



# Ready or not...IPv6 is here

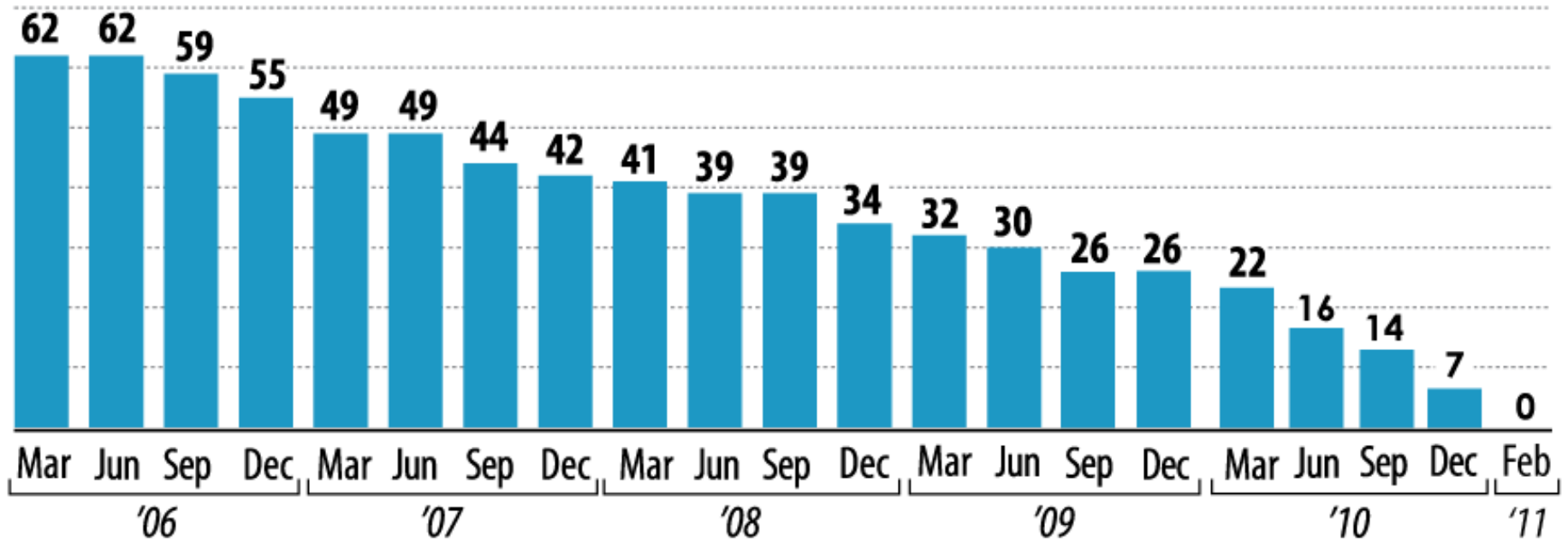
**TXv6TF IPv6 Conference**

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# Quick History of the Internet Protocol

- Internet Protocol version 4 (IPv4, or just “IP”)
  - First developed for the original Internet (ARPANET) in spring 1978
  - Deployed globally with growth of the Internet
  - Total of 4 billion IP addresses available
  - Well entrenched and used by every ISP and hosting company to connect customers to the Internet
  - Allocated based on documented need
- Internet Protocol version 6 (IPv6)
  - Design started in 1993 when IETF forecasts showed IPv4 depletion between 2010 and 2017
  - Completed, tested, and available for production since 1999
  - Total of 340,282,366,920,938,463,463,374,607,431,768,211,456 IP addresses available
  - Used and managed similar to IPv4

# IANA available IPv4 Space in /8s



# IPv4 Depletion Situation Report

- Each RIR received its last /8 from IANA on 3 February 2011.
- The IANA free pool of IPv4 addresses has reached 0%.
- While each RIR currently has IPv4 addresses to allocate, it is impossible to predict when each RIR will run out.
- ARIN publishes a daily inventory of available IPv4 addresses, at **[www.arin.net](http://www.arin.net)**

# IPv4 & IPv6 - The Bottom Line

- We're running out of IPv4 address space.
- IPv6 must be adopted for continued Internet growth.
- IPv6 is not backwards compatible with IPv4.
- We must maintain IPv4 and IPv6 simultaneously for many years.
- IPv6 deployment has begun.



# IPv6 Deployment has begun

RIRs have been allocating IPv6 address space since 1999.

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Thousands of organizations have received an IPv6 allocation to date.

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ARIN has IPv6 distribution policies for service providers, community networks, and end-user organizations.

# Action Plans

## What does this mean for:

- Broadband Access Providers?
- Internet Service Providers?
- Internet Content Providers?
- Enterprise Customers?
- Equipment Vendors?
- Government Organizations?

# Call to Action

Your customers want access to the entire Internet, and this means IPv4 and IPv6 websites. Offering full access requires running IPv4/IPv6 transition services and is a significant engineering project.

Multiple transition technologies are available, and each provider needs to make its own architectural decisions.





# Call to Action

Plan out how to connect businesses via IPv6-only and IPv4/IPv6 in addition to IPv4-only.



Businesses are beginning to ask for IPv6 over their existing Internet connections and for their co-located servers.

Communicate with your peers and vendors about IPv6, and confirm their timelines for production IPv6 services.

