Engineering Report

Mark Kosters

Staffing Summary

- **Operations**
  - Twelve engineers + two managers (-1 since last meeting)
  - Open DBA/Sysadmin opening
- **Development**
  - Thirteen engineers + UX expert + manager
  - FULL
- **Software Integration**
  - Ten engineers + manager
  - FULL
- **Project Management**
  - One PM and one PT PM
  - FULL
- **CTO**
  - FULL

Accomplishments since ARIN 37

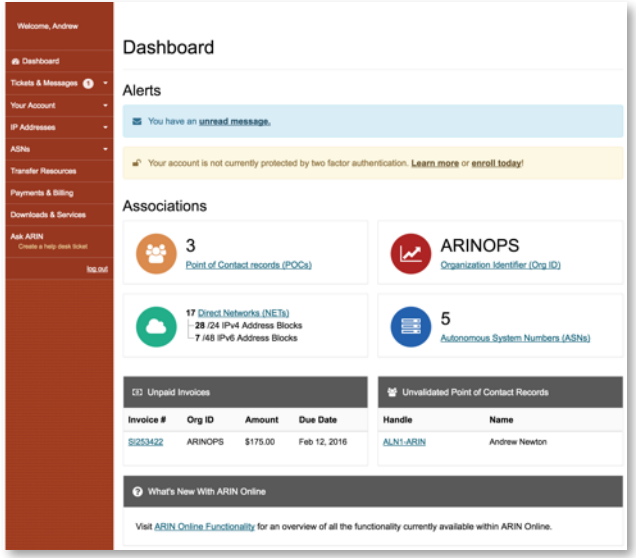
- **SWIP EZ finished with massive UI work**
  - Users can do modifications online
    - No need for templates
    - Edit direct assignments
    - Modifications on reassignments
  - Much Feedback from UX (User Experience)
  - User-friendly left hand navigation within ARIN Online
- **Completed 8.4 transfers**
- **Moved to a new office**

ARIN Online User Interface Work

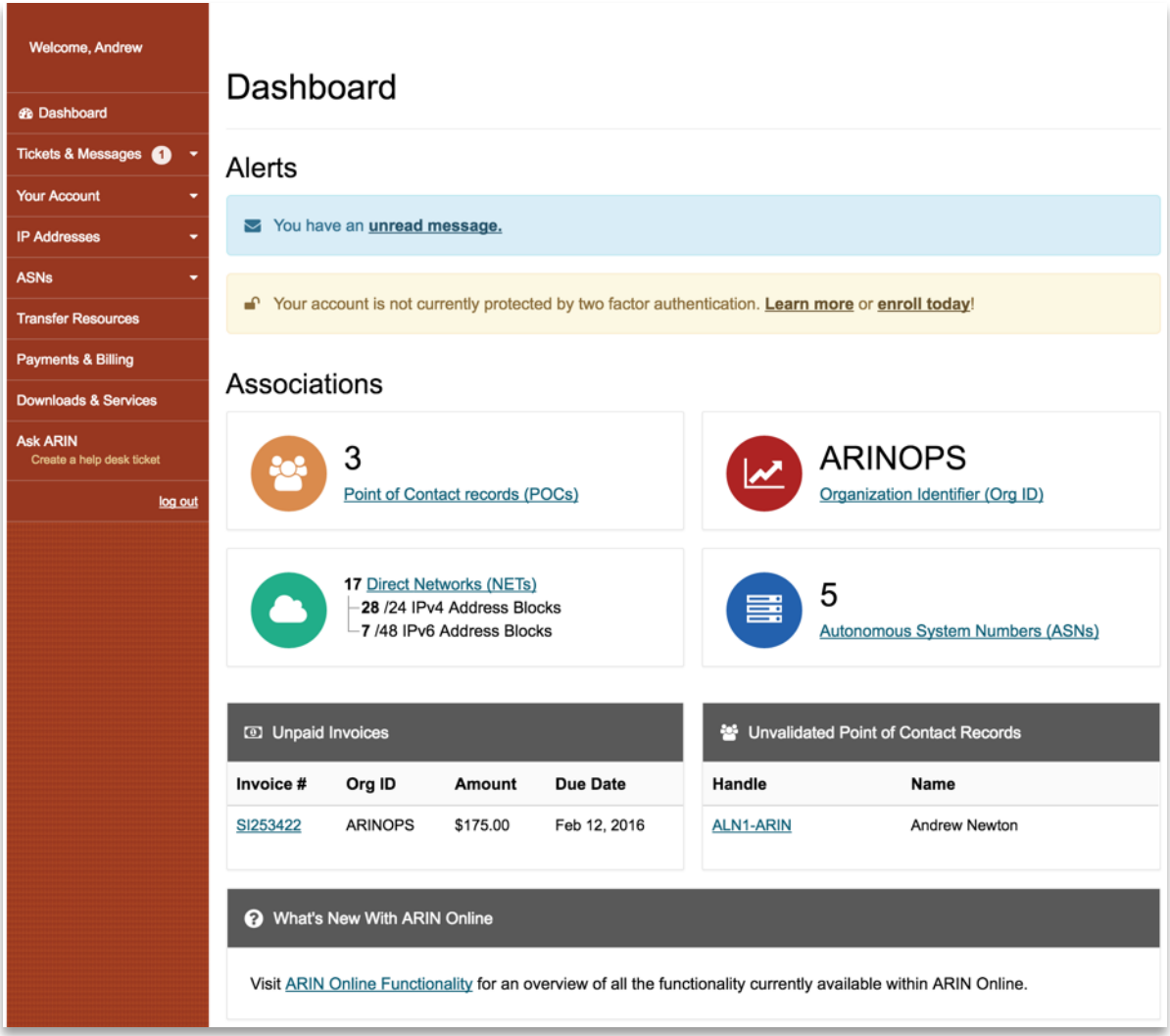
- **New ARIN Online welcome screen/dashboard**
- **ARIN Online main navigation updated**
- **Necessary for SWIP-EZ**
- **Usability tests with the community**
  - Volunteers at ARIN On The Road events
  - Local volunteers
  - Testing of new dashboard, new left navigation and other aspects of ARIN Online
  - Interested in providing input? Send email to usability@arin.net

