IPv6 and Cloud Hosting
The RIPE NCC

- Regional Internet Registry for Europe, Middle East, parts of Central Asia
- Created by the RIPE community in 1992
- Technical and administrative support for the RIPE community
- Provides Internet number resource allocations and assignments, registration services, coordination activities, other technical services and tools
The Internet Registry System
Cloud Hosting

• Users move to cloud solutions for:
  - Cost reduction
  - Business agility
  - Improvement of IT services

• Growth in user numbers limited by IPv4 address space available to the provider
Provider Challenges

• IPv4 does no longer scale
• Customers demanding IPv6 support
• (New) competitors offer services over IPv6
• Increasing IPv6 mobile traffic; many mobile apps are SaaS-based
• ‘The Internet of Things’ needs IPv6
How does IPv6 fit in?

- **Huge address space**
  - Large prefixes allow for better (internal) aggregation
  - Public addresses = no need for NAT

- **Offers auto-addressing options**
  - SLAAC, DHCPv6

- **Improved L2 to L3 mapping**
  - Neighbour Discovery replaces ARP
More IPv6 advantages

- Nearly unlimited scale
- Easier address management
- Possibility for enhanced services, evolution and cost savings
Points of Attention

• App Store requires IPv6 support
  - If your services include support for mobile apps, they need to be IPv6 capable or IP-agnostic

• IPv6 features to request from vendors
  - Document ripe-554 (Requirements for IPv6 in ICT Equipment) can provide support

• Information and training for staff
  - Document ripe-631 can help (residential) helpdesks with troubleshooting issues
Cloud providers offering IPv6

- Cloud providers now started to offer services over IPv6
- Mainly IaaS and PaaS solutions
  - AWS
  - Azure
  - Cloudflare
  - HP (also SaaS)
  - IBM Softlayer
Situation in the Netherlands

- RIPE NCC has ~900 active members in the Netherlands
- Demographics show that 27 out of the 32 Dutch RIPE NCC members in ‘hosting’ category announce IPv6
- No statistics for cloud providers :(

IPv6 RIPEness

• RIPE NCC members score up to 5 “stars" for each step taken towards IPv6 deployment:
  - Holding an IPv6 Allocation
  - Announcing (parts of) the IPv6 Allocation in BGP
  - Registering a route6 object in the RIPE Database
  - Creating domain object(s) for Reverse Delegation
  - Offering access or content over IPv6

• Statistics: http://ripeness.ripe.net
IPv6 RIPEness in the Region

Netherlands (898 members)

Belgium (239 members)
Questions