ARIN31

BARBADOS

Engineering Report

Mark Kosters

Engineering Theme

- **2012 success is being aided by contractors (but not near as many)**

- **We have one ARIN FTE slot open**

- **Lots of work is done, but there is much more to do**

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Staffing

- **Operations**
  - **7 Operations staff + 2 Managers – FULLY STAFFED (up 3 since ARIN 30)**
- **Development**
  - **7 Developers + Manager – FULLY STAFFED (up 2 since ARIN 30)**
  - **1 Contractor (down 1 since ARIN 30)**
- **Quality Assurance**
  - **4 QA + Manager (up 1 since ARIN 30) – ONE OPENING**
  - **2 Contractors (down 2 since ARIN 30)**
- **Project Management**
  - **1 Project Manager**
- **Management**
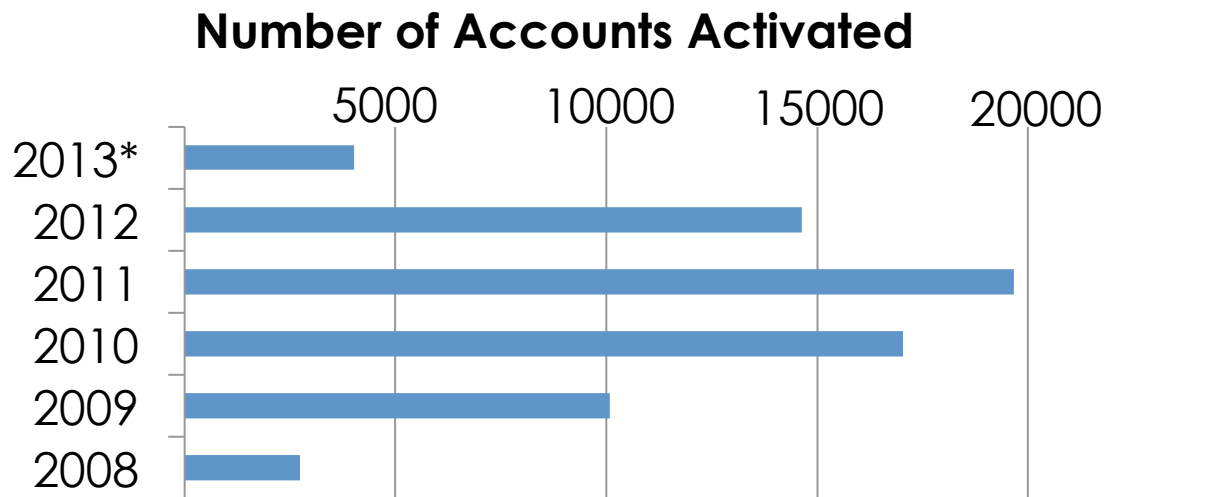 - **1 (me)**

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Operations

- **Upgrading end-of-life equipment**

- **Maintaining the various environments we have running (Production/OT&E/Dev/QA/Staging)**