Welcome Screen/Dashboard

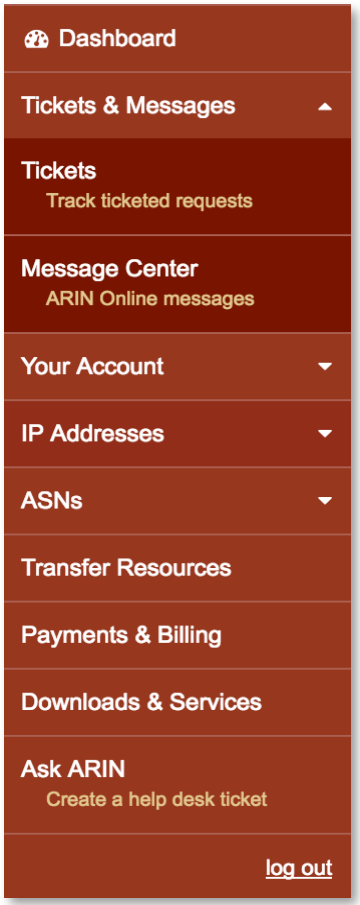
- Dashboard is dynamic
- Shows various alerts (and prompts) as necessary including all the ones you are used to seeing about unresponsive POCs and unpaid invoices.



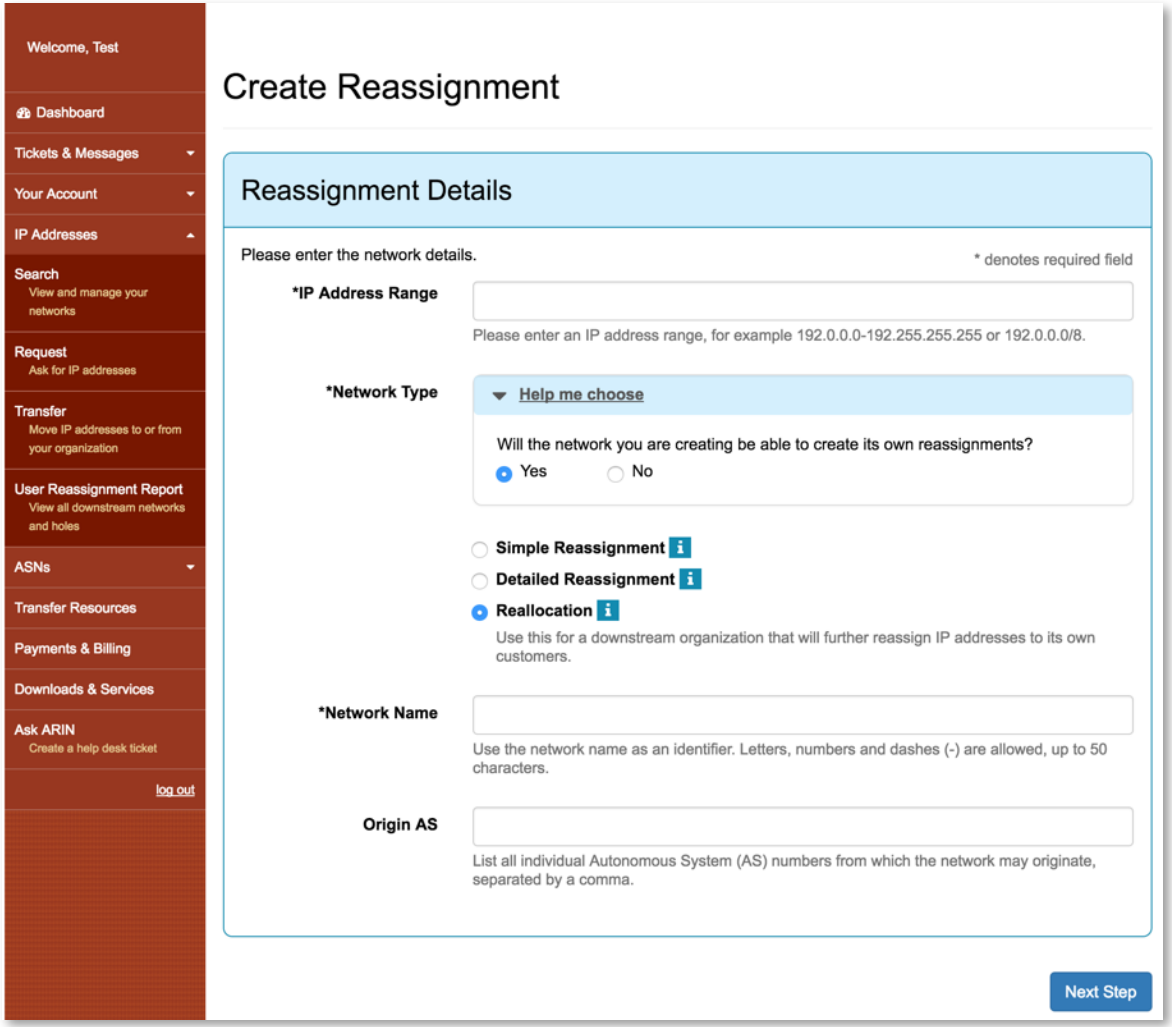
Note the badge in the left nav – it indicates the number of unread messages in your Message Center


