ARIN + NANOG
ON THE ROAD

San Diego, California
25 February 2014

ARIN NANOG
ON THE ROAD

Obtaining IP Addresses III: IPv6 Adoption

Jon Worley
Senior Resource Analyst

The Boiling Frog Parable

Why Adopt IPv6?

- ARIN's IPv4 free pool will be gone soon

- IPv4 Waiting list = loooooooooooong

- IPv4 Transfer Market = $$$$$

Alternatives?

- Large Scale/Carrier-Grade NAT?
  - equipment costs
  - latency, application, geolocation, DMCA, etc. issues

- Or: **solve the problem the right way**

IPv6 has benefits, too

- No more coming to ARIN multiple times a year

- Deploy a subnet to a site once and you're good

- Improved aggregation

Qualifying for IPv6 - ISPs

- have a previous v4 allocation from ARIN

- intend to multi-home

- provide a technical justification which details at least 50 assignments made within 5 years

IPv6 ISP Data Typically Requested

- If requesting more than a /32, a spreadsheet/text file with
  - \# of serving sites (PoPs, datacenters)
  - \# of customers served by largest
  - block size to be assigned (/48 typical)

# **Qualifying for IPv6 – End Users**

- have a v4 direct assignment
- intend to multi-home
- 2000 IPv6 addresses or 200 IPv6 subnets used within a year
- technical justification as to why provider-assigned IPs are unsuitable

IPv6 End Users – Data Requested

- List of sites in your network
  - site = distinct geographic location
  - street address for each

- Campus may count as multiple sites
  - technical justification showing how they're configured like geographically separate sites

IPv4 vs IPv6 Subscribers

Total of 4,468 ISP Subscriber Members

IPv4 Only
2,461 (55%)

IPv6 Only
277 (6%)

4,468
Subscribers
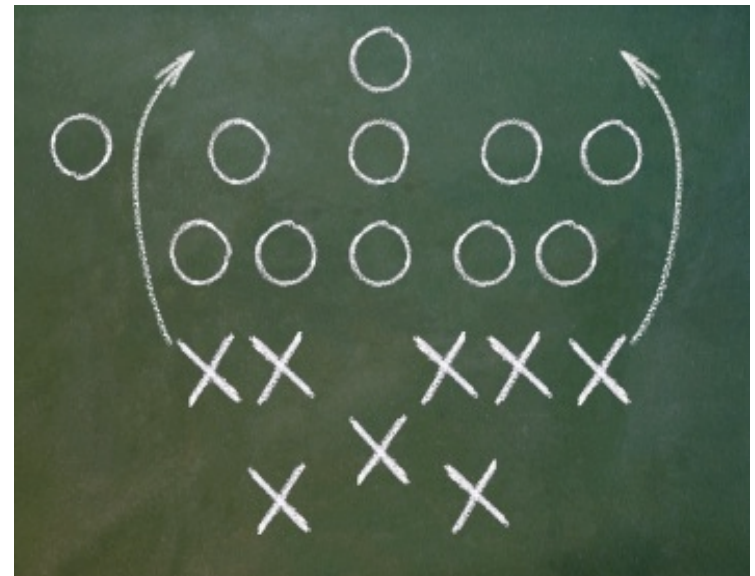
IPv4 and IPv6
1,730 (39%)
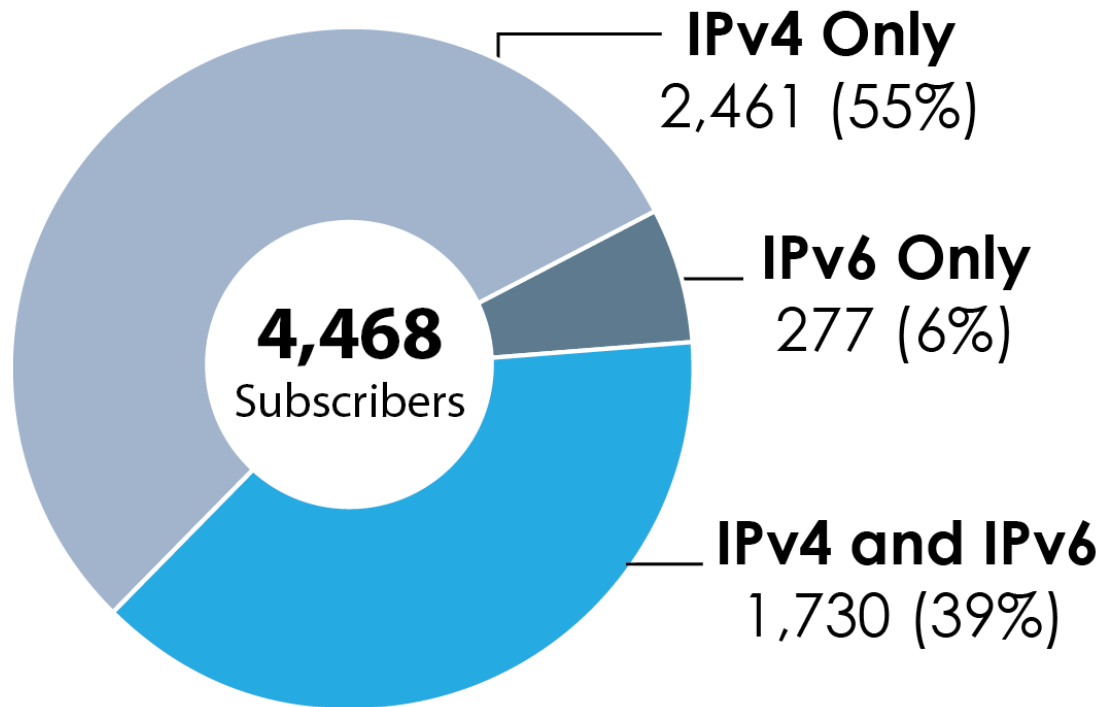
The Solution to IPv4 Depletion

- IPv6 must be adopted for continued internet growth

- Now is the time to deploy IPv6

Everyone needs an IPv6 Plan

- Each organization must decide on a unique IPv6 deployment plan right for them
  - Timeline will vary
  - Investment level will vary

ARIN✚NANOG
ON THE ROAD

Your IPv6 Check List

☑ IPv6 address space

☑ IPv6 connectivity (native or tunneled)

☑ Operating systems, software, and network management tool upgrades

☑ Router, firewall, and other hardware upgrades

☑ IT staff and customer service training

ARIN Resources

www.GetIPv6.info

IPv6 Info Center
www.arin.net/knowledge/ipv6_info_center.html

www.TeamARIN.net

Operational Guidance

www.InternetSociety.org/
Deploy360/

www.NANOG.org/archives/

bcop.NANOG.org

www.hpc.mil/cms2/index.php/
ipv6-knowledge-base-general-info

Q&A