

Feedback from RIPE NCC Registration Services

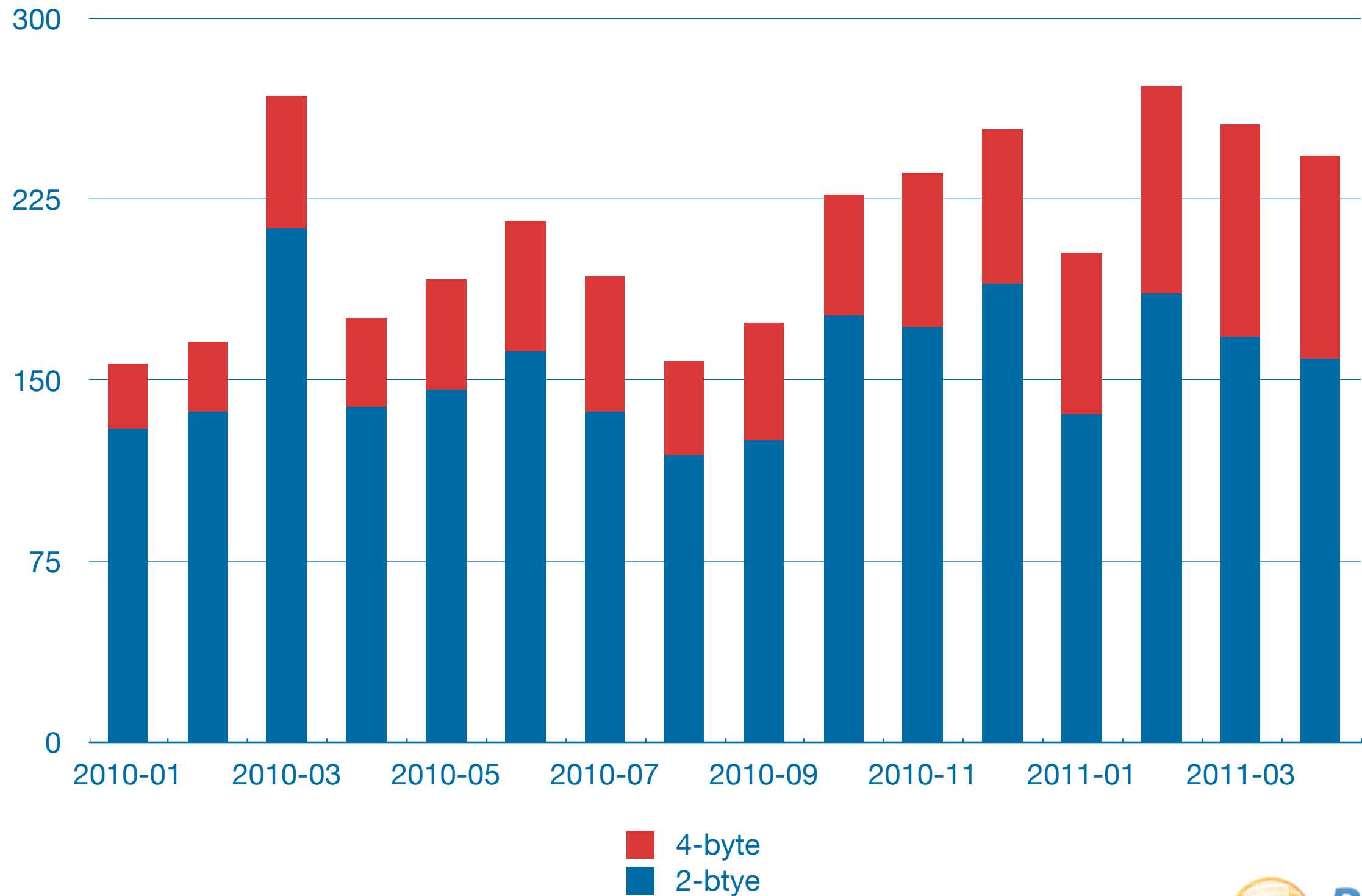
Alex Le Heux - RIPE NCC
RIPE62, May 2011, Amsterdam



Outline

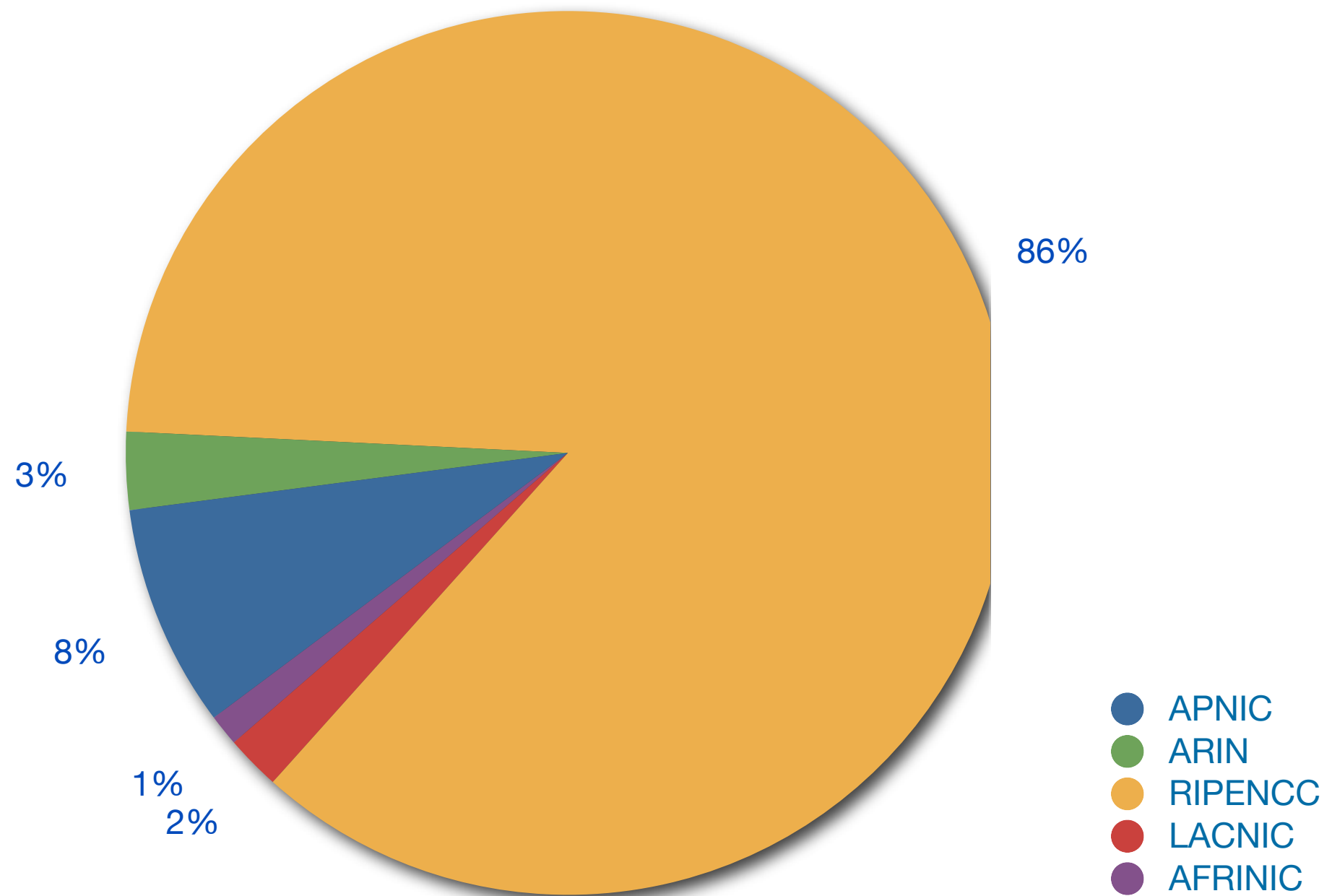
- ASN32 success, a competitive disadvantage?
- Last /8 implementation detail
- “Upgrade” of /32 IPv6 allocations
- IPv6 PI sore points and background information

