



# **IPv4 Address Sales and Emerging Market for Address Space**

**Summer 2011 ESCC/Internet2 Joint Techs**

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# IPv4 Depletion Situation Report

Each RIR received its last /8 IPv4 address block from IANA on **3 February 2011**.



- While each RIR currently has IPv4 addresses to allocate, it is impossible to predict when each RIR will run out. Current Estimate to ARIN depletion – 12-18 months
- ARIN publishes an inventory of available IPv4 addresses, updated daily, at **[www.arin.net](http://www.arin.net)**.

# IPv4 Requests to ARIN (Post-IANA Exhaustion)

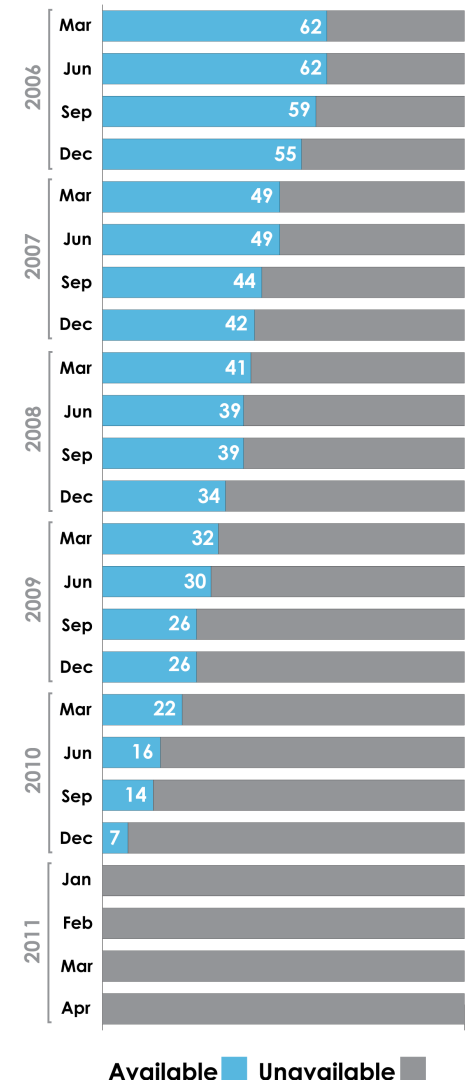
## “Soft-Landing” Provisions of the ARIN NRPM:

After an organization has been a subscriber member of ARIN for one year, they may choose to request up to a 12-month supply of IP addresses. ~~3 Feb 2011~~

When ARIN receives its last /8, by IANA implementing section 10.4.2.2, the length of supply that an organization may request will be reduced. **An organization may choose to request up to a 3-month supply of IP addresses.**