- **EMC and Oracle challenges**

- **Load Balancer stability**

- **Moving production to the colocation facility**

- **IT support**

- **Billing Integration**

- **Replaced 12 year old PBX with VOIP-based system**

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Core Service Statistics

- **ARIN Online**
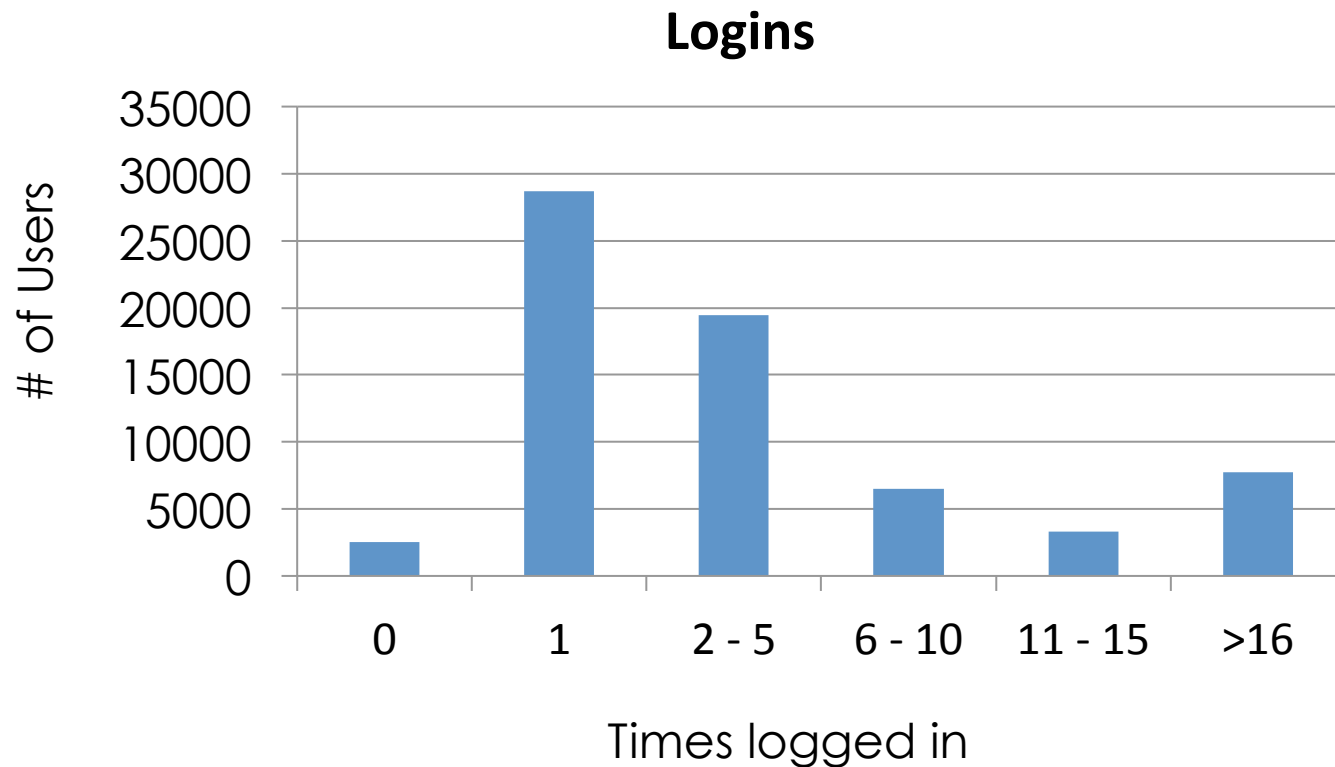- **Reg-RWS**
- **Whois-RWS**
- **IRR**
- **RPKI**

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How is ARIN Online used?

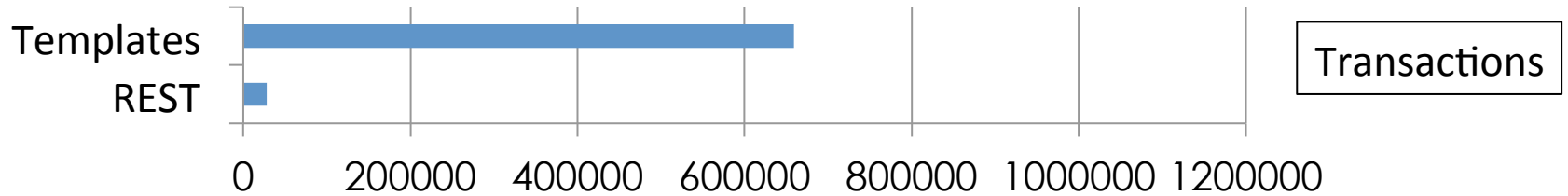- **62,998 accounts activated since inception through Q1 of 2013**

Number of Accounts Activated

* Through Q1 of 2013

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Active Usage of ARIN Online

Logins

(# of Users vs. Times logged in)

- 0: ~2500
- 1: ~28000
- 2 - 5: ~19500
- 6 - 10: ~6500
- 11 - 15: ~3500
- >16: ~7500

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Reg-RWS (RESTful Provisioning)