Welcome, Andrew
Dashboard
Tickets & Messages 1
Your Account
IP Addresses
ASNs
Transfer Resources
Payments & Billing
Downloads & Services
Ask ARIN
Create a help desk ticket
log out
Dashboard
Alerts
You have an unread message.
Your account is not currently protected by two factor authentication. Learn more or enroll today!
Associations
3
Point of Contact records (POCs)
ARINOPS
Organization Identifier (Org ID)
17 Direct Networks (NETs)
28 /24 IPv4 Address Blocks
7 /48 IPv6 Address Blocks
5
Autonomous System Numbers (ASNs)
Unpaid Invoices
Invoice # Org ID Amount Due Date
SI253422 ARINOPS $175.00 Feb 12, 2016
Unvalidated Point of Contact Records
Handle Name
ALN1-ARIN Andrew Newton
What's New With ARIN Online
Visit ARIN Online Functionality for an overview of all the functionality currently available within ARIN Online.

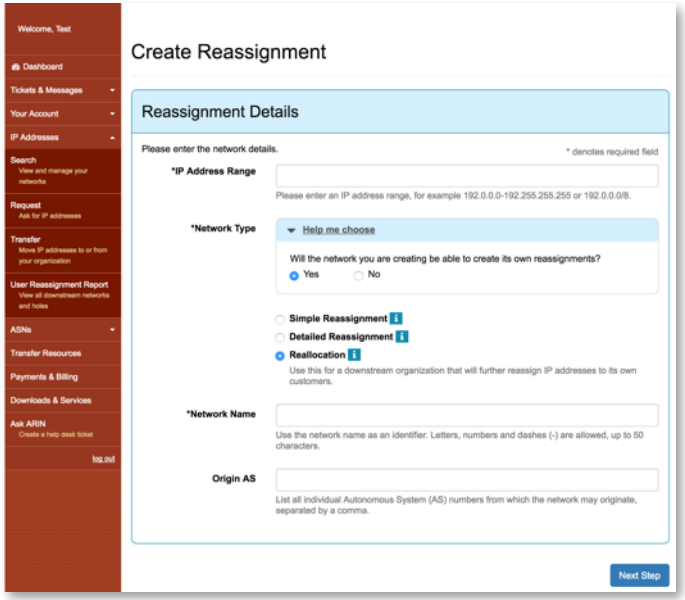
Main Navigation



- Added click-to-expand sub-navigation
- Grouped related items
- IP Addresses and ASNs are now top-level items
- Added help text to items


Welcome, Test
Dashboard
Tickets & Messages
Your Account
IP Addresses
Search
View and manage your networks
Request
Ask for IP addresses
Transfer
Move IP addresses to or from your organization
User Reassignment Report
View all downstream networks and holes
ASNs
Transfer Resources
Payments & Billing
Downloads & Services
Ask ARIN
Create a help desk ticket
log out
Create Reassignment
Reassignment Details
Please enter the network details.
* denotes required field
*IP Address Range
Please enter an IP address range, for example 192.0.0.0-192.255.255.255 or 192.0.0.0/8.
*Network Type
Help me choose
Will the network you are creating be able to create its own reassignments?
Yes
No
Simple Reassignment
Detailed Reassignment
Reallocation
Use this for a downstream organization that will further reassign IP addresses to its own customers.
*Network Name
Use the network name as an identifier. Letters, numbers and dashes (-) are allowed, up to 50 characters.
Origin AS
List all individual Autonomous System (AS) numbers from which the network may originate, separated by a comma.
Next Step

SWIP EZ
Create Reassignment



- Has a short quiz that chooses the SWIP type based on your answer
- Provides the details about each SWIP type on demand (click the “i” icon)

Operational Achievements

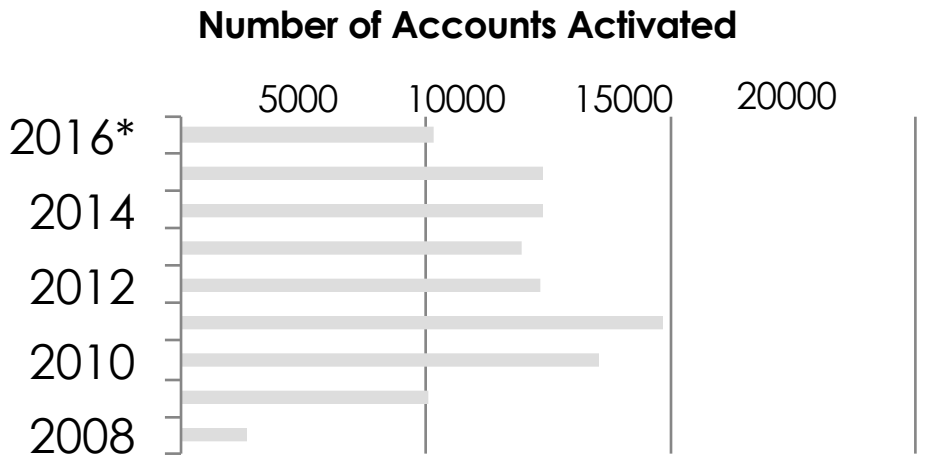
- **Office Move**
  - Much work to make ARIN move seamless
  - Buildout of new server room
  - Redo of Internal network – we improved the segmentation of the internal network per security audit recommendations
- **Better Security Posture**
  - Keep on implementing security audit recommendations
  - Better view on catching "interesting" traffic within our networks

Operational Challenges

- **DDOS attacks have thankfully subsided (multiple Friday events)**
- **Old computer room infrastructure was aging and becoming difficult to maintain**
  - Our generator was running based on low-voltage to our facility for multiple days
  - Generator fuel delivery became problematic based on small tank size and constant overfills so…
  - We ran our own fuel delivery service for the last week of occupancy