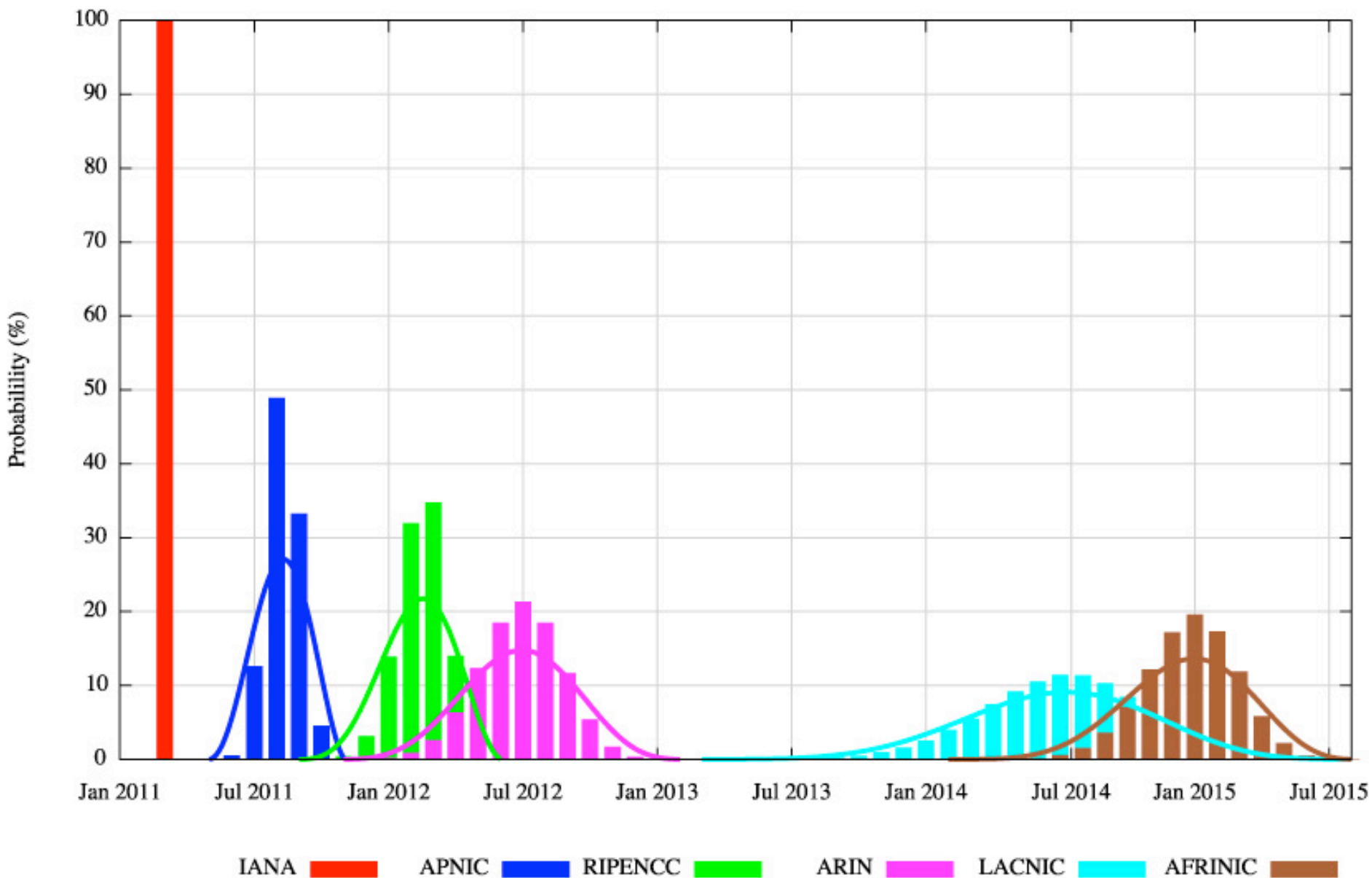
This reduction does not apply to resources received via section 8.3. **An organization receiving a transfer under section 8.3 may continue to request up to a 12-month supply of IP addresses.**

Remaining IPv4 Address Pool



Available Unavailable

Registry Exhaustion Dates



# Specified Transfer Policy (NRPM 8.3)

- Provides incentive for a party that may be able to free up IP address blocks (e.g. by renumbering) to be able to transfer space to a party which qualifies to receive space per ARIN's number resource policies.
- Not a market, per se, but enables market-like incentives among those who have available space
- Prequalification of recipient available: ARIN approves address space request from a recipient as usual, but then simply records qualification if no ARIN resources are available.
- Prequalification of seller available via the LRSA
- ARIN not party to compensation, if any.
- True to RFC 2050 intent

# Specified Transfer Listing Service- STLS (optional)

- ARIN doesn't match up parties, but provides a basic service to enable others to do so
- Three types of STLS Participants
  - Those needing IPv4 space (need has been approved by ARIN)
  - Those who have IPv4 space available
  - Those who want to play facilitator/matchmaker
- Can be used to:
  - Verify buyers against your eBay/craigslist ad...
  - Find address space for customers who need it...
  - An Interesting Internet-related business brokering for those who know about address space, RIRs, CIDR notation, RIR policies, etc.
- There will be thousands of organizations looking for address space in the near future.

# Other Relevant Developments

## Simplified M&A transfer policy (NRPM 8.2)

- Approved & implemented
- Unused space must be returned to ARIN during M&A transfer

## **Proposed: Globally Coordinated Transfer Policy (PP 119)**

- “Any RIR's resource registrant may transfer IPv4 addresses to the resource registrant of another RIR as long as the two RIRs agree and exercise Internet stewardship and the values expressed in RFC2050.”

## **Proposed: Protecting Number Resources (PP 120)**

- “ARIN shall use any reasonable and practical methods to proactively look for fraudulently obtained or abandoned number resources and seek the return of those resources to ARIN.”

