Resource Management: IPv4 depletion and IPv6 registration

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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

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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

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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

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IPv6 registries

ipv6-address-space

unicast-assignments

multicast-addresses

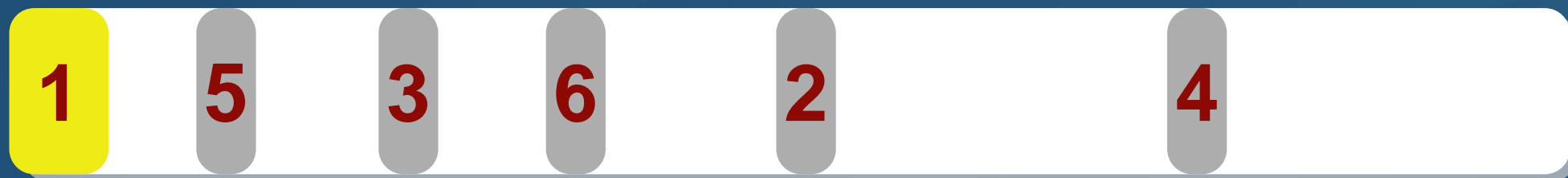iana-special

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RIR address space management

‣ /12 assignments to RIRs

   ‣ /32 minimum allocations to LIRs

      ‣ /48 assignments to end users

ACTUAL SIZE MAY VARY

‣ Room for a million allocations to LIRs

‣ /12 chosen based on sparse allocation (binary chop) allocation method

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Binary chop

1 5 3 6 2 4

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

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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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