ARIN Online Usage

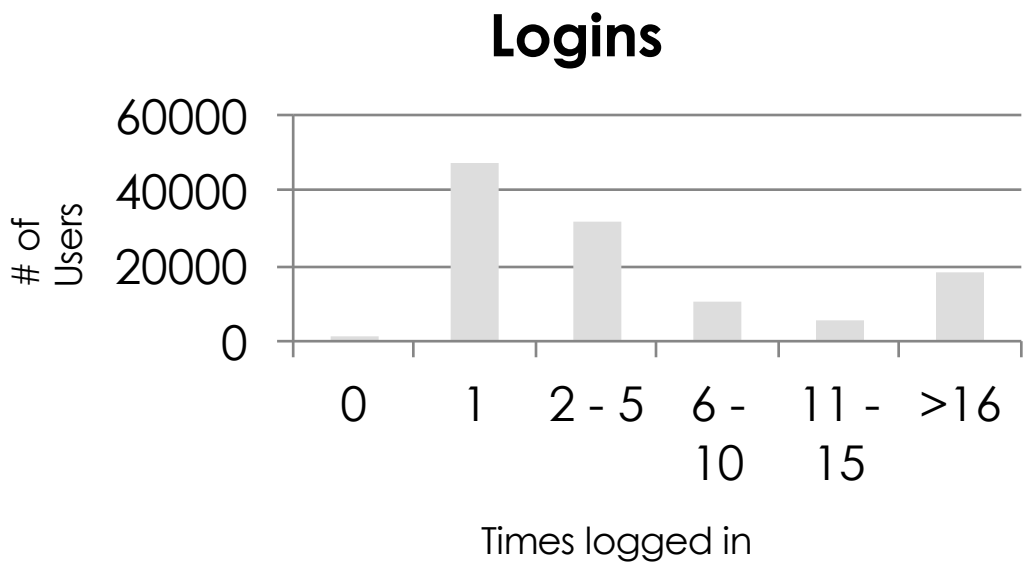
117929 accounts activated since inception through Q3 of 2016



* Through Q3 of 2016

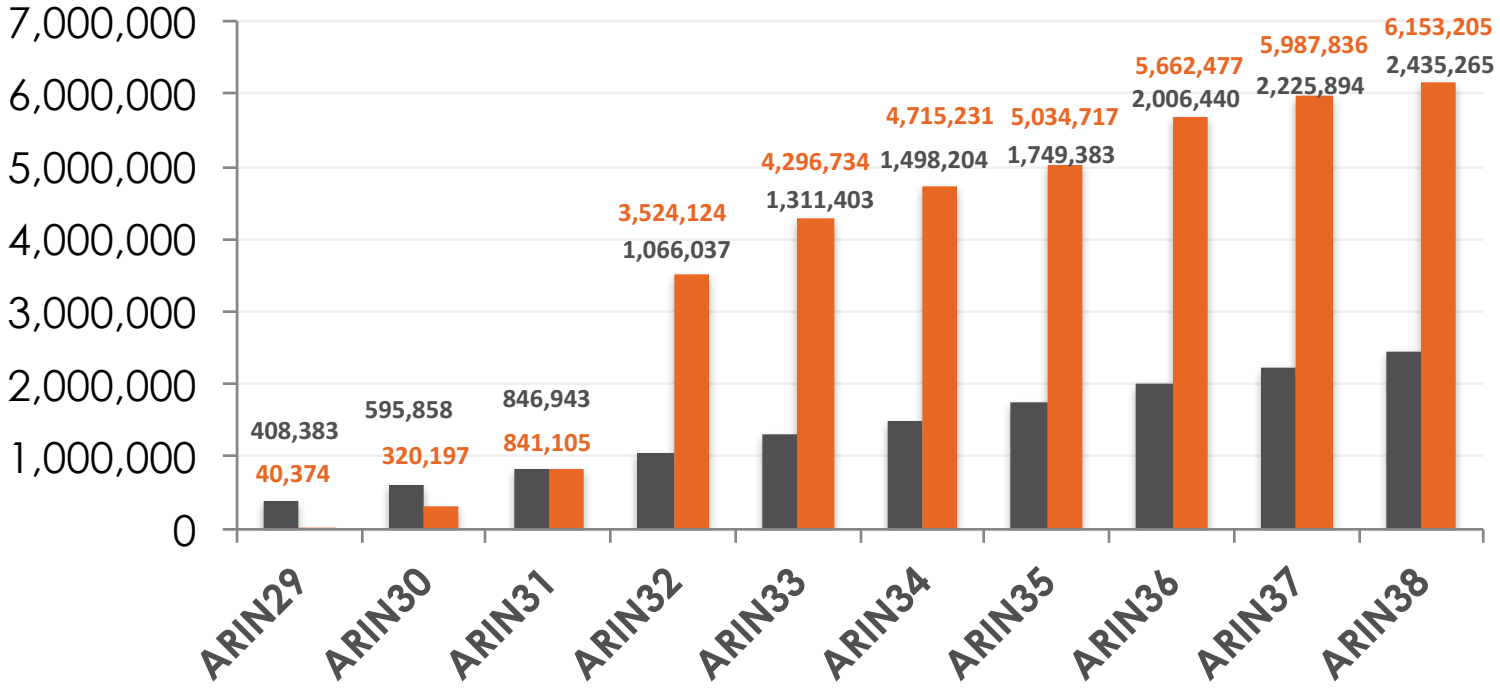
Active Usage of ARIN Online

Logins from inception through Q3 of 2016



Reg-RWS Transactions

(cumulative – orange: restful/black: templates)