ASN32 Update



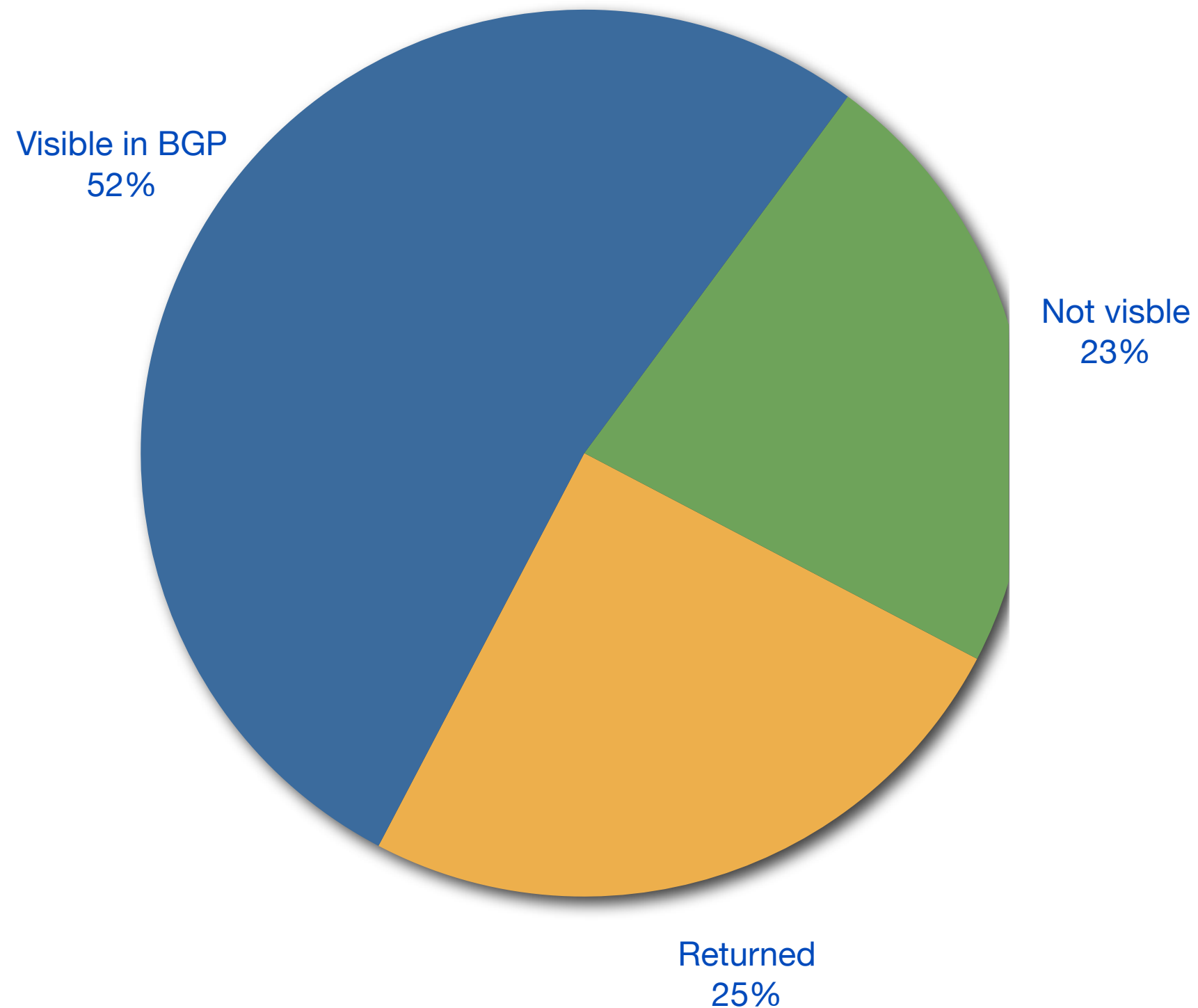
ASN32 Update

4-byte ASN Assignments



ASN32 Update

RIPE NCC ASN32 Assignments



Competitive
disadvantage?



Last /8 implementation

- Last /8 implementation:
 - Address space returned to the RIPE NCC *after* the last /8 policy comes into effect will be treated the same way as the last /8.