ARIN XXIX

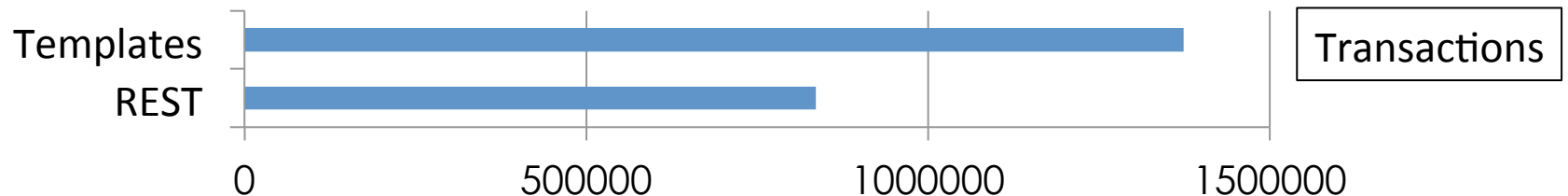Transactions

ARIN XXX

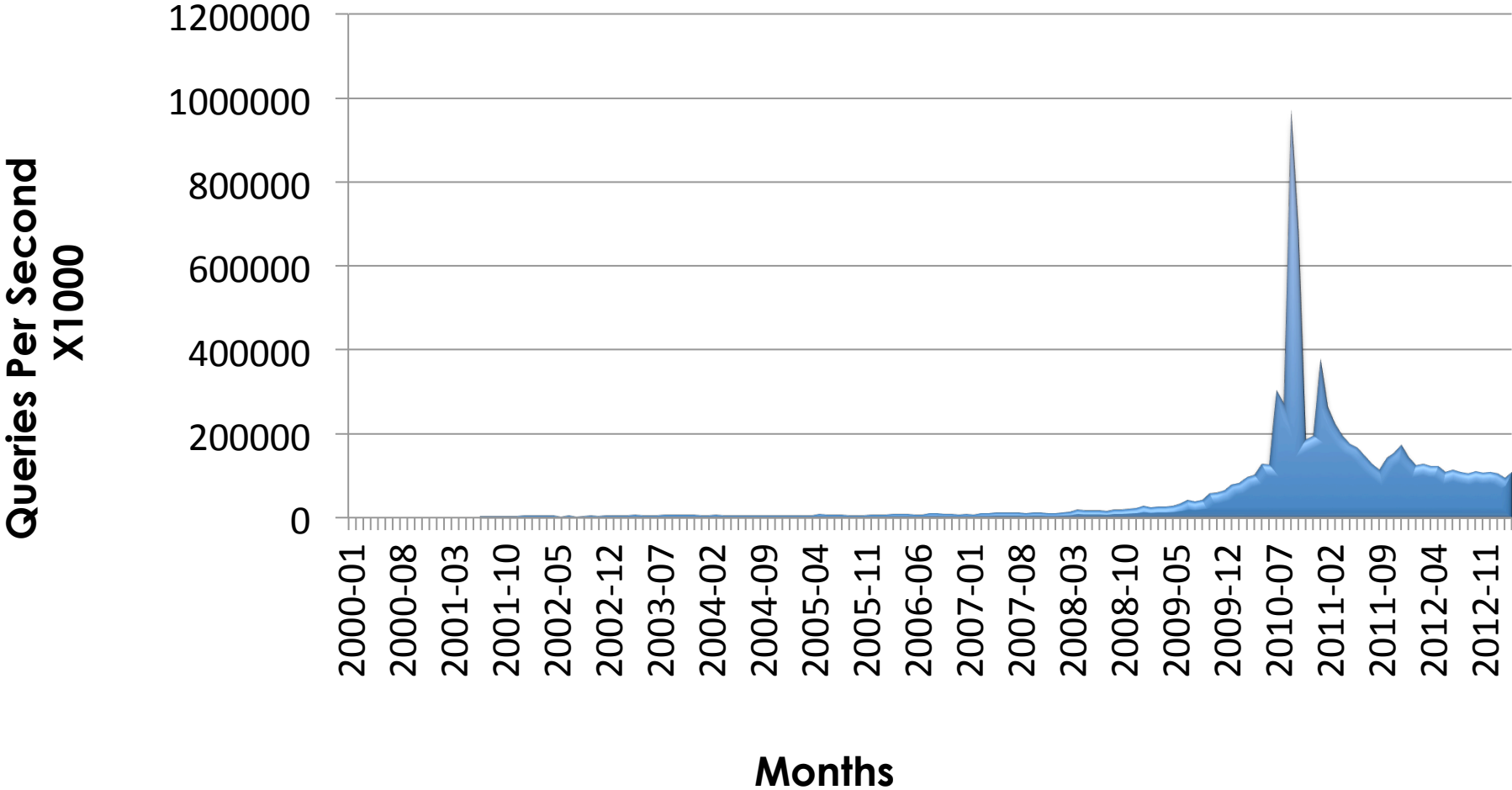Transactions

Today