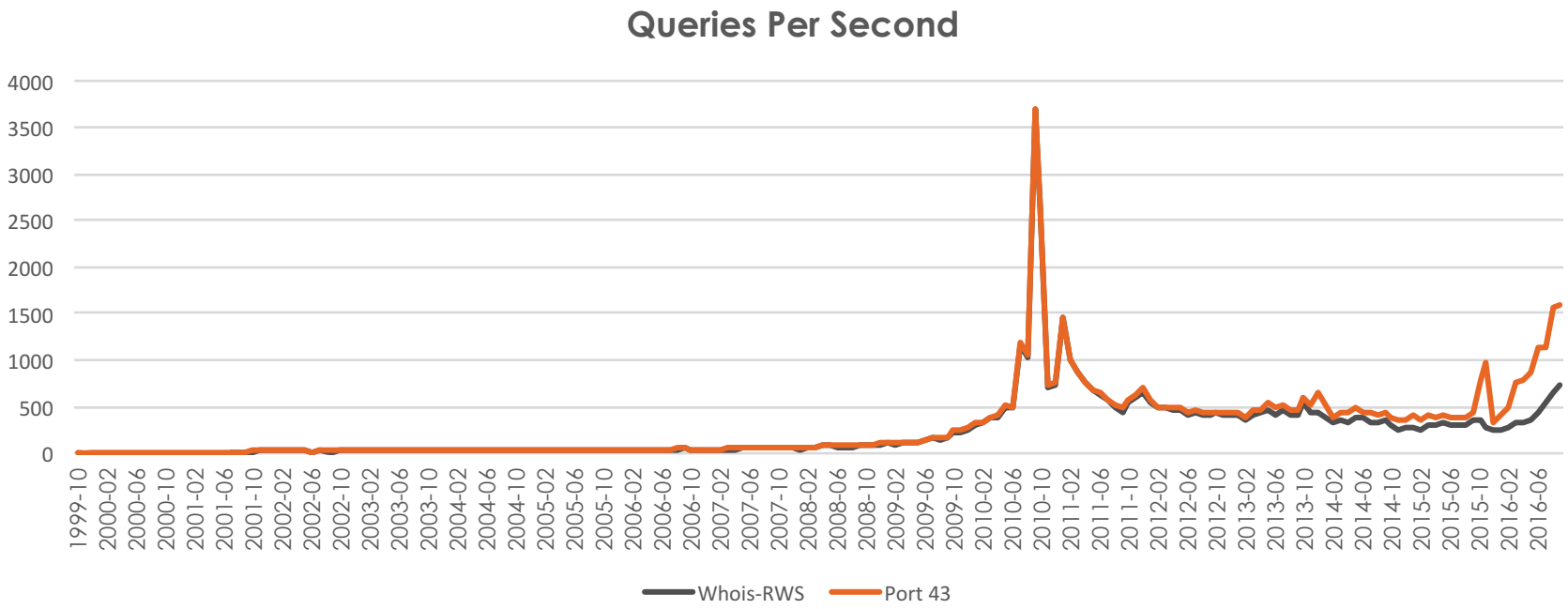
DNSSEC

	ARIN 38
Number of Orgs with DNSSEC	137
Total Number of Delegations	603,296
DNSSEC Secured Zones	632
Percentage Secured	0.1 %

