Fee Structure Review Discussion
John Curran
President and CEO

Fee Structure Review Panel

Goal: *"To consider the various long-term fee structures that were suggested by the community on this topic and to summarize their pros/cons in a report back to ARIN Board and community"*

Status: Initial draft of the Fee Structure Review Report is completed

- Balanced document describing each of the various approaches to how ARIN might structure its fees going forward.

- To be used to provide a common basis for discussion of the merits of various approaches - does not provide a recommendation.

- Covers seven alternative approaches for recovery of ARIN's costs from all contracted parties receiving registration services in a *fair and equitable* manner.

Fee Structure Review Panel – Members

- ARIN Board Finance Committee Members:
  - **Paul Anderson** *(Chair)*
  - **Aaron Hughes**
  - **Bill Woodcock**
  - **John Curran**
- At-Large ARIN Community Members:
  - **Tim St. Pierre**
  - **Steve Feldman**
  - **Brandon Ross**
  - **Daniel Alexander**
  - **Michael Sinatra**

Fee Structure Review Report

The fee structure proposals are considered in the report:

1.   **Current ARIN Fee Structure**
2.   **Extending IPv4 Fee Categories Proposal**
3.   **Linear Fee Categories Proposal**
4.   **Realign IPv6 Categories Proposal**
5.   **Algorithmic Fee Proposal**
6.   **Membership-based Proposal**
7.   **Transaction-based Proposal**

For each proposal, included is a short summary of the proposed fee structure including how fees would differ among those receiving ARIN registration services, the potential benefits of the proposed fee structure, and potential issues or concerns arising from proposed fee structure

Final Report Document sent to ARIN-Discuss & ARIN-PPML on 19 September 2014 –
http://lists.arin.net/pipermail/arin-ppml/2014-September/029075.html

ARIN Community Consultation to start next week on potential next steps; results of the consultation will be provided to the ARIN Board Finance Committee for their consideration.

Proposal #1 – Current ARIN Fee Structure

Summary:

ARIN's current fee structure provides for two major categories of registration fees: 1) Internet Service Providers, and 2) End-users (Legacy resource holders under contract pay based on the End-user fee schedule)

Internet Service Providers (ISPs) pay an annual amount based on the service category that accommodates both their total IPv6 and total IPv4 address holdings, with categories ranging from xx-small to xx-large, with stepped fees of $500/year to $32,000/year. Organizations with larger resource holdings than /12 (IPv4) or /20 (IPv6) pay in the largest (xx-large) category (fee schedules for ARIN's current fee structure can be found in **Appendix A.1**, "ARIN 2013 Revised Fee Structure")

Benefits:

ARIN's current fee structure provides simplicity of billing for organizations, in that an organization's fee category and invoice will not change without a significant change in resource holdings (i.e. expected to be an infrequent occurrence) and provides a single fee covering both IPv4 and IPv6 holdings. This also means that any organization that has IPv4 resources under contract can obtain a correspondingly sized IPv6 address block without any change in fees (with the exception of XX-Small who move up the fee schedule to X-Small, since /36 is the minimum IPv6 allocation under current number resource policy). The simplicity also readily allows ARIN to lower fees (as has been done several times) as it gains scale and efficiencies.

Proposal #1 – Current ARIN Fee Structure (cont.)

Concerns/Issues:

The largest 17 ARIN ISP members benefit from having their registration service fees capped at $32,000 per year (corresponding to XX-large, i.e. "larger than /12 of IPv4 space") despite having proportionately more resources for which ARIN is providing registration services. This raises concerns about whether the fee schedule can truly be deemed fair and equitable.

Additionally, the present fee structure significantly benefits end-users when compared to ISPs, by providing ongoing registration services for only $100/year per address block regardless of size (compared with ISP fees which are proportional to total address holdings.) It is not clear if the costs of providing registration services for end-user IP address blocks materially different than ISP address blocks.

There is some concern that the alignment of IPv4 categories and IPv6 categories creates a disincentive for appropriate IPv6 address space management, in that organizations are effectively forced to accept a smaller IPv6 address block than may be optimum in order to avoid changing their size category and resulting fee increase. Additionally since the minimum IPv6 allocation is a /36 block, there is a financial disincentive for XX-Small holders to deploy IPv6, as doing such would result in a category change from XX-Small to X-Small and net fee increase of $500 per year

Proposal #2 – Extending IPv4 Fee Categories

Summary:

This would extend ARIN's IPv4 fee categories to include two higher tiers with correspondingly greater annual registration service fees (XXX-Large and XXXX- Large) at ($64,000 and $128,000) per year respectively. The details of the proposed fee schedule with the additional categories are in **Appendix A.2**.