Transactions
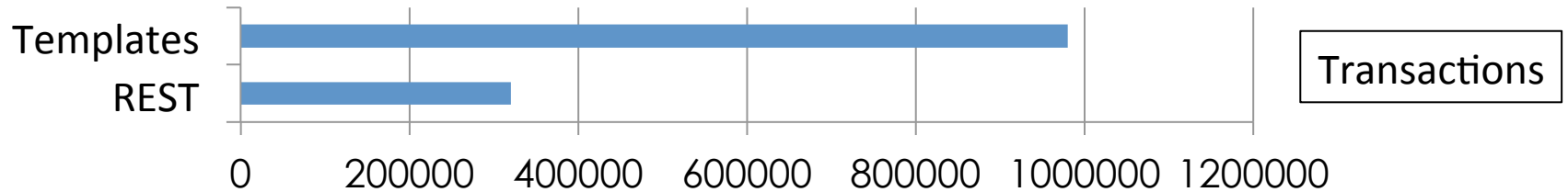
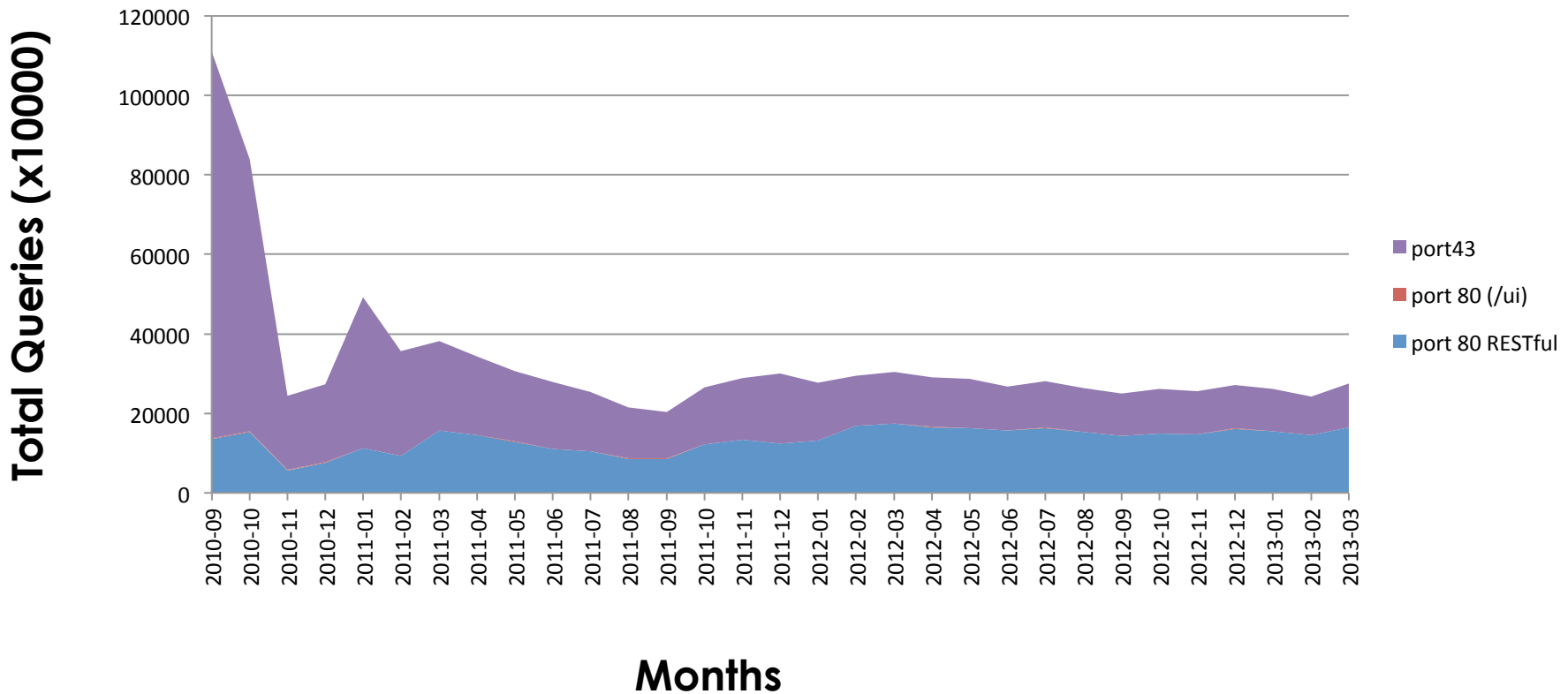Cumulative totals since April, 2011

