

Resource Management: IPv4 depletion and IPv6 registration

MENOG 2 Meeting

Doha, Qatar

19-21 Nov, 2007

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Overview

- About IANA
- Resource registries
 - IPv4
 - IPv6
- Resource management
- Discussion areas

Where is IANA?



IANA's role

- 3 main areas of responsibility
 - Protocol registration
 - DNS management
 - root DNS
 - .arpa and .int
 - Internet number resource management
 - IPv4, IPv6 and AS Numbers

IPv4 registries

- IPv4 address space
- Multicast address space
 - Requests received from the public
 - Reviewed by an IESG designated expert

IPv4 registries

ipv4-address-space

multicast-
addresses

**NOT TO
SCALE**

IPv6 registries

- IPv6 address space
- IPv6 unicast assignments
 - Where each RIR has a /12
- IPv6 special purpose address registry
 - TEREDO and ORCHID assignments
- IPv6 multicast registry

IPv6 registries

ipv6-address-space

unicast-
assignments

multicast-
addresses

iana-
special

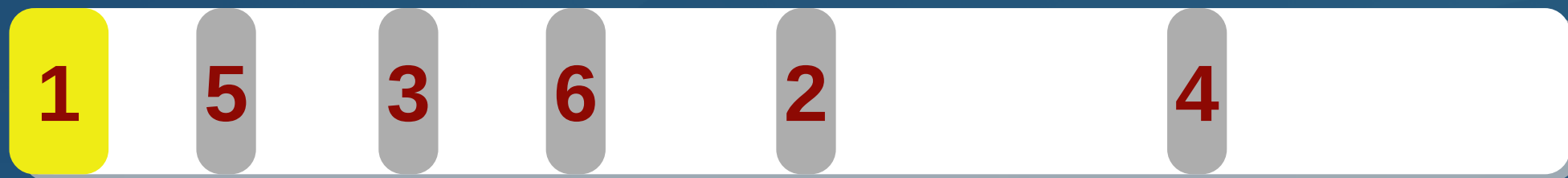
**REALLY
NOT TO
SCALE**

RIR address space management

- /12 assignments to RIRs
 - /32 minimum allocations to LIRs
 - /48 assignments to end users
- Room for a million allocations to LIRs
- /12 chosen based on sparse allocation (binary chop) allocation method

**ACTUAL SIZE
MAY VARY**

Binary chop



**SO
NOT TO
SCALE**

Binary chop

- Sparse allocation maximises potential aggregation
- APNIC uses this mechanism
- The other RIRs don't



Registry management

- ▶ XMLification
 - ▶ XML backend
 - ▶ Multiple publication formats
 - ▶ Support for non-Latin character sets
- ▶ XML directorate have been asked to review the registry schemas

Resource management

- IPv4 address space reclamation
 - 14.0.0.0/8 recovery
- 46.0.0.0/8 returned by BBN
- 49 and 50.0.0.0/8 status updated to reserved

Discussion areas



- ▶ Potential for IPv4 market: formal or informal
 - ▶ Ongoing discussion in all 5 RIR communities
- ▶ Encouraging IPv4 reclamation
 - ▶ Working with RIRs to reclaim unused address space
- ▶ Used but unallocated address space
 - ▶ Article in IPJ
 - ▶ Talks at operators meetings



Thank you

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