“Upgrade” of /32 allocations

- First IPv6 allocation on file: August 12, 1999
- Detailed deployment plans were rare in those days
- Years later, some holders of /32s realise they actually have a few million customers
- Solution: Return the /32 & re-evaluate

IPv6 PI

Sore points and background information

IPv6 PI, Part III

- Report on Registration Services' experience with the current policy
- Provide some background information and numbers relevant to the current IPv6 PI discussion

IPv6 PI, Part III

- Current IPv4 PI policy:
 - “PI space cannot be re-assigned or further assigned to other parties.”
 - “IP addresses used solely for the connection of an End User to a service provider [...] are considered part of the service provider's infrastructure.”

IPv6 PI, Part III

- Current IPv6 policy:
 - “Assignments [...] are not to be sub-assigned to other parties.”

IPv6 PI, Part III

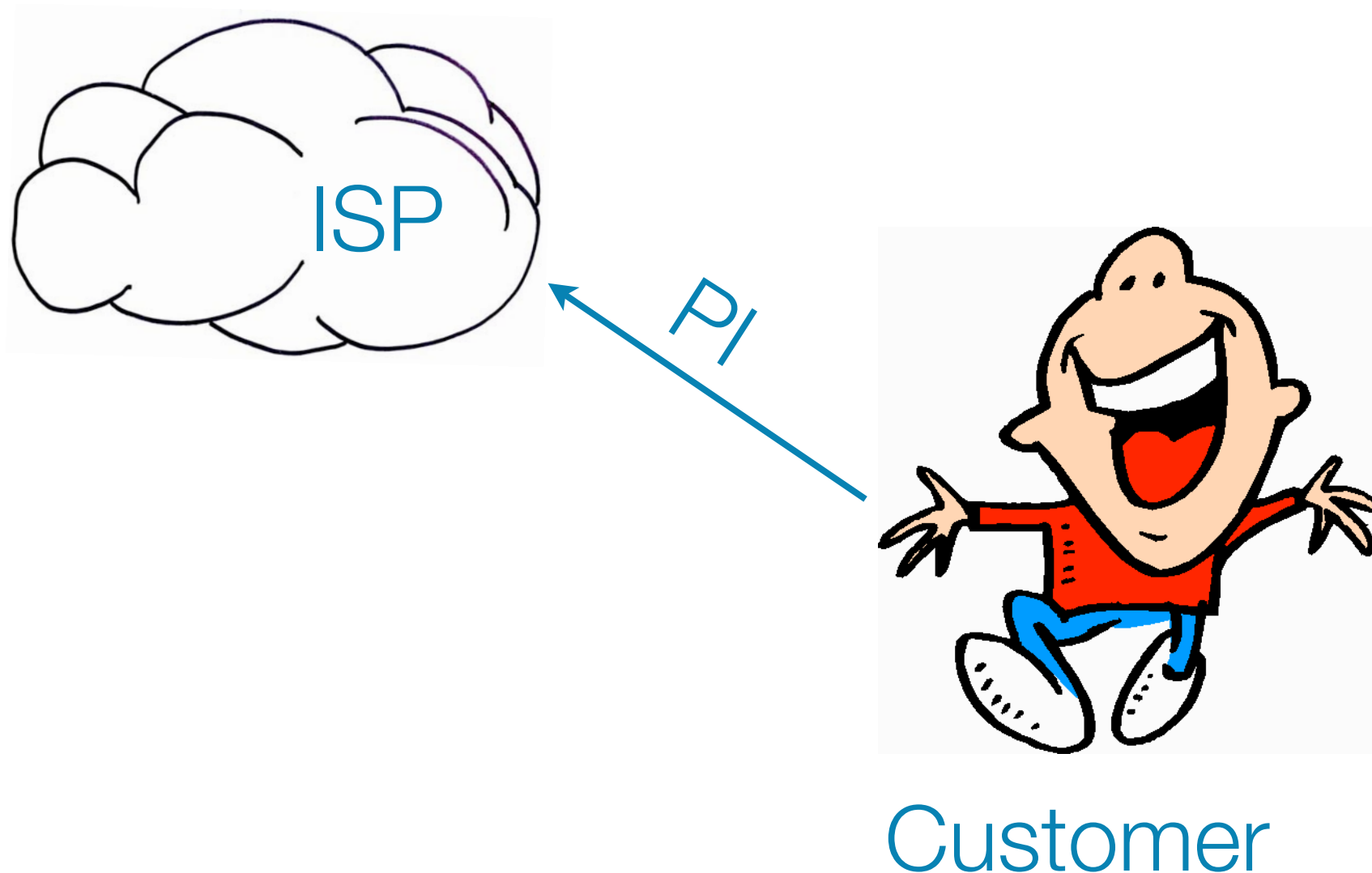
- No DSL
- No Cable
- VPN
- No co-location
- No virtual servers
- No SSL hosting
- No buts and no exceptions

IPv6 PI, Part III

- Sore points:
 - Thousands of current IPv4 PI space holders see no way to deploy IPv6
 - Hard to explain why we can assign IPv4 but not IPv6
 - Blurred distinction between ISP and end-user

IPv6 PI, Part III

- In the past, when ISPs were *real* ISPs and end-users were *real* end-users...
- The world was probably a simpler place

