RIPE NCC

IPv6 Addressing Plans and Subnetting

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RIPE NCC - who are we?

RIPE NCC

- Located in Amsterdam
- Not for profit organisation
- One of the 5 Regional Internet Registries

5 RIRs


ARIN
American Registry for Internet Numbers
RIPE
NCC
APNIC
lacnic
AFRINIC
The Internet Numbers Registry for Africa

We distribute Internet number resources

- IP addresses
  - IPv4
  - IPv6
- AS numbers

We give training courses

- LIR Training Course
- RIPE Database Training course
- Routing Security Training Course
- IPv6 for LIRs Training Course

Most Difficult part of the IPv6 course?

Philosophy change

IPv4 -> IPv6: what philosophy change?

~~How many IP addresses do I need?~~

How many subnets do I need?

Subnet always = /64

What? /64= 2x10^19 addresses? Really?

- Why? Autoconfiguration (SLAAC)
- Feature of IPv6 Architecture
- Conservation?
  - first 64 bits
  - not last 64 bits
- Enough addresses

Think of your heart!

Don’t count IP addresses in a subnet!

How many subnets do I give my customers?

- /64 (1 subnet)
- /60 (16 subnets)
- **/56 (256 subnets)**
- /52 (4096 subnet)
- **/48 (65536 subnets)**

How many customers can I have like this?

- 4 billion /64's
- 268 million /60's
- **17 million /56's**
- 1 million /52's
- **65536 /48's**

How do customers use these addresses?

- Make an addressing plan
- /64 for all subnets
- Routers: /56 or /52
  - give all routers the same size block
  - minimum /64 per interface
  - allow growth
- Point to point: /64

More Questions?

Come to our 1 day free IPv6 training!

Only for RIPE NCC members: www.ripe.net/training


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