# Call to Action

Content must be reachable to newer Internet customers.

Content served only via IPv4 will be accessed by IPv6 customers via transition solutions run by access providers.

Plan on serving content via IPv6 in addition to IPv4 as soon as possible.



# Call to Action

Mail, web, and application servers must be reachable via IPv6 in addition to IPv4.



Open a dialogue with your Internet Service Provider about providing IPv6 services.

Each organization must decide on timelines, and investment level will vary.

# Call to Action

There was probably limited demand for IPv6 in the past.

Demand for IPv6 support will become mandatory very, very quickly.

Introduce IPv6 support into your product cycle as soon as possible.



# Call to Action

Coordinate with industry to support and promote awareness and educational activities.

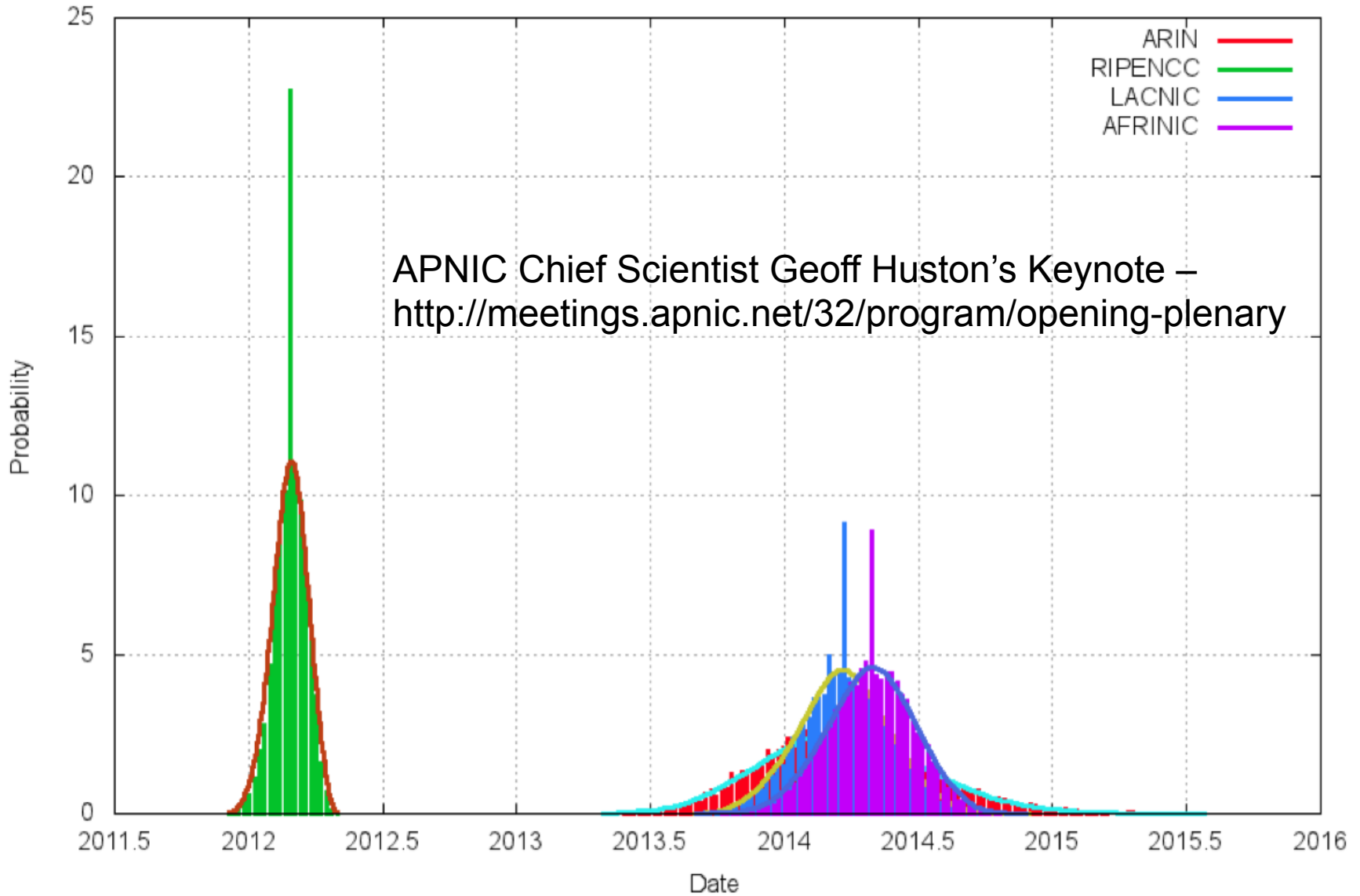
Adopt regulatory and economic incentives to encourage IPv6 adoption.

Require IPv6 compatibility in procurement procedures.

Officially adopt IPv6 within your government agencies.



# RIR IPv4 Address Run-Down Model - Variance Analysis



# Learn More and Get Involved

Learn more about IPv6

[www.arin.net](http://www.arin.net)

[www.getipv6.info](http://www.getipv6.info)

[www.TeamARIN.net](http://www.TeamARIN.net)

## Get Involved in ARIN

Public Policy Mailing List

Attend a Meeting

<http://www.arin.net/participate/>

# Thank You