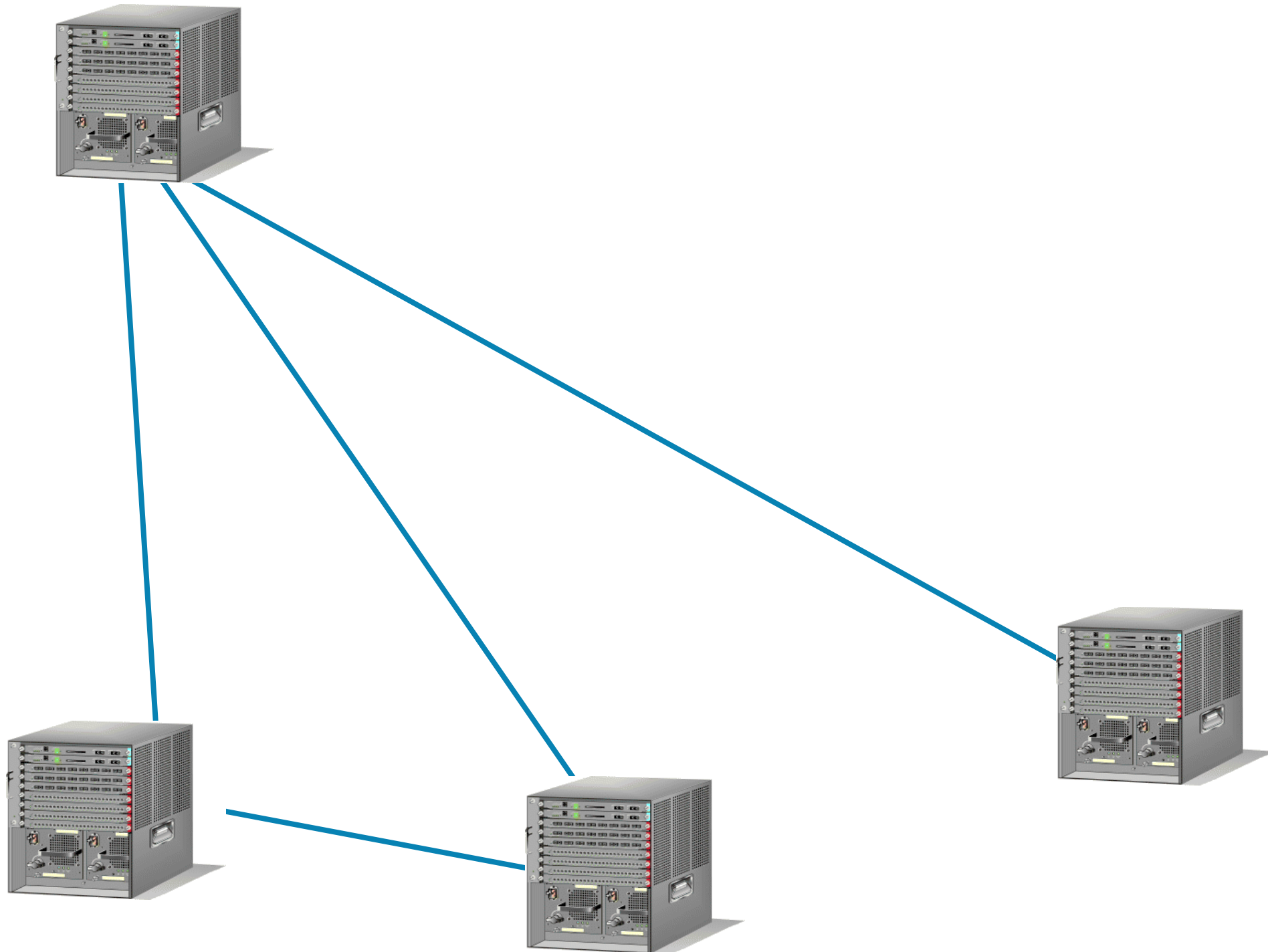


IPv6 PI, Part III

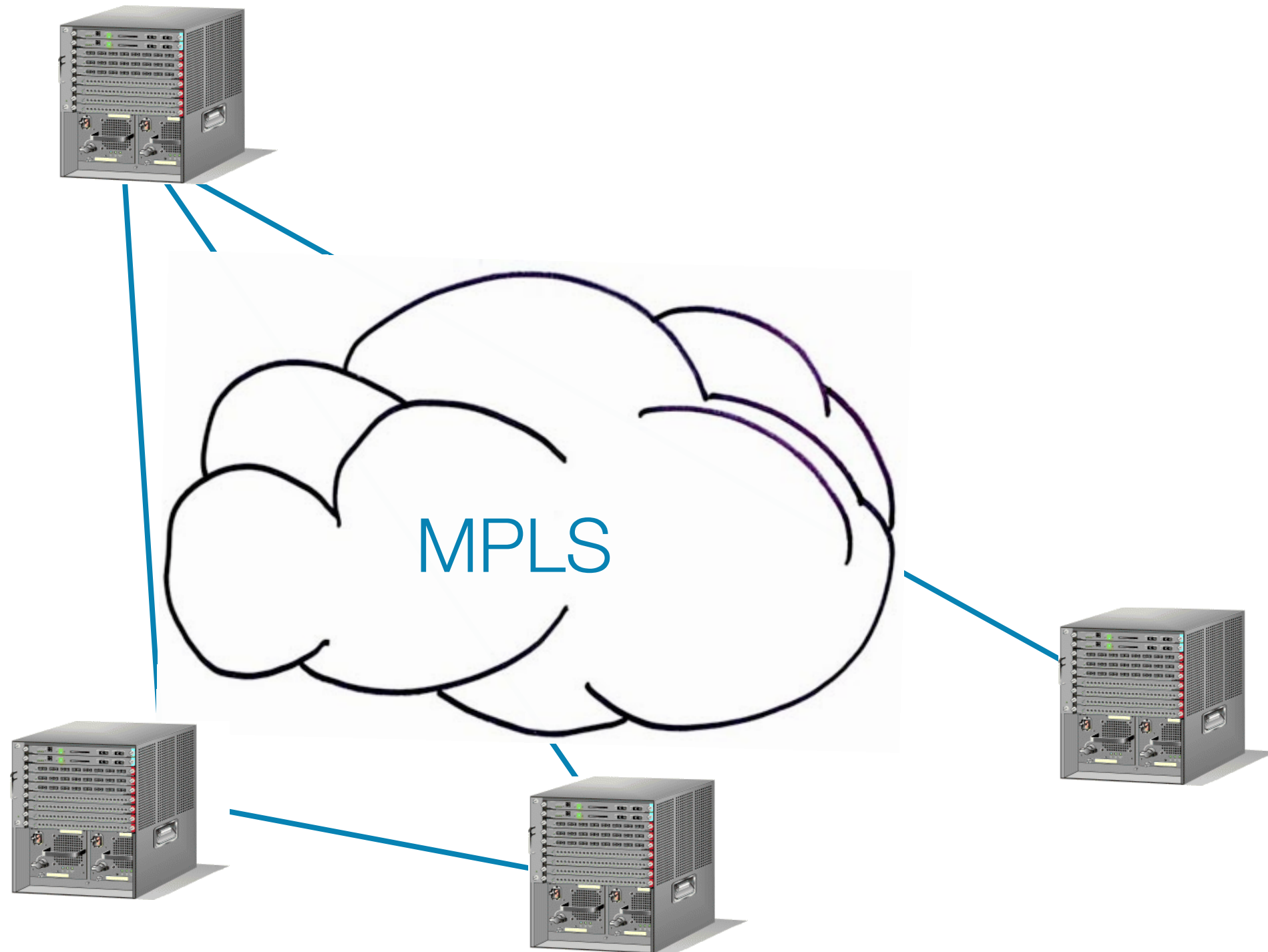