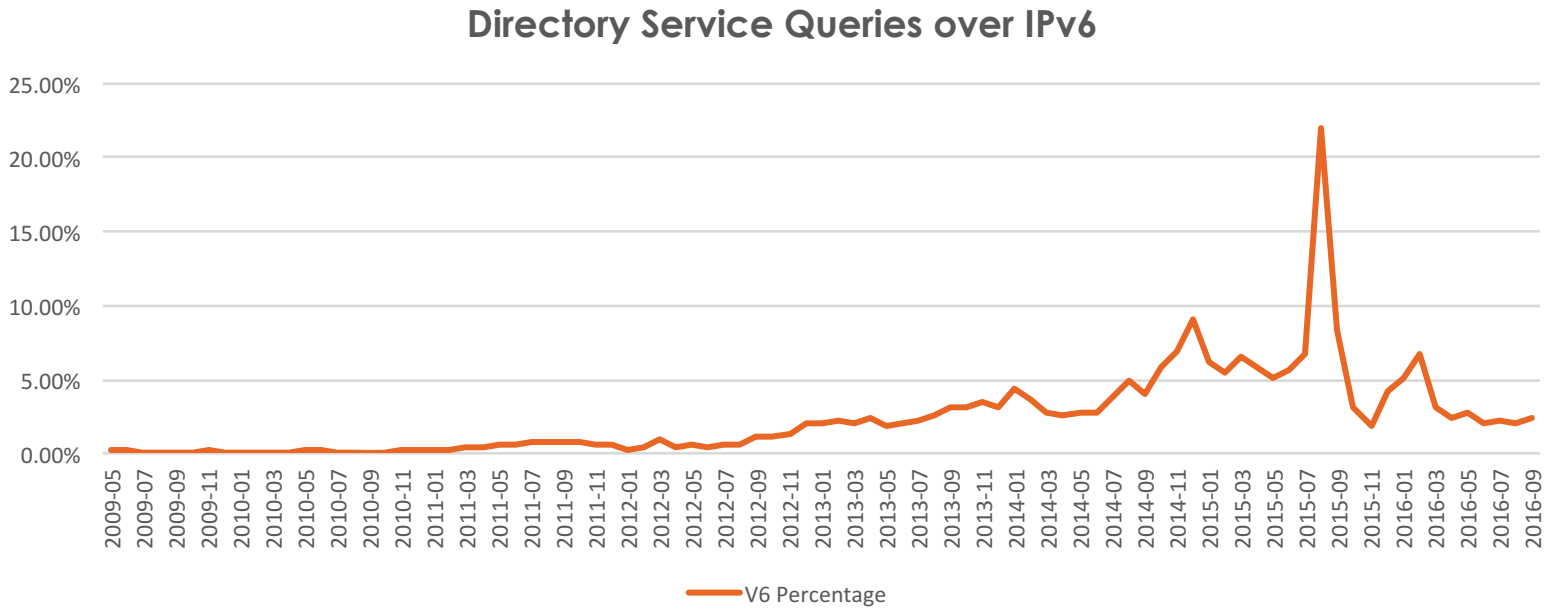
RPKI Usage

	Oct 2012	Apr 2013	Oct 2013	Apr 2014	Oct 2014	Apr 2015	Oct 2015	Apr 2016	Oct 2016
Certified Orgs		47	68	108	153	187	220	250	268
ROAs	19	60	106	162	239	308	338	370	414
Covered Resources	30	82	147	258	332	430	482	528	577
Up/Down Delegated			0	0	0	1	2	1	2

