American Registry for Internet Numbers, Ltd.

Summary Result of
Registration Services Department Audit

September 2015

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Audit Overview

The accounting and advisory firm of Baker Tilly was engaged by the American Registry for Internet Numbers (ARIN) to:

> Assess ARIN's current Registration Services Department (RSD) processes against ARIN's Number Resource Policy Manual (NRPM) in the following areas:
> - Internet Protocol (IP) address space allocation, transfer, and database record maintenance (both public and internal) for version 4 (IPv4) and version 6 (IPv6)
> - Fraud detection, prevention, and follow-up
> - Autonomous system number (ASN) allocation, transfer, and record maintenance
>
> Test specific tickets, on a sample basis, from all types of customer requests to validate that NRPM requirements and internal procedures are consistently followed

Baker Tilly performed the following activities to meet the objectives of this audit:

> Reviewed relevant documentation (e.g., NRPM, internal procedures, checklists, worksheets) to gain an understanding of ARIN's current registration processes (for a list of all documents reviewed, please see Appendix A)
>
> Conducted interviews with key RSD personnel to understand RSD's policies and procedures
>
> Validated that RSD met the requirements in the NRPM and followed internal procedures by reviewing a sample of 120 tickets used to track various customer requests (e.g., transfers, IPv4 requests, IPv6 requests)

Summary Results

During the course of the audit and based on the specific procedures performed, Baker Tilly did not identify any people, processes, or technology that were out of compliance with the NRPM. RSD has worked to maintain ARIN's compliance with the continually changing, community-based NRPM with dedicated people, processes, and technology. The department's collaborative and cross-trained management and staff understand, value, and support ARIN's mission. The department has continued to develop and revise practices adapted to equitably resolving the increasing volume of IPv4 requests and transfers. Staff appear to be mindful of their roles in detecting potential fraud perpetrated by users as they conduct their work. Management continues to look for ways to improve the organization and efficiency of RSD. Baker Tilly identified potential enhancements to clarify and update internal procedure documentation and improve process efficiencies (see the Themes section of this report for specifics).

Strengths

During the audit, we noted the following strengths exhibited by RSD:

> Establishing and communicating clear processes for distributing the remaining IPv4 address pool
>
> Understanding, valuing, and supporting ARIN's mission by the dedicated RSD management (i.e., interim Director of Registration Services, Principal Resource Analyst, and Principal Technical Analyst) and staff
>
> Understanding by staff of their role in identifying potentially fraudulent requests
>
> Automating the process for physically transferring resources between organizations to decrease likelihood that incorrect resources are transferred
>
> Maintaining reasonably prompt time frames for responding to customers despite the increasing volume of requests and added requirement of team review
>
> Documenting approval signatures on standardized paper file template for transfers
>
> Hiring additional staff with experience in interpreting legal documents to mitigate risks associated with 8.2 transfer requests

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Themes

The overarching themes observed during the audit are presented below along with related recommendations for potential enhancements:

#	Theme	Recommendations for ARIN's Consideration
1	**Internal comments** – Clarity and consistency in internal documentation and communication reduces the risk of contradictory, unclear, or unprofessional information in internal records that could provide exposure to customer/community scrutiny or disputes	The Director of Registration Services should emphasize to RSD staff that only factual information that supports the reasoning for ticket acceptance and rejection should be saved in tickets.
2	**Documentation of internal procedures** – Clear documentation provides proof that procedures were performed	The Director should require RSD staff to document all manual actions taken and reasons for taking action in the ARIN Online tickets.
3	**Internal procedures** – Including all key steps in internal procedures supports consistent processing of tickets as required by NPRM	RSD should enhance its internal procedures to include the specific criteria used by RSD for decision making and support the consistency of analysts' processing of requests.
4	**Process efficiency and consistency** – Efficient procedures support management of additional ticket volume	ARIN should continue to increase efficiency by implementing automated transfer request processes to replace the current work conducted manually and in a different system.

Appendix A: Documentation Reviewed

We reviewed the following documentation:

- 2015 ARIN Online Tickets [on a sample basis]
- 2015 Transfer Tickets [on a sample basis]
- ARIN IPv4 Countdown Plan
- ASN Requests Internal Procedures
- Breaking Down ARIN's remaining IPv4 Pool
- Completing Transfers Internal Procedures
- Inter-RIR (8.4) Transfers From ARIN Internal Procedures
- IPv4 Requests Internal Procedures
- IPv6 Requests Internal Procedures
- Issuing Address Space Internal Procedures
- Issuing AS Numbers Internal Procedures
- Legacy RSA Internal Procedures
- Number Resource Policy Manual (NRPM)
- Org Create (v2.0) Internal Procedures
- Org ID Consolidation Internal Procedures
- Org Name Changes Internal Procedures
- Org Recovery Internal Procedures
- POC Recovery Internal Procedures
- Quick Guide to Internet Number Resource Transfers
- Routing Registry Internal Procedures
- RPKI Internal Procedures
- STLS – Specified Transfer Listing Service Internal Procedures
- Transfer Billing Review Internal Procedures
- Transfers due to Mergers and Acquisitions (8.2) Internal Procedures
- Transfers to Specified Recipients (8.3) Internal Procedures