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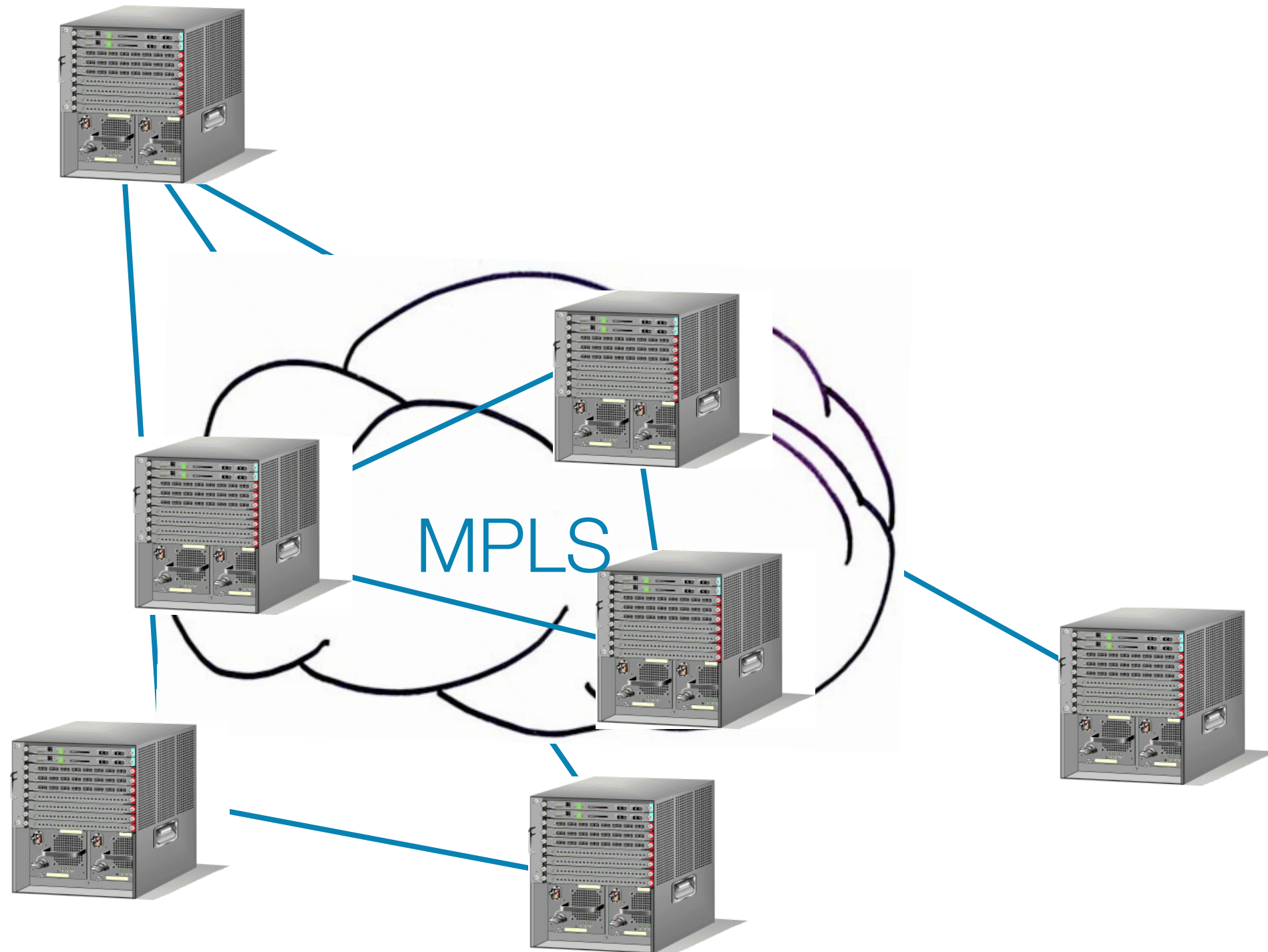
IPv6 PI, Part III