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Whois-RWS Traffic Loads

- **Running "normally" now at 420 queries per second (QPS)**
  - **Up 18 QPS since last meeting**
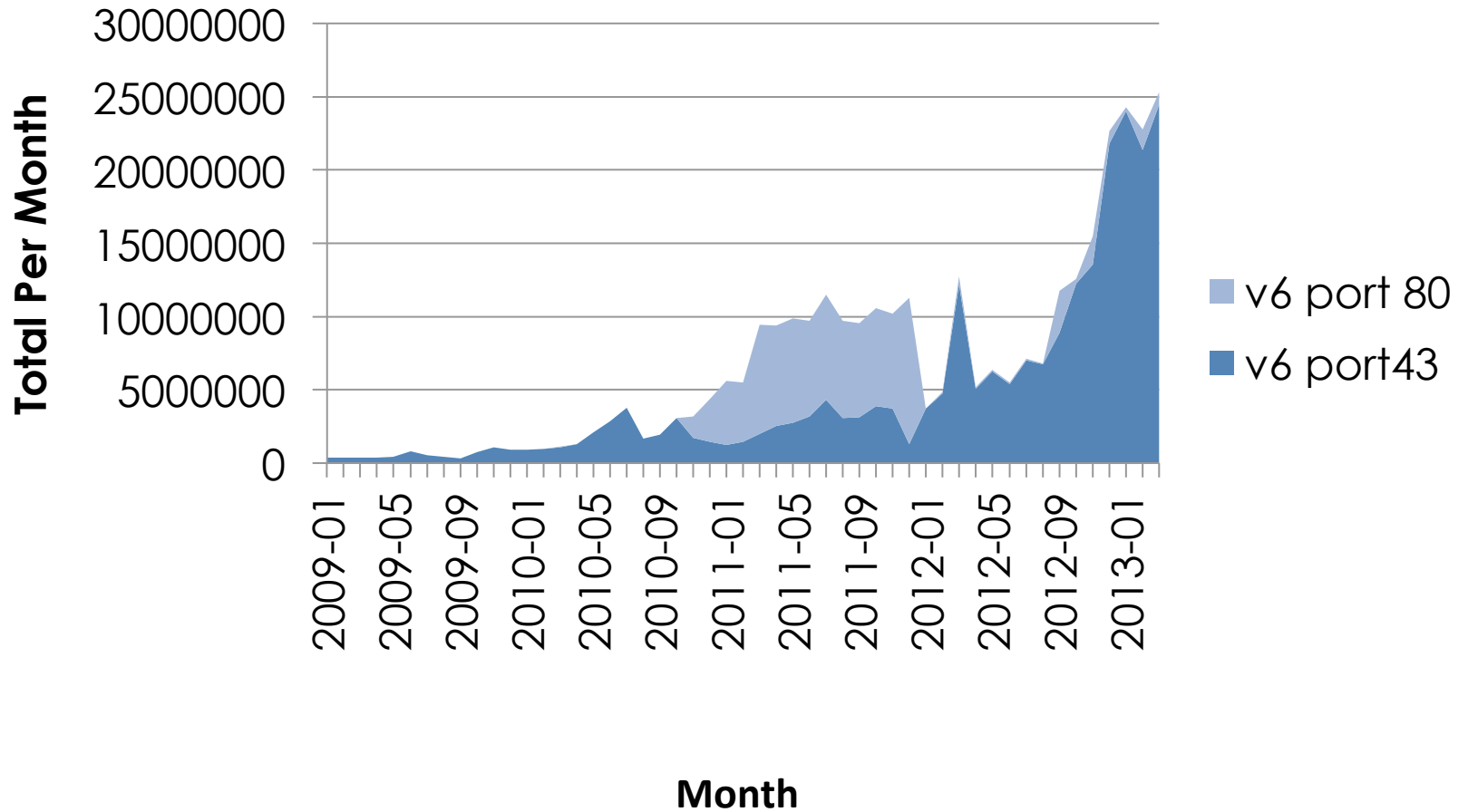- **RESTful calls have overtaken Port 43 calls since March of 2012**