Benefits:

Extending the IPv4 Fee Categories would address the concern that the present fee schedule does not charge fees in proportion to the significant number resources that some very large ISPs hold. The addition of larger size categories to the ARIN fee schedule has ample precedent and could be phased in over time to smooth introduction to the affected community.

Concerns/Issues:

Additional fee categories for IPv4 generate additional revenue, which is not necessarily needed and may precipitously drop at some point given the transition to IPv6.

Proposal #3 – Realign IPv6 Fee Categories Proposal

Summary:

This proposal aims to realign the relationship between the IPv4 and IPv6 allocation sizes in the smallest fee categories. The primary motivation to this proposal is to remove the financial disincentive to XX-Small holders and the operational disincentive to X-Small holders, when they request IPv6 address space. The change is accomplished by establishing a realignment of the lower end of the fee schedule, allowing all smaller resource holders to still have /32 minimum of IPv6 address space. The full analysis of the proposal is included in **Appendix A.3**. (The operational disincentive to X-Small holders is based on the current minimum allocation of /36, which is not cleanly aligned on a hextet boundary.)

Benefits:

·   Removes the financial disincentive to deployment of IPv6 by XX-Small holders and the operational disincentive to X-Small holders

·   Provides an incentive to conserve IPv4 space among Small and smaller fee categories

·   Eliminates small block parsimony among small holders since there will no longer be any incentive to desire a block smaller than a /32.

·   Does not penalize early adopters that currently hold blocks smaller than /32.

·   Relatively simple to implement, and would require minimal changes to existing fee schedule and related procedures and billing processes.

Concerns/Issues:

·   May reduce ARIN revenues by a small amount.

·   A reevaluation of this policy will be needed when IPv4 usage is in decline to determine if revenue will be heavily impacted and if fairness has been retained

Proposal #4 – Linear IPv4 Fee Categories

Summary:

This would create more granular IPv4 fee categories, which have registration service fees directly proportional to total address space held.   A linear fee model provides a more equitable distribution of costs based on resources held. A linear model where annual fees are directly proportional to total resources held, calculated on CIDR boundaries and based on the largest category of IPv4 or IPv6 holdings could provide a more equitable distribution of costs. A /20 IPv4 or /36 IPv6 resource holder starts at $50 per year, with the fees doubling each time the allocation size doubles (increment in CIDR size). These categories extends all the way up to /7 IPv4 and /22 IPv6, with those large organizations paying $409,600 annually. The IPv4 and IPv6 allocation sizes are aligned so that a network deploying IPv6 with an appropriate allocation size should see no increase in fees. There is also no longer any division between end user and ISP fees.

The full analysis of the proposal is included in **Appendix A.4.**

Benefits:

This proposal encourages better IP management, especially in the current X-Large and XX-Large categories. Under the current system, there is no economic benefit to managing address space efficiently once an organization goes beyond a /12, and larger organizations have a significant cost advantage over smaller ones, as their cost per unit of resource is significantly lower.   The linear model is also a more equitable solution, as fees would be directly proportional to total resources held. An additional benefit of the change is that it provides a strong incentive to move towards an IPv6 only environment, as an organization that reduces its use of IPv4 will see a significant reduction in their registration fees.

Concerns/Issues:

The linear fee schedule results in fees that are several orders of magnitude higher than existing fees for the largest ISPs, and phasing these significantly higher fees in successfully could pose a challenge. Furthermore, such a discrepancy in fees without any corresponding increase in say on ARIN's governance matters may not be fair, and the community needs to consider whether its desire for equitable arrangements extends to governance representation.

Proposal #5 – Algorithmic Fee Proposal

Summary:

Rather than using discrete fee categories, this proposal would use a formula based upon the resource holder's total address allocations. This eliminates the step function between category levels, replacing it with a smooth increase in fees as resource holdings increase. The full analysis of the proposal is included in **Appendix A.5**.

Benefits:

· Fees rise gradually with increased allocations, rather than in discrete steps at arbitrary boundaries.

· It would be simple to change total revenues by adjusting the constants.

· This is similar to the APNIC's current fee structure, so their experience could be helpful in evaluating this proposal.

Concerns/Issues:

· The change in total revenue might not align with ARIN's actual cost recovery needs.