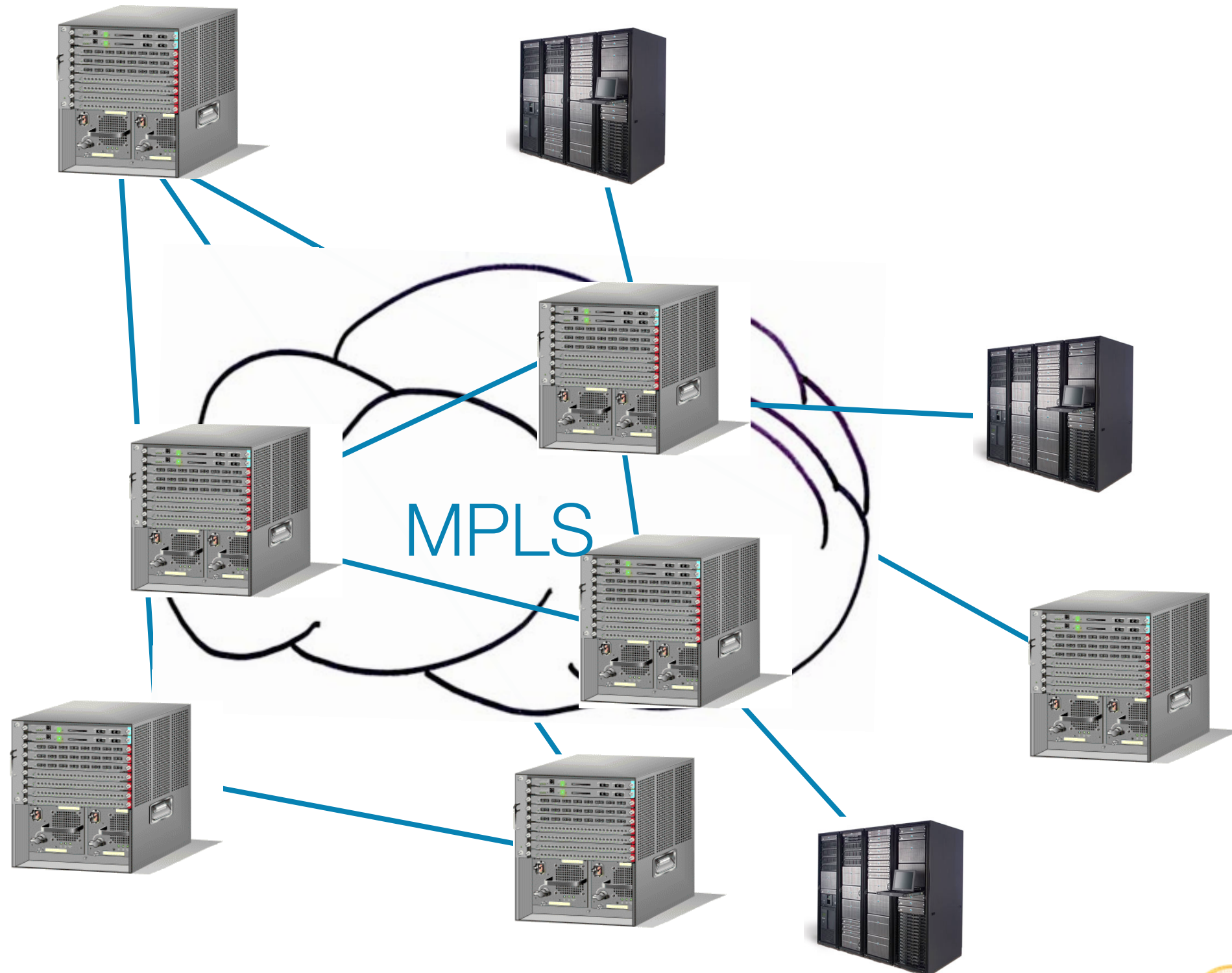
IPv6 PI, Part III



IPv6 PI, Part III



IPv6 PI, Part III



IPv6 PI, Part III

- Application Service Provider
 - Writes software for clients
 - Then hosts the application as well
 - Sets up a completely independent infrastructure for each client
 - End-site? ISP?

IPv6 PI, Part III

- The sharp distinction between end-user and ISP is gone
- “Old-school” end-users still exist, of course
- But more and more complex services are built on top of other complex services built on top of...

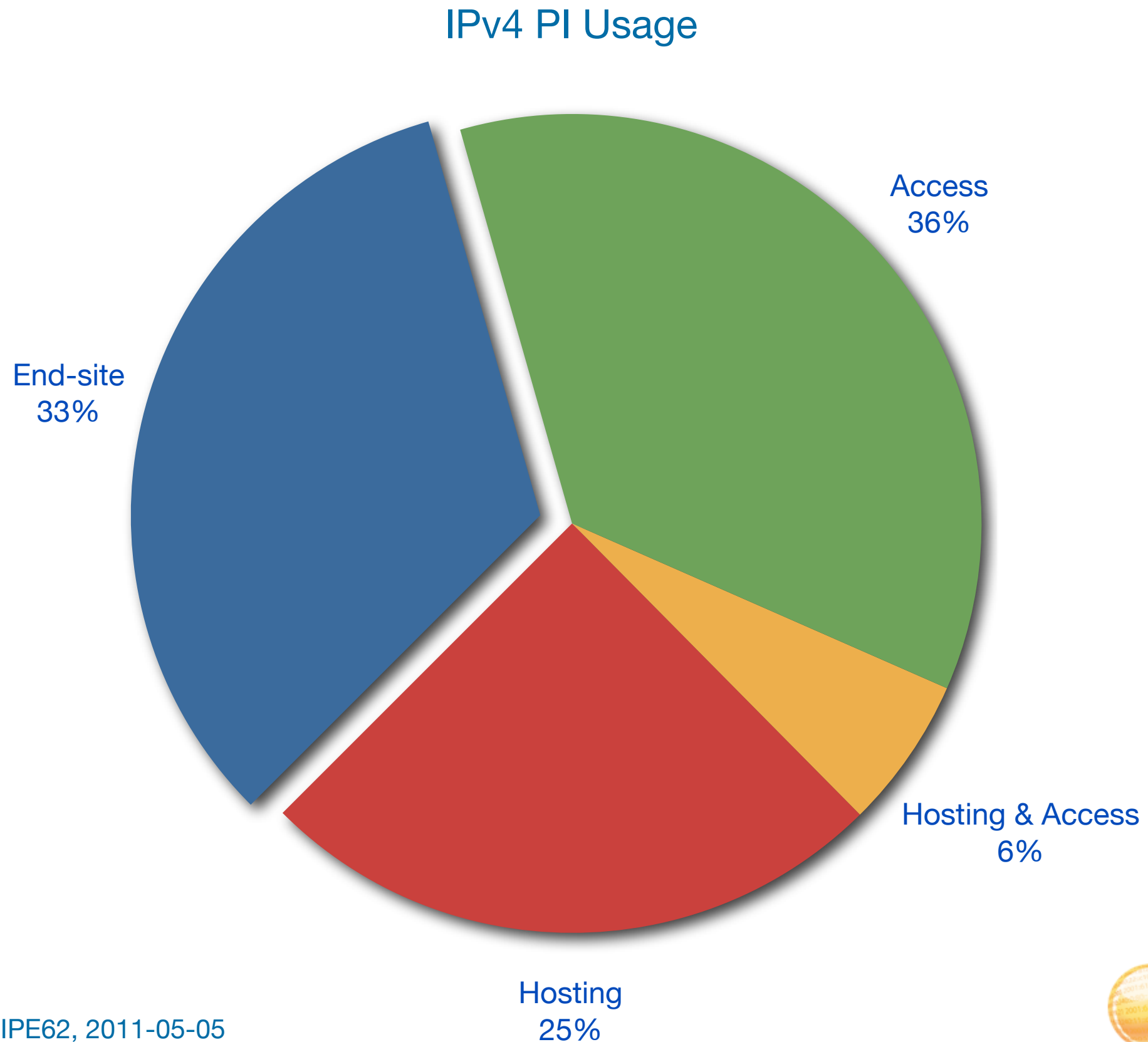
IPv6 PI, Part III

- The *complexity* of deciding if something is an ISP or an end-user has increased
- If it even makes sense to make the distinction at all, in some cases
- This is hard to do in a fair and consistent manner