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Whois-RWS
Queries on Port 43
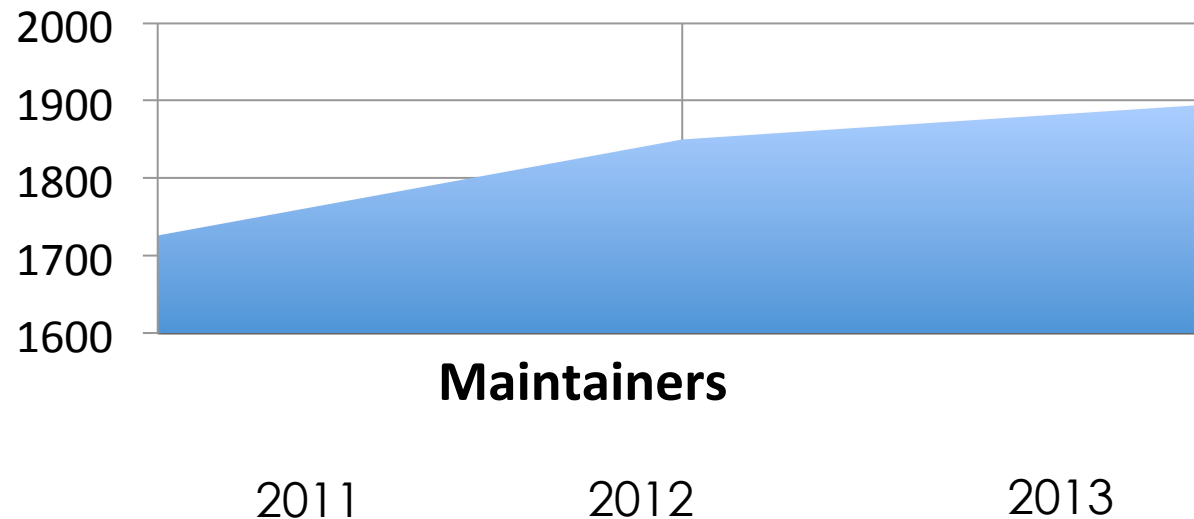