· The fee amounts no longer fit into neat buckets, so may be harder to predict for budgetary purposes.

Proposal #5 – Algorithmic Fee Proposal

Summary:

Rather than using discrete fee categories, this proposal would use a formula based upon the resource holder's total address allocations. This eliminates the step function between category levels, replacing it with a smooth increase in fees as resource holdings increase. The full analysis of the proposal is included in **Appendix A.5**.

Benefits:

· 	Fees rise gradually with increased allocations, rather than in discrete steps at arbitrary boundaries.

· 	It would be simple to change total revenues by adjusting the constants.

· 	This is similar to the APNIC's current fee structure, so their experience could be helpful in evaluating this proposal.

Concerns/Issues:

· 	The change in total revenue might not align with ARIN's actual cost recovery needs.

· 	The fee amounts no longer fit into neat buckets, so may be harder to predict for budgetary purposes.

Proposal #6 – Member-based Fee Proposal

Summary

Transition to a single flat annual "membership" fee for all organizations (ISPs and End Users) that would encompass all IP address block related registry services and transactions without any further charge (excludes ASN numbers).

Under this proposal, the annual fee would be set at $1400/year; this modest amount for all organizations is made possible by the significant number of end-users who would be paying on this schedule. The full analysis of the proposal is included in **Appendix A.6.**

Benefits:

·   Registry users would have a relatively low-cost simple fixed fee, which is both understandable and easy to budget.

Concerns/Issues:

·   Nearly all end-users would see an increase in fees; many would see an increase of 400% or more.

·   The fairness of the fees is predicated on all users either receiving the same direct value or imputing the same costs onto ARIN's operations, neither of which is likely to be true. However, it may be claimed that all registry users benefit indirectly in a similar manner by having a globally unique registry of Internet addresses.

Proposal #7 – "Transaction-based Fee Proposal"

Summary

Switch from a subscription model based on size of address holdings to a flat membership fee for all address holding organizations (ISPs and End Users) along with per transaction fees corresponding to level of effort for registration service requests.

Under this proposal, the annual fee would be set at $880/year. In addition to this per transaction fees would be established for new resource requests and resource transfer requests at $1900 and $3800 respectively. These fees would be reviewed and adjusted annually based on changes to the total membership.

The analysis of the Transaction proposal is included in **Appendix A.7.**

Benefits:

· Registry users would have a relatively low-cost simple fixed fee, which is both understandable and easy to budget.

· Transaction fees result in appropriate cost allocation to parties making additional use of registry services

· Ends the need for separate fee structures between ISP and end users

· Would drastically increase ARIN membership as all end-users would be members

Concerns/Issues:

· Nearly all end-users would see an increase in fees

· Transaction fees would likely need to be prepaid in order to avoid collection issue with denied requests

· The high cost of transactions may discourage organizations from correcting the Whois database following M&A activities, reducing the accuracy of the data

· Potential perception that organizations who rarely use ARIN Services are subsidizing those who use them on a daily basis.

Discussion Topics

1. Several proposals (Extend IPv4 Fee Categories, Linear Fee Proposal) propose significantly higher fees for the organizations holding large numbers of addresses, suggesting that ARIN is providing more service to larger organizations. However, ARIN's costs attributable to registry operations are proportionate to address blocks and transactions, not discrete addresses. Is it equitable to recover costs based on perceived value rather than in proportion to imputed workload to ARIN?

2. ARIN's mission (to improve the business conditions of ISPs and the entire internet community via the management of Internet number resources in the service region) is a service to the industry as a whole, as opposed to providing particular services to individual members– does this argue that cost-recovery should reflect a flat fee (for example, the "Member-based Fee Proposal")?   Furthermore, some trade associations scale their membership fees based on size of the participant, is this better done explicitly based on annual revenue/budget, or by the approximation in ARIN's current fee structure of total address holdings?

3. Should ARIN pursue a more service/transaction-based services and fee approach (e.g., "Transaction-based Fee Proposal") if it would require changing the organization from a not-for-profit trade association to a more commercial structure, or creation of a for-profit subsidiary to conduct these activities?

4. The vast size of IPv6 address space allows for issuance of very large address blocks to initial requestors, and presently the structure of the fee schedule is one of the few counter-pressures encouraging efficient use. Should the ARIN fee schedule be structured for convenience of use rather than encourage efficient utilization? (e.g. as suggested by the "Realign IPv6 Fee Categories Proposal")

Discussion