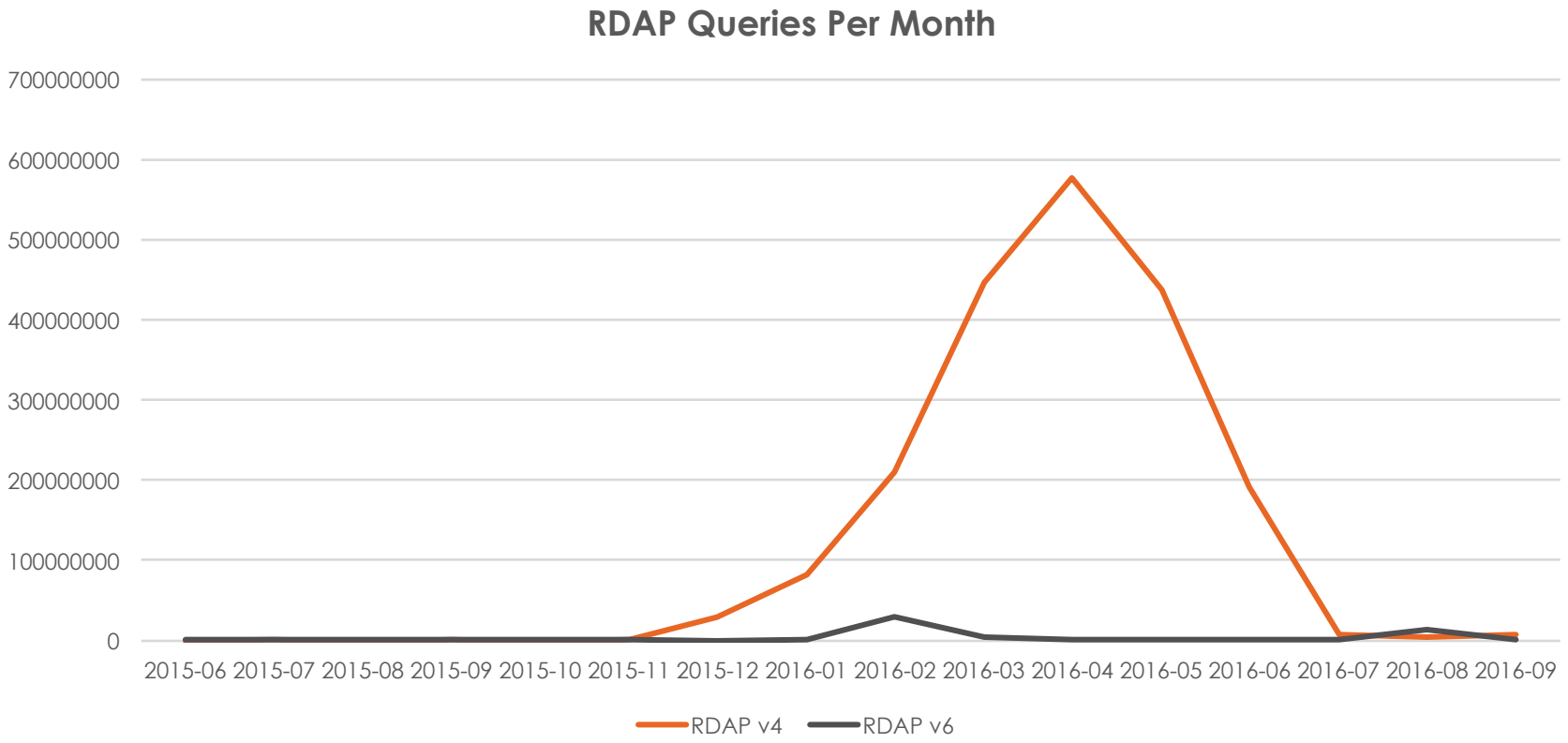
Whois Queries Per Second



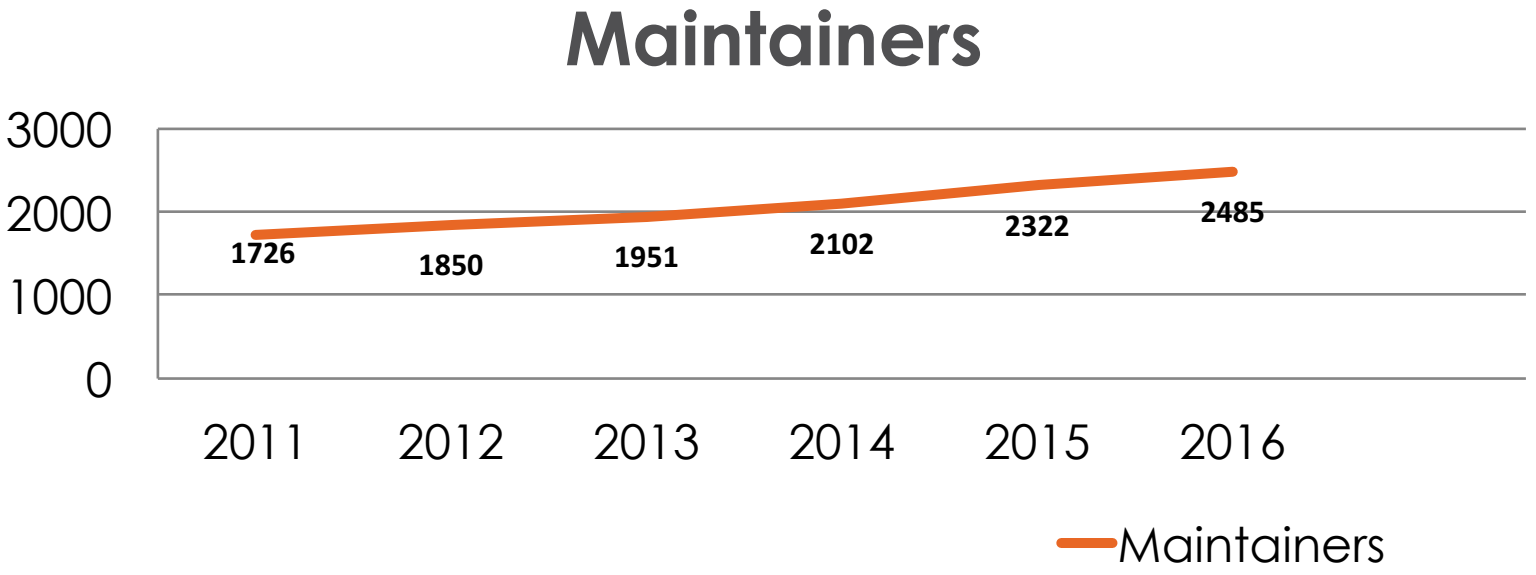
Whois via IPv6



RDAP

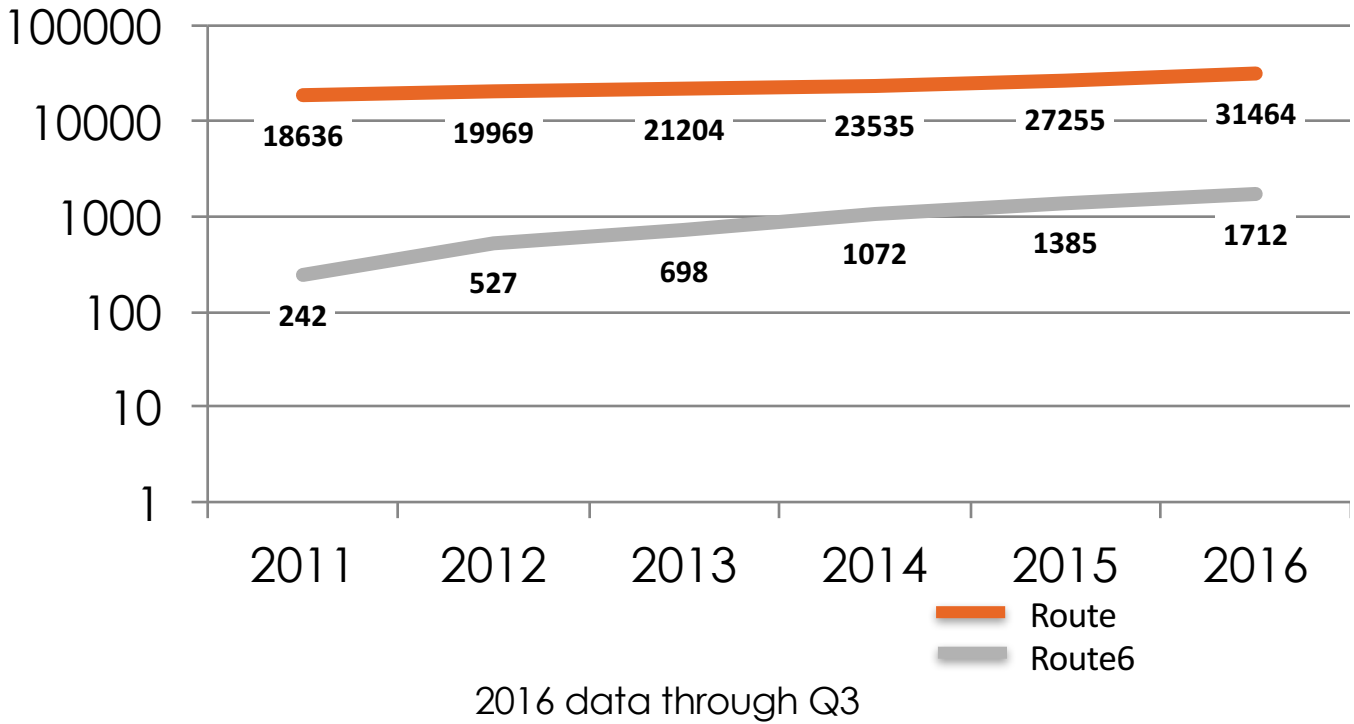

RDAP Queries Per Month
700000000
600000000
500000000
400000000
300000000
200000000
100000000
0
2015-06 2015-07 2015-08 2015-09 2015-10 2015-11 2015-12 2016-01 2016-02 2016-03 2016-04 2016-05 2016-06 2016-07 2016-08 2016-09
RDAP v4
RDAP v6