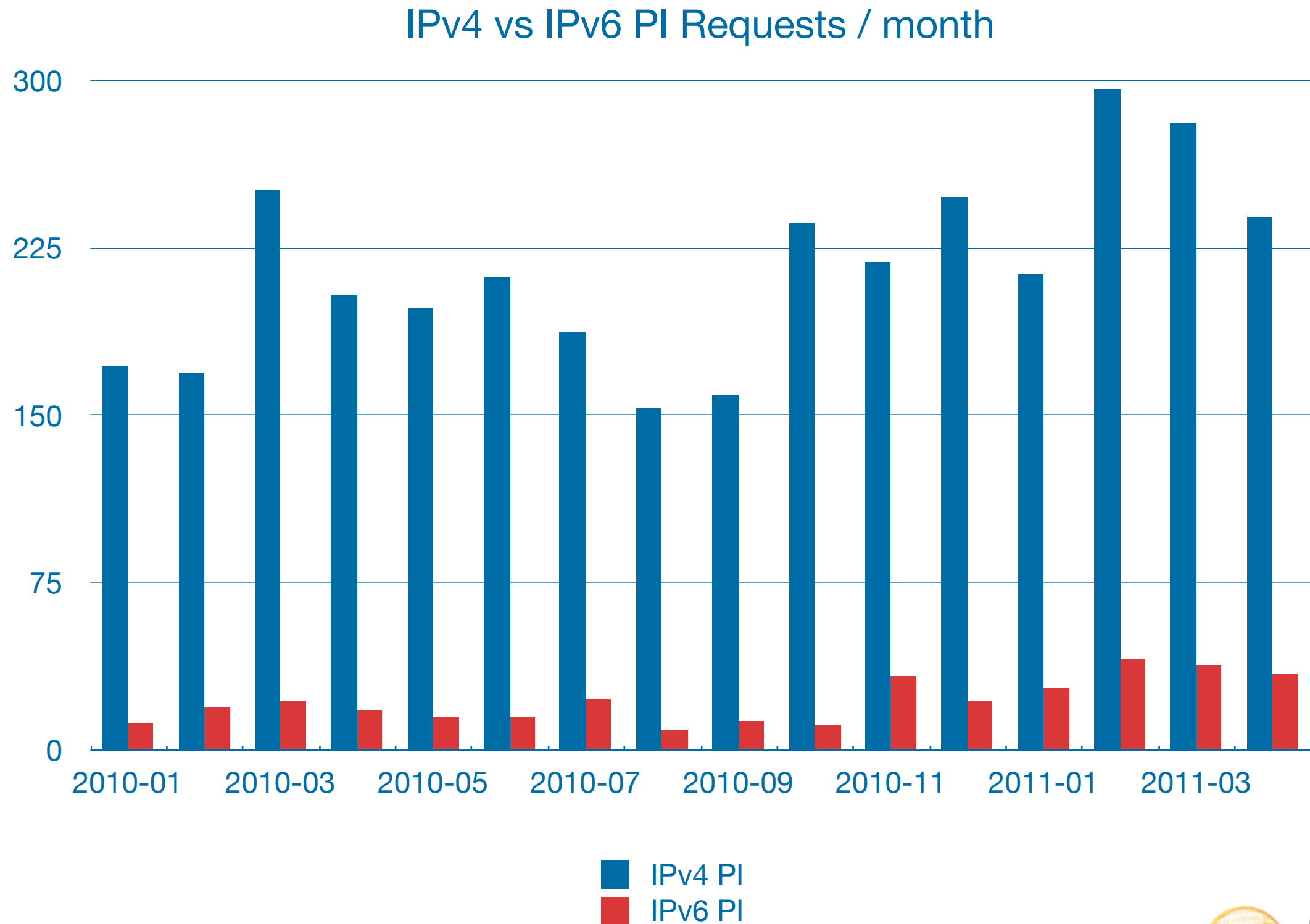
IPv6 PI, Part III

Background information

IPv6 PI, Part III



IPv6 PI, Part III

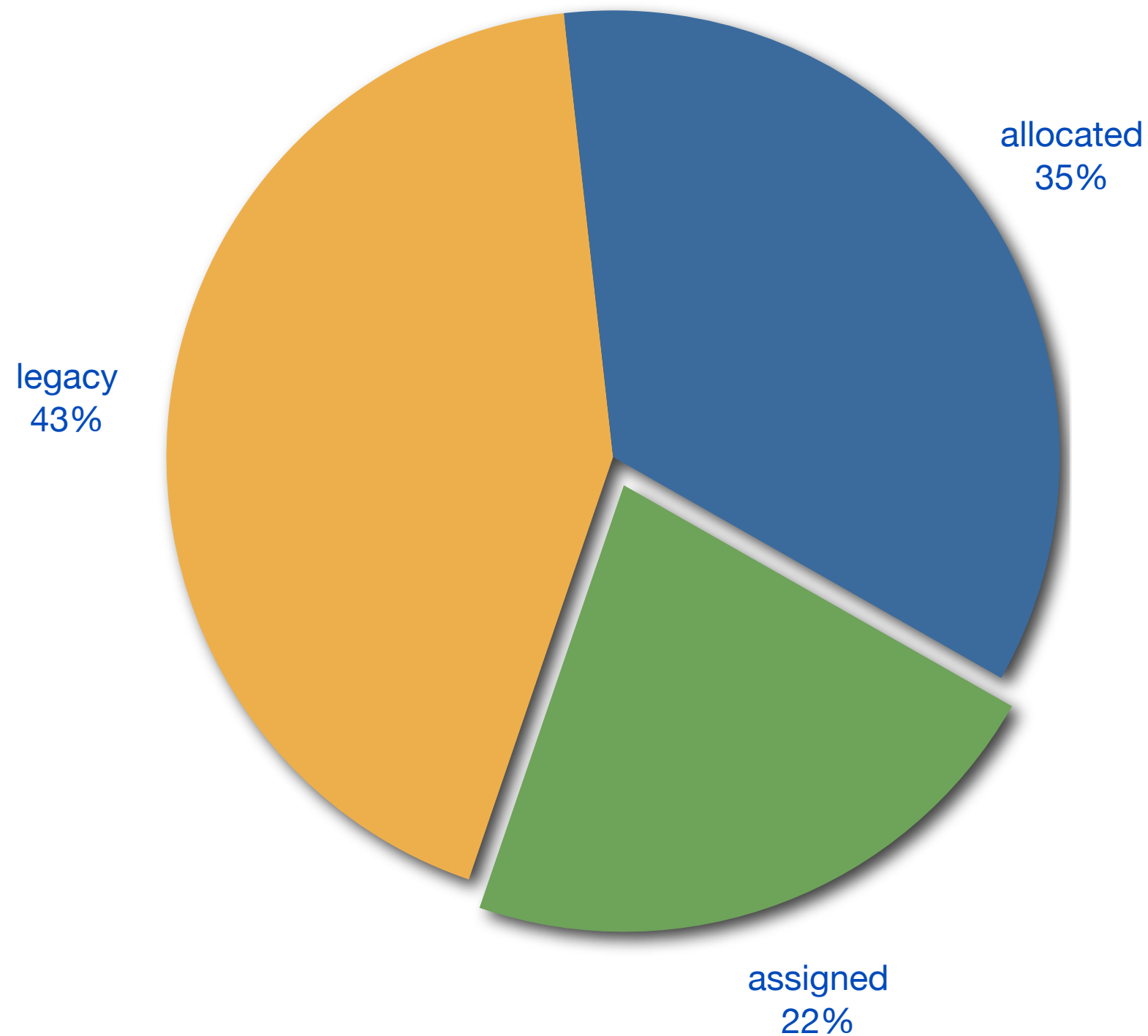


IPv6 PI, Part III

- Look at the IPv4 routing table to see what *might* happen with IPv6
 - RIR delegated stats files
 - Anything assigned or allocated before 1996 considered “legacy”
 - RIS
