Life After IPv4 Depletion

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Overview

• Reserved IPv4 Space
• IPv4 Waiting List
• IPv4 Transfer Market
• Getting IPv6 & IPv6 Adoption Rate
• Reserved IPv4 block for IPv6 transition
IPv4 Requests Since Depletion

- IPv4 depletion
Reserved IPv4 Space

• /10 reserved to facilitate IPv6 deployment
  – 0.28% used

• 2 /16s reserved for critical Internet infrastructure (public exchange points, core DNS operators, RIRs, IANA)
  – 11.52% used
IPv4 Waiting List

• Must qualify under current ARIN policy and request to be added to the list
  – Maximum approved size determined by ARIN
  – Minimum acceptable size specified by requester
  – One request per org on the list at a time

• Waiting List published on ARIN’s web site
  – Approximately /12 needed to fill all pending requests
  https://www.arin.net/resources/request/waiting_list.html
IPv4 Waiting List Growth

- IPv4 depletion
IPv4 Transfer Policies

– Mergers and Acquisitions (NRPM 8.2)
  • Traditional transfer resulting from a merger, acquisition, or reorganization supported by legal documentation

– Transfers to Specified Recipients (NRPM 8.3)
  • IPv4 transfer from one organization to another that it specifies, supported by justified need (within region)

– Inter-RIR transfers to Specified Recipients (NRPM 8.4)
  • IPv4 market transfer from one organization to another that it specifies, supported by justified need (between regions)
Transfers To Specified Recipients

• Allows orgs with unused IPv4 resources to transfer them to orgs in need of IPv4 resources

• **Source**
  – Must be current registrant, no disputes
  – Not have received addresses from ARIN for 12 months prior

• **Recipient**
  – Demonstrate need for 24-month supply under current ARIN policy
Specified Recipient Transfer Growth

- IPv4 depletion

- Dates: Jul-15 to Jul-16
Inter-RIR Transfers

• RIR must have reciprocal, compatible needs-based policies
  – Currently APNIC and RIPE NCC

• **Transfers from ARIN**
  – Source cannot have received IPv4 from ARIN 12 months prior to transfer
  – Must be current registrant, no disputes
  – Recipient meets destination RIR policies

• **Transfers to ARIN**
  – Must demonstrate need for 24-month supply under current ARIN policy
Inter-RIR Transfers Completed

![Graph showing the trend of Inter-RIR transfers completed from July 2015 to July 2016. The x-axis represents the months from Jul-15 to Jul-16, and the y-axis represents the number of transfers completed. The graph shows a significant increase in transfers starting in September 2015, with a notable peak in July 2016. There is a dashed red line indicating IPv4 depletion.](image-url)
No Drop In IPv4 Consumption

Free Pool  Transfer Market
Minimal Drop in IPv4 Workload

IPv4 Requests
Need-Based Transfer Requests
Transfer Pre-Approval

• Optional free service to confirm your 24 month projected need for IPv4 addresses via transfer
  – Must qualify under ARIN IPv4 policies
  – Same documentation requirements as transfers
  – Good for 24 months from the pre-approval date
  – Once pre-approved, must still submit 8.3 or 8.4 transfer request in new ARIN online ticket
  – Can use multiple 8.3 or 8.4 transfers to fill pre-approved amount
Obtaining IPv6 – It’s Really Easy

- Already have an IPv4 block, or
- Intend to multi-home, or
- Plan 50 customer assignments within 5 years (ISP)
- Have 13 sites OR plan to use 2000 IPv6 addresses/200 IPv6 subnets OR have a reasonable technical justification (EU)
IPv6 Requests Since Depletion
IPv6 Adoption by ISP Size

- ISPs without IPv6
- ISPs with IPv6
Reserved IPv4 for IPv6 Deployment

- /10 reserved under policy in April 2009 (23.128.0.0/10)
  - 46 /24s issued to date

- Must be used to facilitate IPv6 deployment
  - Examples include IPv4 addresses for key dual stack DNS servers, and NAT-PT or NAT464 translators

- You must already have your IPv6 allocation or assignment in order to receive a /24 from this block

- One per organization every six months, /24 maximum size
Takeaways

• IPv4 consumption still strong
• If you need IPv4:
  – Get pre-approved
  – Get an IPv6 block & use reserved IPv6 block for IPv6 deployment policy
• IPv6 is the future