IRR Maintainers



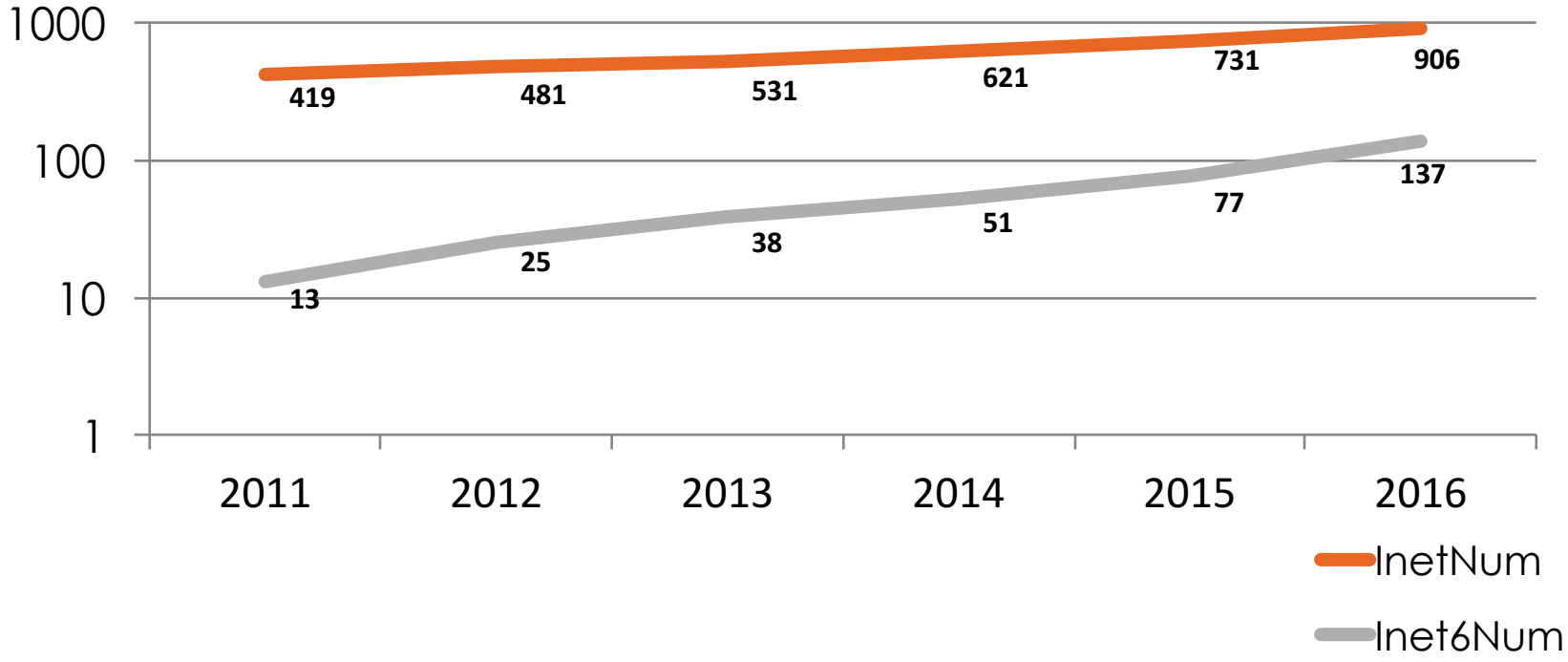
2016 Data through Q3

IRR Route / Route6



2016 data through Q3

IRR InetNum / Inet6Num



2016 data through Q3

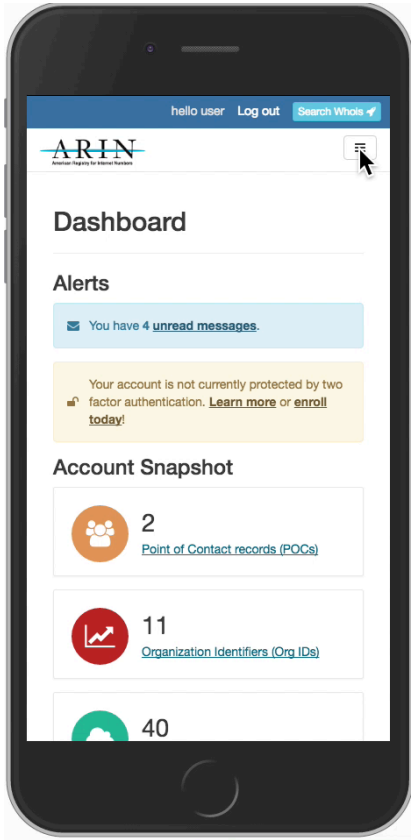
IRR object breakout by Organization

Number of Organizations	Number of Objects
44	100-2000
3	90-99
4	80-89
5	70-79
17	60-69
8	50-59
405	10-49
551	5-9
1476	1-4

What we are working on through 2017 Q1

- **Better Management of voting contacts**
- **Automated installation of software coupled with work on fully redundant services (like Reg-RWS)**
- **Starting work on OAuth**
  - Allow for authenticated users to receive unlimited query responses (ACSP 2012.20)
  - Use also in ARIN Online to remove timeout issue (ACSP 2013.29)
- **User Accessibility/Responsive Website (ACSP 2016.2 and ACSP 2011.21)**

Responsive Website Demo



What we are working on through 2017 Q1

- **Technical backlog**
  - **Moving from Java6 to Java8 for application servers**
  - **Overhaul of monitoring system**
    - Main system is Sensu
    - Currently have 2 legacy systems that need to be folded into the main monitoring system
  - **Automated build systems**
    - Currently using puppet
    - Is there something better?
  - **Improved logging, etc**

Comments?