# ARIN's RSA

## Notable Provisions of ARIN's RSA

- Requires adherence to ARIN Policies which may be changed by the community from time to time
- References fee schedule for ARIN's services
- Specifies that Internet number resources are not property
- Identifies parameters of transfers and assignments of Internet number resources

# ARIN's LRSA

Benefits of ARIN's standard LRSA:

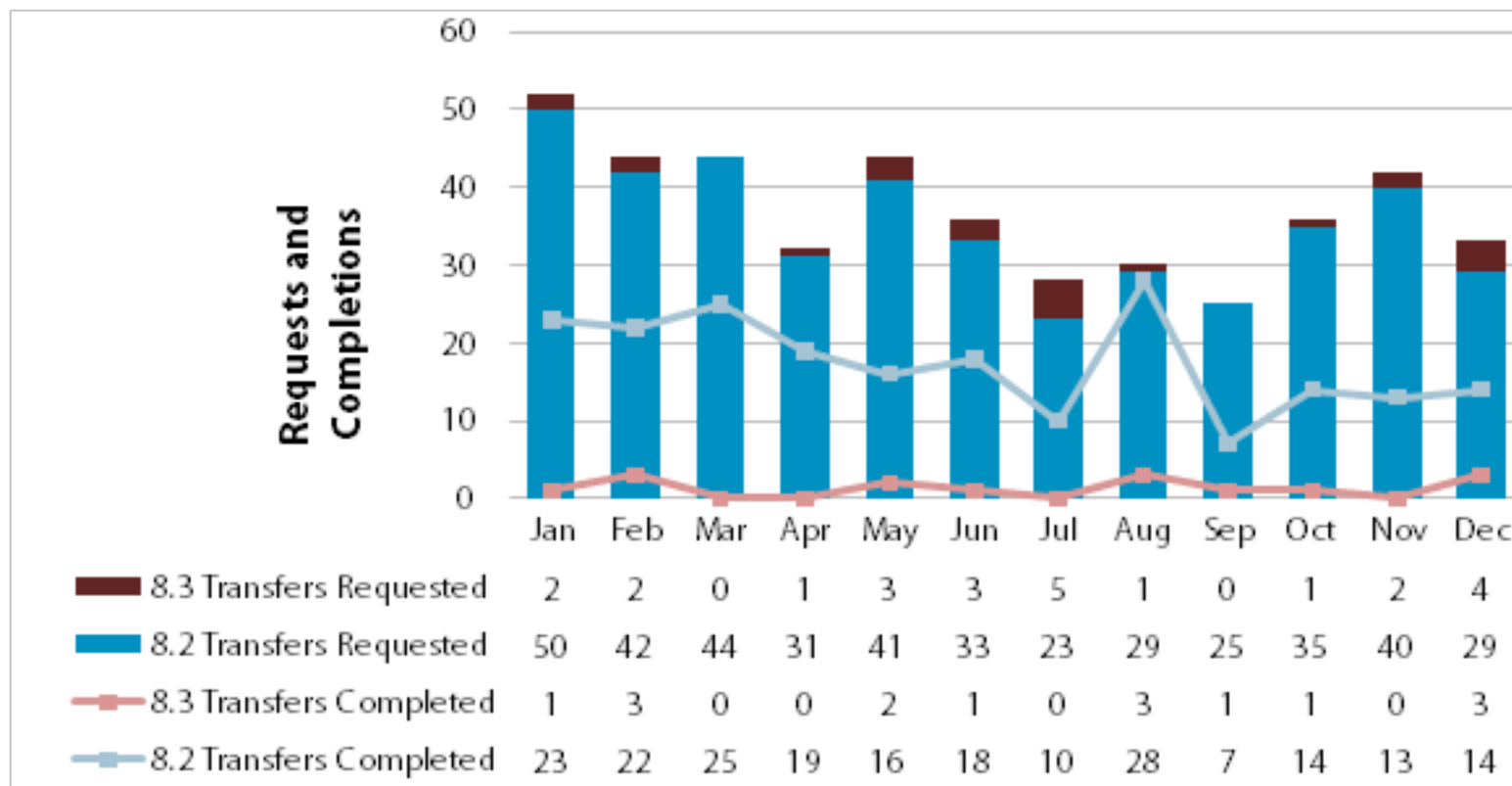
- Protection from any future policy limits that are inconsistent with the LRSA,
- Limits to future increases in fees for services provided to Legacy resources,
- Contractual promise to continue receiving Whois and IN-ADDR services into the future, and
- Legal proof of your right to use the numbers you hold.