 - A prefix considered “in the DFZ” if seen by at least 10 RIS peers

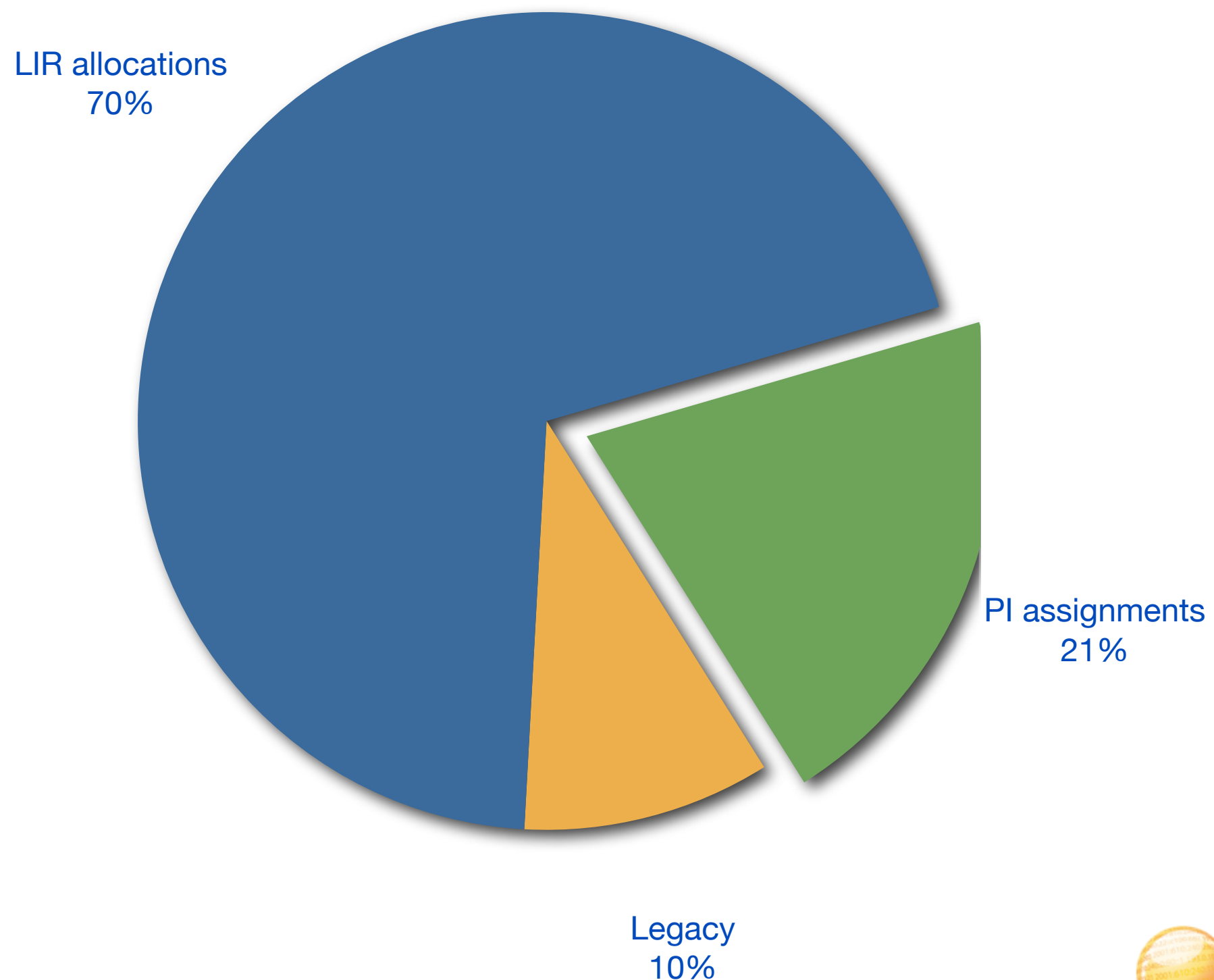
IPv6 PI, Part III

Global IPv4 BGP prefixes



IPv6 PI, Part III

RIPE NCC Service region IPv4 BGP prefixes



IPv6 PI, Part III

- Summary, RIPE NCC service region:

	Number given out	BGP entries in DFZ	Ratio
ALLOCATED	15417	59126	3.8
ASSIGNED	16340	17468	1.1

Questions?

