ARIN

American Registry for Internet Numbers

IPv6 Allocation Practices

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Overview

- Purpose

- Global IPv6 Registration Status

- Evolution of IPv6 Allocation Policy

- IPv6 Guidelines and Criteria

- Review of Critical Data Fields

- Suggestions

- Useful Links

Purpose

Present information designed to help network engineers and administrators plan their initial IPv6 deployment in accordance with the ARIN IPv6 guidelines, criteria, and request process.

Global IPv6 Registration Status

- ARIN   2001:0400::/23
  - Total of (15) /35 allocations made to date

- APNIC   2001:0200::/23
  - Total of (26) /35 allocations made to date

- RIPE NCC   2001:0600::/23
  - Total of (29) /35 allocations made to date

Evolution of IPv6 Allocation Policy

- IPv6 architecture evolved through IETF working groups

- 6bone was established to experiment with new IPv6 technology

- RIRs co-authored a document to specify initial production IPv6 allocation policies

- In mid-1999, IANA approved the document and released the first group of production IPv6 addresses (sub-TLAs) to the RIRs

- Bootstrap Phase
  - Transitional and temporary
  - Concludes
    - Worldwide after first 100 sub-TLA IDs (/29s) have been allocated or
    - In one region after the RIR has allocated 60 sub-TLA IDs

- General Phase

Bootstrap Phase Criteria

1. BGP peering relationships with at least three other public ASes in IPv4 default-free zone

2. Must demonstrate production IPv6 within 12 months

   and either

1. Must be IPv4 provider to 40 sites that merit /48 IPv6 allocations

   or

2. 3 months of 6bone pTLA experience in overall 6-month 6bone

General Phase Criteria

1. BGP peering relationships with 3 other IPv6 networks with sub-TLA IDs
   <u>and either</u>

2. Requesting organization must have reassigned addresses from upstream providers to 40 SLA customer sites
   <u>or</u>

3. Requesting organization must demonstrate a clear intent to provide IPv6 within 12 months

i.IPv4 Peering Relationships

Identify your BGP peering relationships with at least three other public autonomous systems in the default-free zone.

For each BGP peer, provide the full name, telephone number and e-mail address of the technical contact you have at that organization.

Jo Smith +1 555 555 1212 jsmith@example.com
Pat Jones +1 321 123 5555 pjones@example2.net
Leslie Norwood +1 333 444 5555 leslien@example3.net

Please also provide the organization name and AS number of the peer.

AS100 Example1 Net
AS201 Example2 Telecommunications Services
AS300 Example3 Network, Incorporated

ii. IPv6 Deployment Plans

iia. What is your target date (month and year) for deploying IPV6 service?

15 July 2001

iib. For organizations qualifying under the bootstrap criteria that already have an IPv6 peering arrangement, please provide the following information:

What are the street addresses of your IPv6 route exchanges?

550 Elm St; Memphis, Tennessee US
250 Pine St; New Orleans, Louisiana US
1727 Broadway; New Haven, Connecticut US

ii. IPv6 Deployment Plans (cont'd)

List the organizations with sub-TLAs with whom your organization plans to peer.

ORGNET-IPV6
2001:0408:0000:0000:0000:0000:0000:0000/35
EXAMPLENET-V6
2001:0410:0000:0000:0000:0000:0000:0000/35
V6NET-IPV6
2001:0420:0000:0000:0000:0000:0000:0000/35

ii. IPv6 Deployment Plans (cont'd)

List the full name and E-mail address of the technical POC from each organization. (IPv6 peer)

Josie Smith jsmith@org1.net
Dean Jones djones@example.net
Roy Hanes rhan43@v6net.net

What are the targeted activation dates of the data links for each peering session?

T3 to ORG1 V6 POP: 15 June 2001
FDDI to EXAMPLENET at MAE SOUTH: 30 April 2001
100Mbps to V6NET at Chicago POP: 22 May 2001

ii. IPv6 Deployment Plans (cont'd)

iic. For what kind of IPv6 service will this address be used?

**T1/T3/DS3 leased line native IPv6 transit
application hosting at server farm
Dial-in/DSL for 23 cities**

Please provide any information, such as a URL address or network topology map, that publicizes and explains the scope and quality of the IPv6 services you plan to provide.

http://ipv6.requester.net

ii. IPv6 Deployment Plans (cont'd)

iid. Please provide a description of your IPv6 network topology, to include:

Site Name   Length of Address Prefix Description/Comments

Site Name	Length of Address Prefix	Description/Comments
Knoxville	/48	Knoxville POP
Baton Rouge	/46	Louisiana POP
Indianapolis	/48	Server Farm and Dial-in Services

iii. If you are an IPv4 transit provider, list at least 40 customer sites to which you have issued IPv4 space that meet the criteria for a /48 IPv6 assignment.

Downstream.net   10.10.10.0/20

Downriver.com   172.16.16.0/17

(continue listing at least 40 customers)

iv. If you actively participated in the 6Bone project and used a pseudo-TLA (pTLA) for at least 3 months, provide the following information:

What date did your organization register with 6Bone?

15 Aug 2000

What address range were you allocated? What date did you receive the allocation?

3FFE:2300::/24

iv. If you actively participated in the 6Bone project and used a pseudo-TLA (pTLA) for at least 3 months, provide the following information: (cont'd)

If applicable, identify the IPv6 addresses you delegated from your pTLA to other organizations. Company Name: Address Range:

3FFE:2300::/48 v6customer.net
3FFE:2300:31::/48 secondcustomer.com
3FFE:2300:2323:2101::/64 thirdcustomer.com

Suggestions

- Include complete information on at least 3 IPv4 peers (POC and ASN details)

- List at least 40 customers with IPv4 reassignments (if no 6bone experience)

- Review your deployment data with all staff involved in IPv6 engineering

- Avoid listing IPv4 customers without reassignment information

- Avoid sending only IPv6 promotion literature without including technical deployment details

Useful IPv6 Links

http://www.arin.net/regserv/ipv6
   ARIN IPv6 registration information and templates

http://www.6bone.net
   Testbed for deployment of IPv6

http://www.arin.net/announcements/ipv6_wg.html
   ARIN working group information related to IPv6

http://www.dfn.de/service/ipv6/ipv6aggis.html
    Current listing of all IPv6 allocations

http://www.apnic.net
   APNIC web site

http://www.ripe.net
   RIPE NCC web site

Questions

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