (9%) to 5 years (9%). Majority in 2-3 years
- Clearly more needs to be done in the enterprise space!

**Thank you!**