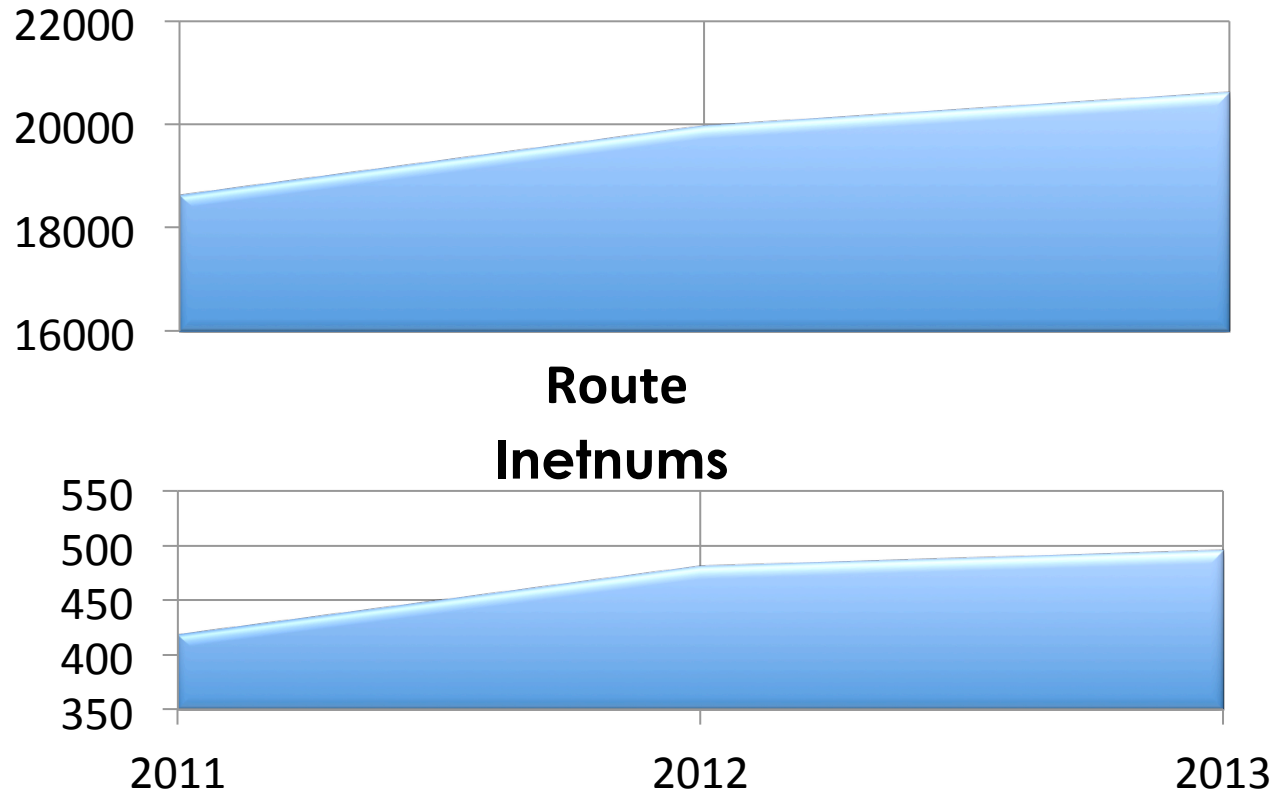
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Whois-RWS Queries
Broken out by Service Type