# So you're a Government Institution

For the unique legal and operational requirements of government entities, ARIN will make appropriate modifications to its RSAs and LRSAs including:

- modification or deletion of the indemnification provision,
- modification or deletion of the bankruptcy provision,
- revision to the choice of law provision,
- amending the dispute resolution section consistent with statute, and
- other issues as needed.

# IPv4 Address Space Transfers



<https://www.arin.net/knowledge/statistics/index.html>

# IPv4 Address Space - STLS

## Public STLS Summary Report

### CIDR Blocks Listed for Transfer

Quantity	Block Size
1	/24
1	/16

### CIDR Blocks Listed As Needed

Quantity	Block Size
1	/16

Current number of facilitators: 4

Updated: 17 January 2012

[https://www.arin.net/resources/transfer\\_listing/listings.txt](https://www.arin.net/resources/transfer_listing/listings.txt)

# IPv4 Transfers per NRPM 8.3

75 Transfers to date

54.240.0.0/12	131.253.62.0/23	198.32.100.0/22	198.32.196.0/24
66.128.0.0/20	131.253.64.0/18	198.32.104.0/21	198.32.241.0/24
67.215.108.0/22	131.253.128.0/17	198.32.112.0/21	198.32.242.0/23
69.55.32.0/20	132.245.0.0/16	198.32.120.0/22	198.49.8.0/24
69.164.128.0/20	134.170.0.0/16	198.32.124.0/23	198.200.130.0/24
130.167.0.0/16	134.177.0.0/16	198.32.128.0/24	198.206.164.0/24
131.253.1.0/24	137.116.0.0/16	198.32.129.0/24	199.7.82.0/24
131.253.3.0/24	137.117.0.0/16	198.32.132.0/24	199.30.16.0/20
131.253.5.0/24	137.135.0.0/16	198.32.133.0/24	199.74.210.0/24
131.253.6.0/24	138.91.0.0/16	198.32.134.0/23	199.242.32.0/20
131.253.8.0/24	141.251.0.0/16	198.32.144.0/24	199.242.48.0/21
131.253.12.0/22	160.153.0.0/16	198.32.175.0/24	204.16.240.0/21
131.253.16.0/23	174.44.0.0/16	198.32.176.0/23	204.152.140.0/23
131.253.18.0/24	192.32.0.0/16	198.32.181.0/24	205.174.224.0/20
131.253.21.0/24	192.48.225.0/24	198.32.182.0/23	208.83.128.0/22
131.253.22.0/23	192.84.159.0/24	198.32.186.0/24	216.71.224.0/20
131.253.24.0/21	192.84.160.0/24	198.32.190.0/23	216.139.64.0/19
131.253.32.0/20	192.84.161.0/24	198.32.192.0/24	216.243.96.0/20
131.253.61.0/24	198.32.99.0/24	198.32.195.0/24	

Updated: 17 January 2012

[https://www.arin.net/knowledge/statistics/transfers\\_8\\_3.html](https://www.arin.net/knowledge/statistics/transfers_8_3.html)

# Summary: 1 of 2

ARIN views the principles of Internet number resource stewardship (conservation, aggregation, registration) being equally important post-depletion as they are today.

Per its stewardship duty, ARIN does not support Internet number resource usage outside of these principles, and furthermore actively protects number resources in the region to insure that they are managed per the ARIN community developed policies.

# Summary: 2 of 2

The ARIN community has policies and practices which post-depletion will:

- satisfy the requirements of those with valid need for additional IPv4 address space and,
- encourage return of address space and its reuse in other regions which continue to subscribe to these stewardship principles.
- encourage IPv6 adoption

# Questions?

More information:

**LRSA: <https://www.arin.net/resources/legacy>**

**Transfers: <https://www.arin.net/resources/transfers/index.html>**

**STLS: [https://www.arin.net/resources/transfer\\_listing/index.htm](https://www.arin.net/resources/transfer_listing/index.htm)**