Whois-RWS – IPv6

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IRR Usage over the last two years

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IRR Usage over the last two years

IRR Usage over the last two years

Route6

Inet6nums

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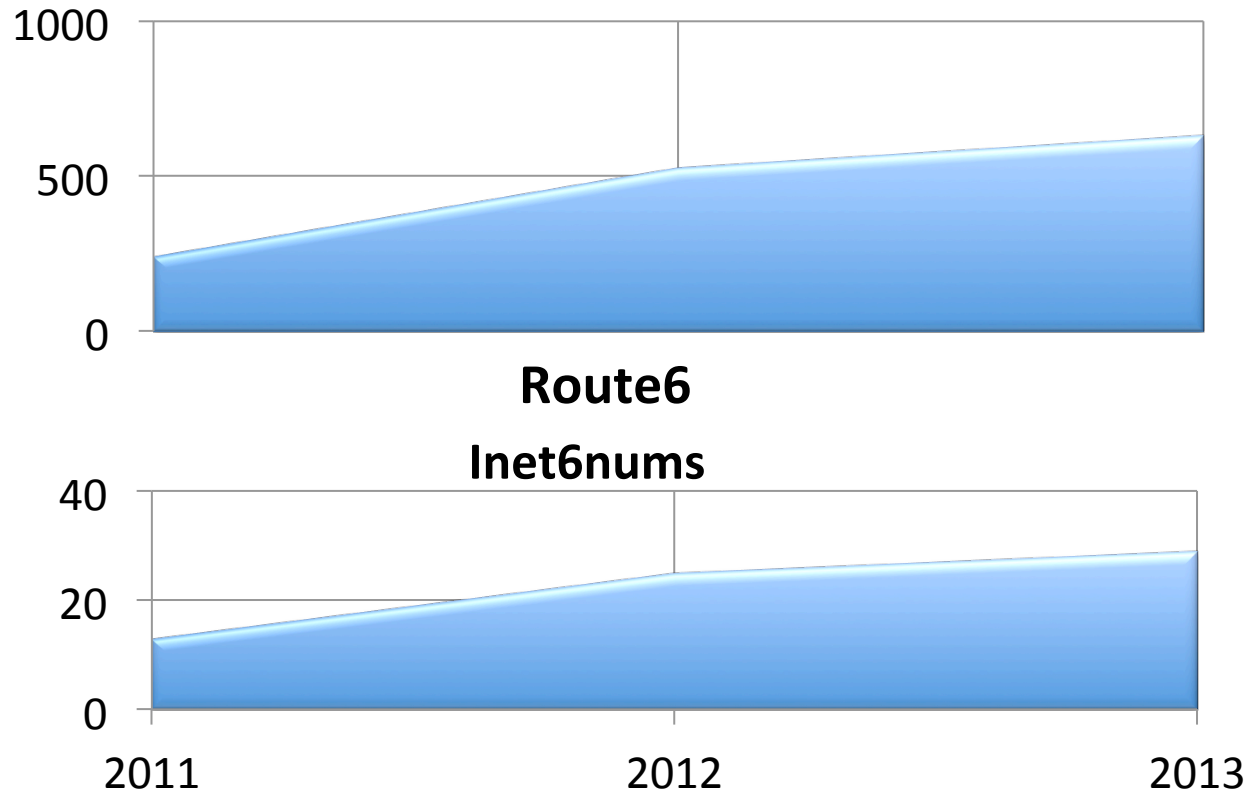
Production RPKI

- **Getting the Trust Anchor**
  - 72 people have signed the RPA as of 4/13
  - This is up from 27 reported at ARIN XXIX

- **Signing Resources**
  - 47 Organizations with certified resources
  - 21 Organizations with ROAS (was 7 at ARIN XXIX)
  - 60 ROAS (was 19)
  - 82 Networks/AS's (was 30)

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Production RPKI

- **Web Delegated RPKI**
  - **0** participants as of Apr 18, 2013
  - Not unexpected
  - Only a handful delegated in RIPE's region
  - Why is it not so popular?
    - Need to setup your own CA and software suite
    - Very hard to setup up/down protocol
    - Not a lot of general interest

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Development/QA

- **Improvements to existing systems**
- **ARIN Online releases since ARIN XXIX**
  - Integrated Invoices
  - Fee Calculator
  - Web-Based Delegated RPKI
  - Extended Stats Enhancements
  - Various minor bug fixes

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Initiatives Currently Underway

- **Improvements to internal billing systems**

- **Integration of 3rd party election and meeting registration systems**

- **Move from Oracle to PostgreSQL**

- **Delegated RPKI using Up/Down protocol**

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Initiatives Currently Underway

- **Moving production away from ARIN HQ to colocation facility**
- **Creating OT&E instance of RPKI**

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Outage Observations

- **We have had numerous maintenance outages**
  - Mostly planned
  - Two unplanned
- **Root Cause**
  - Oracle housed on EMC
  - EMC has had numerous failures
    - Secondary systems did not work
    - Configuration issue on Oracle host

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So what, just call tech support

- **Both vendors are big – perhaps too big**
  - Multiple handoffs
    - Same questions asked
    - Same mitigation techniques demanded
  - ARIN is too small
    - Suboptimal support
    - Attempt to tell them we are important
    - Escalation to management is futile

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Comments?

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